

COMMUNICATING NURSING RESEARCH

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VOLUME 50

50

YEARS

OF LEADERSHIP:  
CONTINUING THE VISION

2017



60TH ANNIVERSARY | 1957-2017

## **WESTERN INSTITUTE OF NURSING**

The Western Institute of Nursing (WIN) is the western regional nursing organization that succeeded the Western Council on Higher Education for Nursing (WCHEN). In 1985, following extensive deliberations by special committees, the decision to create an autonomous, self-supporting organization was implemented. At the first meeting of the new organization, nurses from collegiate schools of nursing and health care agencies adopted the bylaws and the new name of the organization, Western Institute of Nursing. The organization moved to Portland, Oregon on July 1, 1996. The Western Institute of Nursing was incorporated on November 3, 1998 in accordance with the Oregon Nonprofit Corporation Act.

WIN exists to bring together a diverse community of nurses in a shared commitment to transcend the boundaries of knowledge development and application to advance the discipline and drive improvements in practice, outcomes, and cost. The organizational structure includes the Membership Assembly, the Board of Governors, committees, and societies.

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# **COMMUNICATING NURSING RESEARCH**

Volume 50

## **50 YEARS OF LEADERSHIP: CONTINUING THE VISION**

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- Volume 4: Is the Gap Being Bridged?
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## FOREWORD

The 2017 WIN Conference is an historic event - the 50th Communicating Nursing Research Conference and the 60th Anniversary of the Western Institute of Nursing (WIN). WIN began in August 1956, when the Western Interstate Commission for Higher Education (WICHE), committed to collaboration and effective use of limited resources, selected nursing as one of its programs. The new program was the Western Council on Higher Education for Nursing (WCHEN). The core value on which WCHEN was formed was the interrelatedness of education, practice and research. In the mid-1950s in all of the West, there were only a half dozen programs preparing nurses for leadership positions in nursing education, essentially no body of nursing research, and about 10 nurses with doctoral degrees, most of whom held degrees in disciplines other than nursing (Elliott, 1968).

WCHEN members decided early that the research infrastructure of member schools was an important emphasis. Three research conferences held between 1957 and 1962, prior to the current series of which we now celebrate 50 years. The early conferences featured seminars for faculty teaching research, designing and conducting research in patient care settings, and identifying research programs and areas needing study.

In 1968, Jo Eleanor Elliott, WCHEN Director, secured funding from the Division of Nursing, Department of Health, Education and Welfare (DHEW), (now Department of Health & Human Services (DHHS)), to support three communicating nursing research conferences. There were no precedents for the first planning committee to use to plan a research conference. They decided each conference would have a theme focused on one aspect of the research process. The first conference theme was “Communicating Nursing Research: The Research Critique.” Papers were invited, 44 were selected, and each had an accompanying critique. Attendance at the first conference was 44.

When federal funding was no longer available after the first six conferences, WCHEN members thought the conferences so important to the discipline, they developed a plan for a self-supporting conference. Members bought founding memberships for \$25.00 in the new Western Society for Research in Nursing (WSRN). The purposes were to support nursing research efforts in the West, provide a network for nurse researchers in the West, and sponsor the Annual Communicating Nursing Research conferences (Branstetter, 1992). The purposes of WSRN were folded into WIN’s core functions in 1996.

At this historic conference, we reflect on the vision and courage of those early founders and all the individuals who, throughout these 60 years, provided the leadership that has brought us to where we are today. I sometimes wonder what those early founders would think of our contemporary conferences. The 2017 conference will offer 624 presentations in podium or poster sessions. The 2017 attendance is not yet known, but 926 attended in 2016. The 2017 conference theme is “Leadership: Continuing the Vision.” We recommit to the rich history of this organization, keeping our vision focused forward to future challenges and opportunities.

Paula A. McNeil, RN, MS  
Executive Director

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## PREFACE

The 50th Annual Communicating Nursing Research Conference, “50 Years of Leadership: Continuing the Vision,” was held April 19-22, 2017 at the Colorado Convention Center in Denver, Colorado.

The keynote address was delivered by **Doris Kearns Goodwin**, PhD, Pulitzer Prize-winning author and presidential historian. State of the Science presentations were delivered by: **Susan Bakewell-Sachs**, PhD, RN, FAAN, Vice President for Nursing Affairs and Dean, School of Nursing, Oregon Health & Science University, Portland, OR; **Linda Sarna**, PhD, RN, FAAN, Dean and Professor, Lulu Wolf Hassenplug Endowed Chair, School of Nursing, University of California, Los Angeles, CA; and **Heather M. Young**, PhD, RN, FAAN, Dignity Health Dean’s Chair in Nursing Leadership, Founding Dean and Professor, Betty Irene Moore School of Nursing, Associate Vice Chancellor for Nursing, University of California, Davis, Sacramento, CA.

Two award papers were presented:

**Distinguished Research Lectureship Award: Joan L. F. Shaver**, PhD, RN, FAAN, FWAN, Professor and Dean, College of Nursing, The University of Arizona, Tucson, AZ; and

**Carol A. Lindeman Award for a New Researcher: Manu Thakral**, PhD, NP, Postdoctoral Research Fellow, Group Health Research Institute, Seattle, WA.

**The Western Academy of Nurses** panel focused on leadership in omics education, practice, and research. Panelists included: **Ginette A. Pepper**, PhD, RN, FAAN, FGSA, Helen Lowe Bamburger Colby Presidential Endowed Chair in Gerontological Nursing & Professor, University of Utah College of Nursing and Adjunct Professor, University of Colorado Denver, Anschutz Campus, College of Nursing; **Charles A. Downs**, PhD, ACNP-BC, FAAN, Assistant Professor, Biobehavioral Health Science Division, The University of Arizona College of Nursing; **Laura D. Rosenthal**, DNP, ACNP, FAANP, Assistant Professor, College of Nursing, Specialty Director, AG-ACNP Program, University of Colorado Denver, Anschutz Campus; and **Margaret Heitkemper**, PhD, RN, FAAN, Chair, Department of Biobehavioral Nursing and Health Informatics, Elizabeth Sterling Soule Endowed Professor of Nursing, Director, Center for Research on Management of Sleep Disturbances, School of Nursing, University of Washington.

The Proceedings include the abstracts of symposium, podium, and poster presentations. One hundred and ninety-three papers were presented in podium sessions on a wide variety of topics, including completed research, theoretical papers, and projects. Forty-three papers were presented in nine symposia, and one hundred and fifty papers were organized in thirty-four other sessions. Four hundred and thirty-one posters were displayed over four poster sessions, representing projects and research, completed or in progress. A total of two hundred and one posters were submitted from member institutions for the Research & Information Exchange.

Awards were given to numerous WIN individual members during the 2017 conference. Please consult the Table of Contents for the location of the aforementioned papers, the list of awardees honored by WIN, and the name and subject indexes.

The conference was planned and organized by the WIN Program Committee, and we extend our gratitude to the Program Committee members: Anthony McGuire, Chair, ME; Judith Berg, AZ; Katreena Collette-Merrill, UT; Tina DeLapp, AK; Mary Ellen Dellefield, CA; Marie Driever, WA; Bronwyn Fields, CA; Bonnie Gance-Cleveland, CO; Lori Hendrickx, SD; Kathryn Lee, CA; Judy Liesveld, NM; Kristin Lutz, OR; Paula Meek, CO; Usha Menon, AZ; Annette Nasr, CA; Roberta Rehm, CA; Catherine Van Son, WA; and Donna Velasquez, AZ.

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Finally, we thank all of the nurse researchers who submitted papers and participated in the 2017 conference.

Charlene A. Winters, PhD, APRN, ACNS-BC  
President, Western Institute of Nursing

Anthony W. McGuire, PhD, CCRN-K, ACNP-BC, FAHA  
Chair, Program Committee, Western Institute of Nursing

**State of the Science Paper**

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**NURSING PRACTICE AND ADVANCING  
HEALTHCARE TRANSFORMATION**

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# NURSING PRACTICE AND ADVANCING HEALTHCARE TRANSFORMATION

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I am deeply honored to give the State of the Science Presentation on the Future of Practice for this anniversary conference. I have always been passionate about nursing practice and my clinical roles as a nurse. Since the 1970s there has been expanded growth in opportunities for nurses to advance professionally and remain clinically focused and for education and research to be more aligned and integrated with practice. These opportunities have included registered and advanced practice registered nurses, resulting in renewed recognition of the importance of the tripartite mission of academic nursing – education, research, and practice. (American Association of Colleges of Nursing & Manatt, 2016). My own lived experience as a professional registered nurse, clinical nurse specialist, nurse practitioner, educator, and clinical scholar has been extremely rewarding and has informed me in my current role as dean of a school of nursing that is part of an academic health center, with urban and rural campuses. As clearly demonstrated in the IOM report, *The Future of Nursing: Leading Change Advancing Health*, robust evidence links nursing practice to high quality care, patient safety, and patient outcomes and the nursing profession has the potential to “effect wide-reaching changes in the health care system.” (IOM, 2011, p. 2). The Future of Nursing report is one call to action and roadmap for nursing practice to advance healthcare transformation, in other words, to address problems and redesign care to improve outcomes, individual experience, and costs. While it is now more challenging to write this in anticipation of federal changes to what has been the course for health care transformation, nursing practice must remain essential to health and health care redesign in the U.S.

The Western Council on Higher Education for Nursing, which would become the Western Institute of Nursing, included service, later termed practice, along with research and education, as the organization’s areas of focus. Jo Eleanor Elliott, Director, WICHE Nursing Education Programs, referred to the “collaborative climate in the West” (p.29) among member schools of nursing and their clinical agencies, a climate that no doubt fostered the commitment to a tripartite mission when other regional organizations chose to focus on research. (Elliott, 1992).

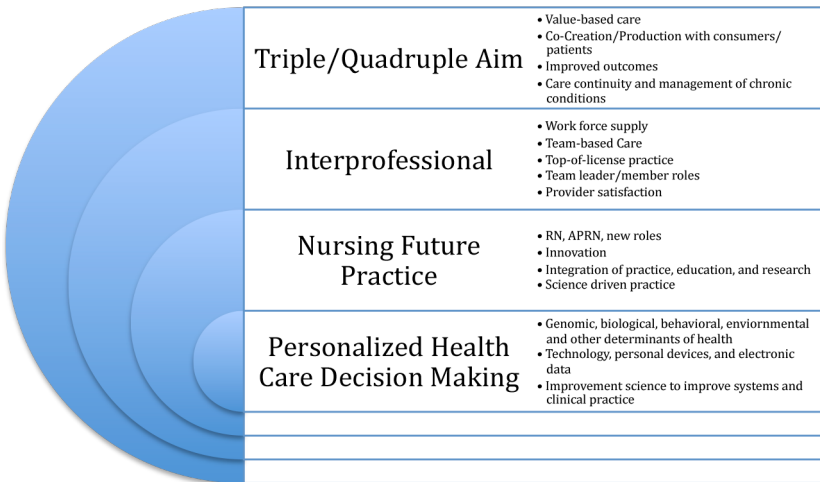
Although unusual, it is appropriate that WIN, as a regional nursing society, focuses on all three missions of nursing. Strengthening all three recognizes their interdependence and enhances the profession’s potential impact on improving health and healthcare outcomes. A review of WIN historical documents shows that our leaders in WIN have believed that as well. Dr. Carol Lindeman was a passionate advocate for nursing research to focus on the “realities of nursing practice” and to be “a force for improving patient care.” (Elliott, 1992, p. 91)

Nurses remain the largest segment of the healthcare professional workforce, with registered and advanced practice nurses providing care across the continuum. The future

of nursing practice must be considered within the context of continuing and potentially dramatic changes in health and healthcare. Such changes include interprofessional and team-based care and recognition of consumers/patients’ expectations to move beyond patient-centered care and to engage as co-producers in redesigning healthcare in order to improve access, quality, outcomes, and value. Other considerations include work force supply and the ongoing need to address inequities, for example in shortage areas such a rural regions and inner cities and for vulnerable populations including behavioral and mental health. Nursing practice will need to embrace and respond to increasing personalized clinical decision making made possible through implementation science, precision medicine and the ability to better use clinical data to inform practice (Chambers, Feero, & Khoury, 2016). (Figure 1). For this paper, the term nursing practice encompasses registered nurse (RN) and advanced practice registered nurse (APRN) scopes, as well as dependent and independent practice.

Figure 1. Factors Driving Innovation and Change in Nursing Practice

The future of nursing practice will have many influences, including triple aim goals, dramatic changes in health and healthcare, interprofessional practice models, and growing expectations of consumers/patients as partners and co-producers of healthcare redesign. Science and clinical data, technology, and improvement science will drive nursing practice at every point of the health care continuum.



## Background

Florence Nightingale established education and evidence as essentials to nursing care and to redesigning hospitals and hospital care. Her privileged background and education afforded her knowledge and access that, combined with her assertiveness and perseverance, enabled her to take her clinical observations in the Crimea, describe them thoroughly and through an original statistical data graphic display, and write prolifically to lead and effect change. She utilized keen clinical observation, documentation and analysis of evidence, public health principles, and emerging science

behind hygiene in her 1858 book entitled *Notes on Matters Affecting the Health, Efficiency and Hospital Administration of the British Army*. (Nightingale,1858). She actually created the Polar-Area Diagram to show how soldiers had died between July,1854 and December, 1855. Her depiction clearly showed that the majority of deaths were from disease and infection and her work and advocacy ushered in a new era of health care. Her call to action for formal education for nurses and the use of evidence to support practice and health care change remain seminal and relevant.

More than 150 years later, her legacy endures. As recently as 2014, a physician, Victoria Sweet, published an Op-Ed piece in the New York Times, entitled *Far More Than a Lady With a Lamp*. In it, Dr. Sweet describes her uninformed initial assumptions about Florence that grew to informed admiration. Florence Nightingale is indeed the mother of modern nursing, and perhaps only now are we beginning to own the impact that our practice can have. That, is legacy leadership!

### **The Context of Health and Healthcare**

U.S. healthcare has consistently been shown to be more costly when compared to other high-income countries, with poorer indicators of societal health, including shorter life expectancy and higher prevalence of chronic conditions. (Squires & Anderson, 2015). The U.S. stands out with greater spending on medical technology and higher health care prices, and less spending on social services that address social determinants of health. Passage of the Patient Protection and Affordable Care Act of 2010 (ACA) resulted in 20 million people gaining health insurance coverage, helped to slow the growth in health care costs, renewed focus on quality with reductions in hospital acquired infections and 30-day readmissions, introduced new value-based payment models, and emphasized innovation in population health and community-based and primary care. (Ezekial, 2016; Orzag, 2016). While this milestone legislation will likely be dismantled some of its undeniable major shifts launched transformative change in U.S. healthcare. One example is the embracing of quality improvement efforts that have taken hold and are leading to changes. (Bohmer, 2016). Organizations that are most successful in transforming are those that engage in continuous small-scale change efforts with engaged, diverse teams. Nursing has embraced improvement science and nurses are often involved in quality improvement, as team members and team leaders. (Needleman & Hassmiller, 2009).

Health futurist, author, and medical economist Dr. Jeffrey Bauer spoke at both the fall 2016 American Academy of Nursing (AAN) and American Association of Colleges of Nursing (AACN) meetings. At the AACN meeting, Dr. Bauer spoke on “Forecasting the Futures of Health Care Delivery: A New Era for Academic Nursing.” In his talk, Dr. Bauer stated that health care will change more in the current decade, with few years’ remaining, than it did in the past 50 years. (Bauer, 2016, AACN). His forecast for health care included that as percent of GDP, health care is not likely to grow, meaning that we will need to live within the current funding and find ways to eliminate waste in order to gain savings that can be reinvested. He also forecasted that health care organizations that thrive will do so by “fixing the way care is delivered.” (Bauer, 2016, AACN). Health care is changing, focusing away from acute care to chronic condition management, experiencing transformed financial models, work flow processes, and sites of care through information and communications technologies, and new relationships are underway between providers and patient populations due to funding changes and



the anticipated end of growth in health care spending. Achieving cost effectiveness will require individualizing care to match disease characteristics (precision health care) and epigenetics with patient-centered interprofessional care teams. New models of care are emphasizing teamwork, care continuity and coordination, and prevention, offering significant opportunities for nurses to lead and contribute.

### **Health Care Transformation and Nursing Practice**

Major areas of focus for health care transformation include quality improvement, health care redesign, innovation, and achievement of the Triple Aim – improving the individual patient care experience, including quality and satisfaction, achieving better health of populations, and lowering the per capita costs of health care for populations. (Berwick et al., 2008). A fourth aim, care of the provider, was recommended in 2014 to address support for health care professionals, leading to the term Quadruple Aim. (Bodenheimer & Sinsky, 2014). The ACA and the IOM Future of Nursing report emphasize the importance of team-based and primary care, care coordination, chronic illness management, innovation, use of technology, and reducing the need for expensive acute care. In addition, precision medicine/healthcare can be expected to drive interventions going forward. All are calls to action and have implications for nursing practice.

Multiple states of the thirteen represented by WIN are sources of exemplary contributions to RN and APRN nursing practice and health care advances. What became the nurse practitioner (NP) role was initiated in Colorado, led by the nurse-physician team of Loretta Ford and pediatrician Henry Silver. (Keeling, 2015). Ford and Silver sought to develop an expanded nursing role to meet the primary health care needs of children and families in rural areas. Anticipated primary care needs was a context for the Future of Nursing report, which emphasized scope of practice (IOM, 2011) and the need for all health care professionals to be able to practice to the full extent of their education, training, and competencies. A particular focus in the report was on advanced practice nursing, especially primary care NPs. At the time of the report, 15 states and the District of Columbia, had independent practice for NPs (IOM, 2011, p. 99). Ten of those states were in the Western US and included Alaska, Arizona, Colorado, Hawaii, Idaho, Montana, New Mexico, Oregon, Washington, and Wyoming. Since that time and through efforts resulting from the Future of Nursing Campaign for Action, Nevada now has independent practice authority and legislative efforts in 2017 are expected to reduce other barriers in Arizona, Hawaii, Nevada, and Utah (Future of Nursing Campaign for Action, 2016). The Western states clearly led the way for advanced practice nurses.

Practice models utilizing community-based registered nurse practice have also emerged from the Western US. Maternal-child health exemplars include the Nurse-Family Partnership model, developed by an interprofessional team at the University of Colorado (Olds, 2006) and the Nursing Child Assessment Satellite Training (NCAST) assessment and intervention programs, now the Parent-Child Interaction Program, developed by Dr. Kathryn Barnard at the University of Washington School of Nursing Family-Child Department. (Kelly & Barnard, 2000). These ground-breaking evidence-based programs have been utilized together to improve the outcomes of mothers and infants (Kitzman et al., 1997). Both models incorporated home visits by nurses to conduct assessments and intervene to prevent poor outcomes.

Western states were also pioneers in gerontology with two of the first five competitive John A. Hartford Foundation Centers of Geriatric Nursing Excellence at the University of California, San Francisco and Oregon Health & Science University Schools of Nursing in 2000. Arizona State University and the University of Utah also became Centers in 2007, establishing four of the nine centers in the Western US. These centers have supported various programming to create more nurse faculty and students with gerontological clinical competence in order to improve the quality of nursing care to older adults. (Harden & Watman, 2015).

The future outlook of nursing practice holds great potential for expanding the contributions of RNs and APRNs, improving care and outcomes, and holding down costs, provided that nurses are able and willing to lead wherever they are, contribute, innovate and change, and to demonstrate value in a rapidly transforming health care industry. Interprofessional, team-based care is expected to become the norm. Getting to and being present at the tables where decisions are made regarding new practice models is vital for nurses to be able to engage and lead in redesigning health care. In 2009 the Robert Wood Johnson Foundation sponsored a Gallup survey, entitled "Nursing Leadership from Bedside to Boardroom: Opinion Leaders' Perceptions." (RWJF, 2010). Over 1500 opinion leaders were surveyed. Similar to other Gallup polls documenting nurses as ethical and honest, the 2009 survey found that opinion leaders viewed nurses as one of the most trusted sources for health information. Despite responding that nurses should have influence on health policy and planning however, the opinion leaders reported nurses as being less influential on health care reform, compared to insurance and pharmaceutical leaders and physicians, among others. To be credible partners and leaders, nurses must be able to substantively contribute to innovative idea generation, design of potential new care practices and models, outcome measurement, and dissemination of results, thus demonstrating value.

Registered and advanced practice nurses, along with other professions, must also be able to practice at the top of their licenses in order to maximally contribute and optimize care. Russell-Babin and Wurmser (2016) define top-of-license practice as "matching the right provider with the right skill set to provide the right level of care at the right time and place, [not] substituting less expensive healthcare providers for the primary purpose of saving money." (pg. 25-26). Aligning appropriate level of care with health risk requires managing distinct patient populations, such as low-risk, rising-risk, and high-risk patients. (The Advisory Board Company, 2015). Maintaining the health of low-risk individuals and preventing deterioration of rising-risk patients by managing conditions well would take care of up to 95% of patients. Breaking through barriers to top-of-license practice may require national, state, and organizational level changes. Interprofessional, team-based practice is expected to improve care as it expands. Nurses must be prepared for and effective in care team leader and team member roles. Patients and families, community health workers, and others are also increasingly health care team members and should be engaged in co-producing new models of care. (Batalden et al., 2015). Patient engagement, with patients more actively involved in their own health and care and health promoting behaviors, is a strategy to improve health outcomes, improve care, and lower costs. (Health Policy Brief: Patient Engagement, 2013).

The majority of RNs historically have worked in hospitals, acute care focused. Renewed emphasis on primary care and care continuity is offering new opportunities

for contribution and value. Registered Nurse roles are being reimagined in primary care, bringing professional nursing knowledge and skills, care coordination and management, and standard care practices together to establish interprofessional teams and meet acute, chronic, and preventive care needs. (Bodenheimer & Bauer, 2016; Bodenheimer, Bauer, Syer & Olayiwola, 2015). Registered Nurses have knowledge, competencies, and skills that are of value in achieving care continuity for patient populations. For example, nurses have knowledge of health promotion, acute and chronic conditions, assessment of health risk, use of screening tools, and social determinants of health in assessing risk. Health care systems are moving from a focus on bridging care transitions to the notion of never discharging a patient (The Advisory Board, 2016) within a system network. Keeping patients in network through continuous, seamless care could offer significant opportunities for nursing practice to align level of care with level of patient risk. For example, nurses could provide care for a patient population in inpatient and outpatient/community settings, rather than being exclusively based in one site of care.

Advanced practice nurses bring primary and specialty care knowledge and skills to population based care in inpatient and outpatient/community settings. Studies on patient outcomes with nurse practitioner and physician providers have shown comparable outcomes. One randomized clinical trial (Mundinger et al., 2000) showed no significant differences in patient health status when NPs and physicians had comparable authority, responsibilities, productivity and administrative requirements. A recent systematic review on 69 studies from 1990-2008 (including 20 RCTs) on care provided by advanced practice nurses indicated that NPs and CNMs practicing in collaboration with physicians achieved patient outcomes similar to or better than physician only care. The analysis also showed that acute care CNSs can reduce hospital length of stay and cost of care. (Newhouse et al., 2011). Depending upon scope of practice regulations, APRNs can practice independently, in collaboration with physicians, or in collaboration with other health professionals, in a variety of clinical settings. Rural, inner city, and other underserved areas often depend heavily upon APRNs. Expected increased demand for APRNs in primary care and behavioral health across the lifespan, chronic illness management, and care continuity needs will drive practice. In addition, DNP-prepared APRNs bring knowledge and expertise of improvement science to practice environments and lead continuous improvement of care.

Self-care and supporting self-care have been part of nursing practice theory for at least two decades. (Orem, 1995) (Denyes, 2001). Educating individuals, patients, families, and communities about health and illness, managing chronic conditions, and self-care has also long been part of nursing practice. More recently the importance of health literacy (U.S. DHHS, Office of Disease Prevention & Health Promotion, 2017), talking with patients (Kaplan, 2016), and patient engagement (Health Policy Brief, 2013) have been re-emphasized in support of helping individuals make earlier and better decisions regarding their health and health care. RNs and APRNs have essential roles in helping individuals and families understand health information and services to enhance their care choices and decision-making abilities. Such engagement and shared decision-making have been shown to lead to better outcomes and less expensive care. (Health Policy Brief, 2013; James, 2013).

Technology is a major context and driver of change for health and healthcare and has major potential opportunities and implications for nursing practice. If you go to a public

website, like [verywell.com](http://www.verywell.com) (Rucker, 2016), you can get a basic overview of how health technology is addressing or has the potential to address health and healthcare issues. Health care professionals, including nurses, often think of technology as supporting the professional's role, such as through telehealth, however self care monitoring, replacing office visits and in some cases, hospital-based procedures, are helping to drive a larger movement of patient independence. Health monitoring through mobile and smart devices can track vital signs as well as chronic conditions. Wireless, wearable medical devices can track and monitor, communicate physiologic metrics, support caregivers and family members, and establish connections among a care network. Electronic health records started 30 years ago and are only now beginning to mature so that systems are improving patient safety and satisfaction. While many challenges remain in optimizing EHRs, from how hospitals and healthcare networks are organized, to negative attitudes, and lack of standard practices (Rucker, 2016), the expectation is that accessing and sharing patient data across health systems in real time will become the norm. This expected interoperability will facilitate continuous care that nursing practice and team-based care models should incorporate and lead in developing.

Precision medicine or individualized health care for human disease has grown out of the Human Genome Project and increased understanding of the science of genomics and other biologic “-omic” fields (proteomics, metabolomics, etc). Progress in scientific advancements led to the 2015 launch of the US Precision Medicine Initiative (PMI), a project intended to pull together genomic, biological, behavioral, environmental, and other data on individuals to identify determinants of health and disease that could support clinical and individual decision making. (Chambers, Feero, & Khoury, 2016). Synergy among implementation science and clinical data, precision medicine, and “the learning health care system” (Chambers et al., p.1942) holds potential for greatly improving health, health care, and health systems. Pharmacogenomics is one example with direct implications for nursing practice (Cheek, Bashore, & Bazeau, 2015). Advanced nursing practice has significant contributions to make to precision medicine in risk assessment, treatments, drug safety and self-management, for example. One challenge is to achieve knowledge of genetic and genomic competencies for all generations of providers to ensure sufficient knowledge to apply clinically meaningful findings from genomic science to individual patients. (Williams et al., 2016).

It is very challenging to consider the future of nursing and nursing practice, especially with so many unfolding variables in health and health care. All of this impacts our work force planning as well. How many RNs and APRNs will be needed? What other nursing roles might be effective? Will team-based care reduce or increase the need for nurses? Will the health care industry expand in terms of numbers in the workforce as it becomes more community based and what impact will self-care technologies have that might limit work force numbers? Will an expected severe workforce shortage materialize (Grant, 2017) and will the Western states have the largest shortage ratio? (Juraschek, Zhang, Ranganathan, & Lin, 2012).

### **New Era for Academic Nursing**

The AACN-Manatt report, *Advancing Healthcare Transformation: A New Era for Academic Nursing*, offers an excellent analysis and recommendations for enhanced partnership between academic nursing and health care. (AACN, 2016). The report presents a renewed vision for academic nursing with nursing as a full partner in

healthcare delivery, as well as education and research. Traditionally, school-of-nursing faculty and students have been guests in health care settings. Nurse faculty practice plans, despite success on various scales, have been limited by the separation of nursing practice and education. In addition, the lack of integration of practice and education has resulted in missed opportunities for collaboration across missions, disparate goals, and diminished use of expertise with schools producing a work force that practice expresses concerns about in terms of preparation. This long-standing separation has had many consequences for both sides. Aligning and integrating schools of nursing and departments of clinical nursing hold great potential for harnessing and utilizing expertise, advancing practice, education, and research to improve health care delivery and outcomes.

### **Charge for the Future**

Despite uncertainties due to changes in the federal government, health care transformation and achieving the triple/quadruple aim is likely to continue to drive opportunities for registered and advanced practice nurse contributions and expectations for impact across the care continuum. The IOM Future of Nursing report is replete with documented evidence on the impact of nursing practice. Nurse practice leaders and education leaders must commit to full collaboration for future practice. Nurses must see, seek and seize opportunities to lead in addressing known gaps, high costs, and relatively poor health outcomes in what has been an acute-care focused system, harnessing science, clinical data, technology, and consumers in designing and evaluating innovative and effective models of care. Nurses must achieve recognition as effective team leaders for team-based care and improvement science and nursing knowledge, skills, and competencies should be expected to contribute to new models of care. Getting to decision-making tables will continue to require assertiveness. Once there, demonstrated contributions and effectiveness must be the tactics to achieving full partnership.

Nursing practice, substantiated by science and clinical evidence, needs to be integrated tightly with schools of nursing, and top-of-license care must be the norm for all health care professionals. Eliminating local organization practice restrictions will require nurses to be well informed of their statutory practice scope. Nurse faculty practice should be a standard for the future, for RN and APRN faculty educating future clinicians. This will necessitate changes in academe and practice so that the education mission is fully supported, the gap between nursing education and practice is finally closed, and clinical and faculty roles are sustainable. Only then will nursing practice be able to fully realize and demonstrate impact on health and health care.

It is a time for leadership and bold action with a focus on results. Nursing needs to gain full recognition as essential to achieving health care optimization and the improved health of society. WIN as an organization can engage its members to set priorities, collaborate across practice, education, and research networks, and demonstrate collective impact, setting an example for the nation, again.

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**State of the Science Paper**

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**THE FUTURE OF NURSING RESEARCH IN  
THE WEST: THE BEST IS YET TO COME**

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# THE FUTURE OF NURSING RESEARCH IN THE WEST: THE BEST IS YET TO COME

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In 2017, contemplating a future for nursing research is daunting, in part because of the uncertainty and unknowns for financing health care and for models for care (Obama, 2017), as well as for financing for higher education and research. A discussion of the future is further challenging because the varied topics for investigation by the current generation of nursing researchers have a wide span, from bench to bedside, and to community, some with combined and intersecting approaches and methods. Despite these challenges, the purpose of this paper is to consider future directions for nursing research while we celebrate the sixtieth anniversary of the Western Institute of Nursing (WIN) and the fiftieth anniversary of the WIN conference *Communicating Nursing Research*. These celebrations provide an opportunity to envision a future in which the best of nursing science positively influences the health of the public and leads to the best of nursing practice. They further provide an opportunity to offer suggestions for how WIN can support these scientific endeavors. One way to begin this discussion is to provide a regional perspective of health. In the twenty-first century, many research questions may be influenced by the diverse and changing characteristics of the populations in the thirteen member states (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming). States from the West in WIN share more than geographical boundaries; they also share a relatively recent history in nursing not bound by tradition.

To imagine a future for nursing research from the perspective of the West, it is helpful to first examine the current health status among the peoples in the states comprising WIN as this may suggest areas of inquiry. Knowledge about the population characteristics and the social determinants of health influence our understanding of health risks, health conditions, and needs for nursing care. This information can help identify gaps and priority areas for nursing research needed to augment population health, to reduce risk of disease and disability, to address suffering, promote recovery, and to improve quality of life across the life span in the West, the nation and beyond. It also may suggest areas for basic science approaches needed to advance knowledge.

Priorities for nursing research as identified by the National Institute of Nursing Research (NINR) are relevant to this discussion, along with the recognition of opportunities for nurse researchers to take advantage of the exploding technological advances in science that will transform health care and influence nursing interventions. Ultimately, the vision of the future must include how research will impact nursing care, including the implementation of evidence into practice and the use of data to inform practice and health care policy. How best to share research findings, how research is funded, and what type of preparation will be needed for the next generation of scholars are all important questions for the future. Following the consideration of these gaps and opportunities, recommendations are made as to how WIN can help shape the

direction of nursing research by supporting areas of inquiry and through programs and structures for nurse scientist and doctoral students.

### **An Historical Perspective on Nursing Research in the West**

Much has changed since the mid-twentieth century when the WIN collaboration of educators, institutions of higher education, public agencies and foundations sought to address pressing societal needs for health and health care. At the core, nursing leadership in WIN recognized that "...the greatest single obstacle in nursing is the lack of nurses with preparation to do research" (Coulter & Western Interstate Commission for Higher Education, 1963). Decades later, Donaldson and Crowley's paper presented at the *Communicating Nursing Research Conference* in 1977 on the discipline of nursing challenged nurse scholars about the importance of the intersection of research and clinical practice, a topic that still is relevant today (Western Institute of Nursing, 2007). Quint Benoliel's landmark presentation about qualitative research at WIN in 1984 influenced a generation of nurse researchers. How will nursing research today provide a springboard for the next generation?

I am especially pleased to present this paper as the Lulu Wolf Hassenplug Endowed Chair in Nursing. Lulu Wolf Hassenplug was the founding dean of the School of Nursing, University of California, Los Angeles. She was one of the members of the advisory committee of the Western Interstate Commission for Higher Education (WICHE), along with deans from the University of Oregon School of Nursing and the University of Colorado School of Nursing, the Deputy Director of the National League for Nursing, the Director of Nursing for the W.K. Kellogg Foundation, and the Chief Nurse Officer of the Public Health Service (Western Institute of Nursing, 1992). As a member of the "Committee of Seven" appointed by the executive director of WICHE, Hassenplug helped to create an action plan for nursing in the West, with goals including to "stimulate research in nursing within the colleges and universities of the western region" and to educate nurses who could conduct "research to improve the actual practice of nursing or the quality of care that patients receive" as part of the Western Council on Higher Education for Nursing (Coulter & WICHE, 1963).

The West has produced scholars who have significantly influenced nursing research over the past sixty years; a brief mention of such individuals is warranted. The history of the development of the National Institute of Nursing Research (NINR) includes nurses from the West (e.g. Fugate Woods) who were involved in the creation of the NINR, and who were members of the Charter Study Section of NINR (Cowan, Chang) (National Institute of Nursing Research with Cantelon, 2010). Others have received recognition by the Friends of NINR for their achievements through Pathfinder awards that acknowledge nurse researchers whose work has advanced our knowledge of health and health care through sustained grants supported by NINR (Phillips, Mitchell, Heitkemper, Landis, Moore, Koniak-Griffin), and through Protégé awards for promising new scientists (Thompson, Lee). Since 1989, WIN also has identified significant accomplishments of members with its Distinguished Nursing Research Lectureship Award and other awards (such as the Mentorship award for faculty who have demonstrated excellence in preparing the next generation of nurse scientists) (Western Institute of Nursing, 2017). The National Academy of Medicine (formerly the Institute of Medicine, IOM) includes distinguished nurse scientists from the West (e.g., Burnes-Bolton, Dracup, Heitkemper). Many others have received awards from

professional nursing and specialty organizations. A comprehensive listing of these is beyond the scope of this paper. It must be noted that the landmark report, *Future of Nursing: Leading Change, Advancing Health* (Institute of Medicine, 2010), included leadership from the West in the Vice Chair, Linda Burnes Bolton. Future leaders in nursing research from the West can build on the achievements of the past.

## **Regional Health Issues and Future Nursing Research**

In order to speculate about the future of nursing research, it is important to think about the present. The profession of nursing is influenced by the national and increasingly global landscape of politics, legislation, policies and regulations. Future priorities for nursing research, especially in the West, will be influenced as well by the characteristics of the populations in our states. Demographic characteristics of populations in the states, population size, density (as an indication of rural or urban areas), and social determinants of health (high school graduation, violent crime, children in poverty and poverty) are displayed in Table 1. The United Health Foundation (United Health Foundation, 2016b) has created health rankings and rankings of influencing factors for every state. Table 2 displays overall rankings of health for all adults, for seniors, and for woman and children along with rankings for infant mortality, premature death, deaths caused by drugs and opioid deaths for the thirteen states. These rankings allow us to compare the states in the West with the other states in the United States (U.S). Rankings for health risk behaviors (smoking, physical inactivity, excessive drinking), obesity and immunization are displayed in Table 3. State rankings for health conditions/deaths include cancer, cardiovascular disease, diabetes, chronic obstructive pulmonary disease (COPD), mental illness and adults living with human immunodeficiency virus (HIV). This is not an exhaustive list of health risks or health conditions, but it provides a lens for considering future priority areas for nursing research and health care policy, and benchmarks for future comparisons. Rankings where states in the West fare worse when the majority of states in the U.S. are emphasized.

**Population Size and Density.** The population in the U.S. has skyrocketed in the past half century. Over 23% of the population of the US resides in the West (United States Census Bureau, 2016a). Over 51% of the population in the West is in California, which has almost quadrupled its population since the mid-fifties (Hobbs & Stoops, 2002; United States Census Bureau, 2016b). The population in Los Angeles alone is higher than the populations of 32 states (Los Angeles Almanac®, 2016). Other states (Nevada along with Arizona, Utah and Colorado) also have exhibited rapid growth creating new opportunities and challenges for health and health care. Among our consortium, we have states with high population density (California, Hawaii) and rural states with low density (Alaska, Wyoming and Montana) (United States Census Bureau, 2016b). Five major causes of death (cancer, cardiovascular disease, chronic lower respiratory disease, unintentional injury and stroke) are higher in rural areas (Moy, et al., 2017). The West is also home to many Veterans (U.S. Department of Veterans Affairs, 2016). The Veterans Administration is the largest healthcare integrated system in the U.S. and serves almost nine million veterans, and it is an important site for nursing research. These and other factors will influence the challenges and opportunities for research that will influence health care policy.

**Ageing.** While the percentage of children in the U.S. has remained relatively stable, the accelerated increase in older Americans is well known, with an estimated 46.2 million

adults (14.5% of the population) aged 65 and older alive in 2014 (U.S. Department of Health and Human Services, 2015). By 2050, the older population is expected to double in the US and triple worldwide (National Institute on Aging, 2011; Vincent & Velkof, 2010). From 1980 to 2014, centenarians more than doubled. Aging is an especially important issue for the West which has states with the highest percentage of older adults. Montana, Arizona and New Mexico have higher percentages, but California has the largest actual number of seniors, almost 6 million (World Atlas, 2016). Three of the states, Hawaii, Arizona, and Colorado, reported the highest well-being among adults aged 55 years and older (Witters, 2016). The critical importance of considering aging is addressing the increased risk older adults face for chronic conditions. Increased risk for health concerns are also relevant for older caregivers. Since 2001, WIN recognized the importance of nursing among the aged with a “Regional Geriatric Nursing Research Award”, in partnership with the John A. Hartford Institute for Geriatric Nursing (Western Institute of Nursing, 2015).

**Diversity.** Despite the dramatic improvements in access to and quality of health care in the past sixty years, not all have benefited equally from these advances. Progress has varied by gender and by racial, ethnic and socioeconomic groups (Agency for Healthcare Research and Quality, 2016; IOM, 2003). Diversity of the population in the West has dramatically increased. In several states, non-whites are the majority (Table 1). In the U.S., one in five of the population is Hispanic (53 million) with projections for increases by 2045 to one in four (2016a). Hispanics/Latinos make up a greater share of the population in the West, with several states more than 25% Hispanic/Latino. Compared to Whites, they are more likely to report fair or poor health (12% vs 9%) and be at increased risk for other health conditions (Centers for Disease Control and Prevention, 2016a). More than 25% of the population in California is composed of citizens born in other countries, not including the undocumented population which is estimated to be higher in the West (Migration Policy Institute, 2014). All of the states in the West except for Montana are below the median for high school graduation rates. Not revealed in this table is gender diversity. Some states a higher percentage male and others a higher percentage female. Data about lesbian, gay, bisexual and transgendered (LGBT) persons are only recently being collected. LGBT persons are at higher risk for health issues across the health span, including HIV, sexual violence, depression, suicide and substance abuse (Healthy People, 2016). Religious beliefs can influence health beliefs; beliefs among the population also are changing (Pew Research Center, 2015a). Christianity has declined, but is still the most dominant group of religions, ranging from 61% in Washington to 75% in New Mexico; and non-Christian faiths are highest in Hawaii (10%) (Pew Research Center, 2015b). To create a future where nursing research provides a foundation for reducing health disparities by addressing barriers in vulnerable and underserved populations, adequate representation of these diverse populations is needed among study participants.

### **Social Determinants of Health in the West**

The conditions in which people are born, grow, live, work, and age, comprising the social determinants of health, are recognized as critical factors that influence health (U.S. Department of Health and Human Services, 2017). There is substantial evidence that social determinants of health contribute to health disparities and are barriers to wellness (Institute of Medicine, 2003; Marmot, 2015). A national focus on creating a “culture of health” (The Robert Wood Johnson Foundation, 2016) is relatively recent and one that would benefit from nurse researchers’ efforts to evaluate models

of care that address social injustice. In Table 1, selected conditions that are markers for health risk are ranked, including the percentage of adults who have achieved high school education, the prevalence of those who have experienced violent crime and those who live in poverty, especially children. These conditions vary across our states. Compared with the majority of states in the U.S., some states have the lowest levels of education, some the highest levels of violent crime, and some the greatest percentage of children living in poverty in the U.S.. Not included in this table are data about homelessness, a significant problem for some states. In California alone, almost 119,000 people experienced homelessness on one night in 2016 (US Interagency Council on Homelessness, 2016). Nursing health policy research which influences these risks linked to health and to nursing care is urgently needed.

## **Gaps in Health Issues Facing the West**

### **Health Risk Behaviors**

Although the term “lifestyle behaviors” is used by researchers, this term does not adequately capture the complexities of risk behaviors, especially for substance abuse and addiction. Such characterizations unfairly stigmatize the individual as having made a “choice”, and limits approaches to intervention. In large part, these behaviors may be significantly influenced by upstream environmental, economic and social factors and necessitate other approaches. Rankings of health risk behaviors vary by states (Table 2). Four of these behaviors (i.e. tobacco use, physical inactivity, unhealthy eating, and alcohol misuse) have been found to increase risk of non-communicable diseases (cardiovascular disease, cancer, respiratory diseases, diabetes) which are expected to accelerate in the twenty-first century (World Health Organization, Sarna, & Bialous, 2013). These risk behaviors are modifiable and nursing interventions can reduce risk. Information about health risks is important as nurse researchers identify and address the gaps. Smoking, the leading cause of preventable death, has declined in the U.S. and six states in the West are among states with the lowest smoking prevalence (Utah, California, Idaho, Arizona, Hawaii, Washington). Obesity continues to increase with 29.8% of the US population in that category (United Health Foundation, 2016b). In general, states in the West have low ranks of physical inactivity compared to the majority of states in the U.S.. Almost 18% of the general population engages in excessive drinking (United Health Foundation, 2016b). Three states in the West are among the ten states in the U.S. with the highest ranking of excessive drinking (Alaska, Montana, Hawaii). Several states in the West have the lowest vaccination rates in the country among infants and children 19-35 months in the U.S.. The many rural states and areas in the West also are important to consider, as higher rates for smoking, obesity and physical inactivity have been noted in these nonmetropolitan areas (Moy et al., 2017). Not included in this description are the state variations in environmental challenges and changes in the region that influence air quality, and food safety and risk for injury. New Mexico has the highest rate of mortality from unintentional injuries in the U.S. (CDC, 20017).

### **Current and Changing Health Issues in the West**

Based on the analysis of demographic and health issues, there are public health challenges and opportunities for future nurse researchers in the West. These may vary by state. Focusing on the overall health rankings, four of our states (Hawaii, Washington, Utah and Colorado) are ranked in the top ten healthiest states in the nation (Table 3). However, individual states have higher rankings in cancer, cardiovascular

disease, diabetes and chronic obstructive pulmonary disease (COPD) than the majority of states in the U.S. (Table 2). Eight states have rates of mental illness higher than most states in the U.S. (Utah, Oregon, Washington, Idaho, Wyoming, New Mexico, Alaska and Arizona). Seven states in the West have higher rates of drug deaths, and five higher rates of deaths due to opioid overdose than the majority of U.S. states (Utah, New Mexico) (Table 3). The suicide rate, not included in the table, is highest for men and women in Montana (CDC, 2017).

Acute and chronic infectious diseases that emerged in the later part of the twentieth century, including human immunodeficiency virus (HIV) (Farmer, 2013), demanded urgent nursing action. HIV continues to be a serious issue for several states in the West. Important work in the West by nurse researchers has addressed a variety of infectious diseases, including tuberculosis (Nyamathi et al., 2008), HIV (Koniak-Griffin, Lesser, Takayanagi, & Cumberland, 2011), and human papilloma viruses (Monk & Wiley, 2006). New infectious diseases and older antibiotic-resistant infections will emerge in the twenty-first century and will benefit from the attention of nurse researchers. Based on low rates of immunization of the majority of states in the West (Table 2), research considering regional barriers to immunization is needed.

### **Future Opportunities for Nursing Research**

In 1993, almost forty years after the launch of the nursing research efforts in WIN, the National Center for Nursing Research became an Institute of the National Institutes of Health (National Institute of Nursing Research with Cantelon, 2010). In the early years, reflecting societal need, HIV/AIDS and low-birthweight infants were top nursing research priorities. NINR continues to support basic and clinical research that integrates the behavioral and biological sciences to support nursing practice. In 2016, after extensive deliberation about strategic directions, NINR identified four themes for priority funding (National Institute of Nursing Research, 2016). These four areas have been identified as core areas in many schools of nursing in the states comprising WIN. Examples of a few schools in the West that are addressing the NINR priorities by content area include 1) symptom science: promoting personalized health strategies (University of California, San Francisco, University of Colorado), 2) wellness: promoting health and preventing disease (University of Arizona, University of Washington, University of New Mexico), 3) self-management: improving quality of life for individuals with chronic illness (University of Oregon Health Sciences) and 4) end-of-life and palliative care: the science of compassion (University of Washington, University of Utah). As recommended by NINR, promoting innovation and technology to improve health is a common theme as is addressing the needs of vulnerable underserved populations (University of California, Los Angeles). These are a few examples of schools of nursing doing work in this area.

### **Nursing Research Priorities for the Region**

Porter-O'Grady (Porter-O'Grady, 2001) challenged twenty-first century nurse researchers: "what difference does the research make and what is the value added for research activities undertaken". NINR's strategic priorities can be examined within the context of the societal and health care needs of the West. Where should WIN put efforts to support nursing research in the future? Based on the review of the state health characteristics among states in WIN, the issues of mental illness, drug-related deaths and excessive drinking, among other health risks and health conditions, are areas where

nursing research could make an important contribution. These issues are not unique to the West, but should be a call to action for nurse researchers. Depression is the third most common disease burden worldwide and affects over a quarter of the U.S. population (Centers for Disease Control and Prevention, 2016c) and has been a focus for many nurse researchers in the West (e.g., Doering et al., 2016). Mental health issues, in particular, are related to and influence comorbid conditions, including substance abuse (Thorpe, Jain, & Joski, 2017). Having mental health as a priority nursing research agenda for WIN would benefit the peoples of the West, the nation, and the world.

Mental health issues and suffering from substance abuse are not new, but the potential for their impact on study outcomes may not have not been adequately considered. For example, tobacco, the leading cause of preventable death, is a legal substance that kills fifty percent of smokers (US Department of Health & Human Services, 2014). However, for decades smoking status, a powerful predictor for health risk, comorbid disease and cancer treatment complications was not included as a standard data element in a number of studies, including cancer clinical trials of non-tobacco related cancers (Gritz, Dresler, & Sarna, 2005). Only recently is there an organized effort to include relevant questions as part of cancer clinical trial patient-entry and follow-up (Land et al., 2016).

Given the prominence of health risk behaviors and social determinants of health in the review of the region, are we missing opportunities to collect data about variables that could influence the outcomes of research? Should indicators of alcohol use, substance abuse (including use of opioids), as well as overweight and obesity be included in sample descriptions in nursing research studies? How will data about the use of marijuana, now legal in several states, be included in nursing research studies?

### **Harnessing Technology to Advance Science**

Not unique to the region is the revolution in new technologies available for research. Nursing research is already influenced by the acceleration in genomic and information technology that will provide unprecedented opportunities for new insights into the human condition, insights that were difficult to imagine in the mid-twentieth century. At the inception of WIN, Watson and Crick (Watson & Crick, 1953) had just identified the double helix structure of DNA; now we have mapped human DNA and are ready to use this knowledge to promote health, reduce risk of disease, and in some cases, treat diseases. For example, expanded nursing research in areas such as neuroscience will have an enormous impact on population health and human suffering, far beyond the brain. Opportunities now exist to view the building blocks of heredity from DNA to stem cell. We have a new understanding of the body from biology to omics, an improved ability to view the interior of the body from x-ray to MRI, different ways of developing drugs from plant-based to genetic synthesis, and new ways of understanding mental illness from Freud to neuroscience. These and other innovations and advances are influencing the opportunities for nurse scientists. In each of these areas, many nurse scientists are contributing new knowledge (e.g., Jarrett et al., 2016; Kumar et al., 2015; Sokolow et al., 2015).

Attempts to customize strategies to prevent disease and tailor health care treatment considering individual variability in genetics, lifestyle and behavior are being coordinated through efforts in the National Institutes of Health *All of Us* Research Program (formerly the Precision Medicine Initiative) (National Institutes of Health,



2016). This large-scale research enterprise will include innovative technologies which attempt to fit the correct treatment to each person. Participants are being enrolled using mobile devices such as smartphones.

Advances in genomics, pharmacogenomics, nutrigenomics, metabolomics, microbiomics, and data science will influence nursing research now and in the future. Research funded by NINR in this area will have a focus on symptom science (National Institute of Nursing Research, 2015). Simplistic paradigms of recognizing and treating single symptoms are being challenged. One example is the exploration of individual variability and underlying mechanisms in individual symptoms and symptom clusters (Miaskowski et al., 2017). Basic and clinical research on the biological, genetic, and behavioral mechanisms underlying symptoms of chronic conditions will be an important focus for the future. For example, the relationship of the gut microbiome is receiving attention for its influence on a range of symptoms and disease processes, including the possibility for targeted individual interventions (Newland, Heitkemper, & Zhou, 2016). These are just a few examples of nursing research activity in the West.

Innovation and technology are part of the West. The West was the birthplace of the first Apple computer, released in 1976. Nineteen of the 20 top-paying technology companies, including Facebook, Adobe, Microsoft, LinkedIn, Twitter, Amazon, and Google, among others, are located in the West (Novinson, 2016). This proximity could provide researchers in the region with potential advantages and opportunities to explore future collaborations with industry to conduct research as well as to disseminate findings. Researchers can take advantage of the expanded opportunities through the use of sensors, biometric devices, video, and other technologies in telehealth to remotely interface and monitor patients. Statistical modeling of these large time series data sets requires new techniques and strategies.

### **Translating Findings into Practice**

The translation of findings from the laboratory to the bedside and to the community will continue to pose challenges. There are opportunities for collaboration across disciplines and professions that can accelerate this translation. Beyond traditional medicine, biological sciences and public health, nursing scientists are and can pursue questions and partnerships involving scholars in other fields such as public policy, engineering, economics, education, business, humanities, the arts, and law, among other fields.

An important area for future nursing research is the science behind the translation of scientific evidence into nursing practice. There have been many examples where there has been a substantial lag in the adoption of evidence-based effective methods to improve health and reduce suffering. The slow dissemination of tobacco dependence treatment into health care is one example that affected morbidity and mortality (Sarna & Bialous, 2016; US Department of Health & Human Services, 2014). Implementation science has emerged as a focused area of study to promote the integration of research findings and evidence into health care policy and practice. These studies include the study of nurses and their uptake and adoption of evidence-based practices in nursing care and how those changes are sustained over time. An evaluation of the various barriers for dissemination (e.g. social, behavioral, administration, economic) that impede effective implementation and the testing of interventions to improve practice is a rich area for nursing research.

### **Using Research to Support the Influence of Nursing Care**

Knowledge of the regional issues and findings from the exploration and advancement in to the basic sciences can be used to influence nursing care. However, nursing research specifically focused on nursing practice is essential to the nation's health, to the profession, and to the West now and in the future (Shalala, Bolton, & Benner, 2010). This necessitates close collaboration of nurse researchers and nurse clinicians across health care settings during the entire continuum of care. After cancer and cardiovascular disease, medical errors have been identified as the third leading cause of death in the U.S. (Makary & Daniel, 2016). Nursing research is needed to examine models of care that focus on the workplace environment and a culture of safety. Numerous studies in hospital settings have shown that the environment where nursing care is delivered matters. Patients who receive care in Magnet hospitals have better outcomes (Stimpfel, Sloane, McHugh, & Aiken, 2016). Favorable working environments for nurses have been associated with reduced mortality (McHugh et al., 2016; Silber et al., 2016), fewer infections (Kelly, Kutney-Lee, Lake, & Aiken, 2013), and reduced hospital readmissions (Lasater & McHugh, 2016; Ma, McHugh, & Aiken, 2015). A celebrated public health nursing model of care involving nurses from the West, now known as the "Nurse-Family Partnership" program, promoted home visits by nurses which resulted in positive pregnancy outcomes (Olds et al., 2010). This model has been replicated in many states. Another example of a model program with nurse-sensitive outcomes is Nursing Child Assessment Satellite Training (NCAST), currently known as the Parent-Child Interaction (PCI) program, developed at the University of Washington (Kelly & Barnard, 2000). This educational program provides nurses with a series of tools for assessing child-parent interactions across settings.

Further studies are needed, especially in the West, to test new models of care, especially in ambulatory care, linking nursing care and patient outcomes and evaluating the generalizability of other models to the diverse populations. Martsolf and colleagues (Martsolf et al., 2016) describe nurse-designed models of care recognized as "Edge Runners" by the American Academy of Nursing, as evidence-based exemplars of nursing practice. In addition to the recognition of the Nurse-Family Partnership in Colorado (American Academy of Nursing, 2015b), a Utah "Edge Runner" program, Mental Health Integration at Intermountain Healthcare, was recognized for its family-centered care model for primary care providers in mental health clinics (American Academy of Nursing, 2015a).

One of the key recommendations of the five-year evaluation of the *Future of Nursing* progress report suggests building an infrastructure for the collection and analysis of interprofessional health care workforce data (National Academies of Sciences Engineering and Medicine, 2016). Such data could be used by nurse researchers in modeling needs for nurses in the health care system that can inform practice. This is especially important in considering the nursing workforce strategies to provide care for patients in rural or nonmetropolitan settings, where the risk of death from leading causes of disease is higher than in metropolitan areas (Moy, et al., 2017).

Finally, the physical and mental health of nurses delivering care should still be an area of interest for nurse researchers. Data from the Nurses' Health Study, the longest running study of women's health, has been used to monitor nurses' health such as smoking status (Sarna, Bialous, Cooley, Jun, & Feskanich, 2008). Health issues, including health promotion behaviors, that affect nurses across and within our states

are an important focus for future research. The American Nurses' Association initiative "Healthy Nurse" (American Nurses Association, 2016), nurses' health is gaining renewed attention as a nurses' health affect patient care. Regional differences could be examined.

### **Using Data to Inform Nursing Care and Policy**

Since Florence Nightingale, obtaining evidence about nursing, practice environments and patient outcomes has been critical to health care policy (McDonald, 2001). With an ever-increasing large volume of information or "big data", new opportunities have emerged for nurse researchers. There are questions as to what these elements should be and how they should be collected. It may be possible to have "big data" about the outcomes of nursing care by state or region. Electronic health record (EHR) systems have the potential to acquire extensive information about patient demographics, health conditions, and medical treatment that could make this possible. These data can provide information that could influence the quality and safety of nursing care across the continuum in new ways. Access to these data provides new opportunities for researchers, and the potential for understanding of nurses' work flow. Some nurse scientists in the West have been involved in identifying key elements describing health and health care that are collected as part of the EHR, but greater coordination is needed (Bowles, Dykes & Demiris, 2015). A variety of elements, including social determinants of health along with health risk factors, has been recommended by the National Academies of Medicine for inclusion in the EHR (Institute of Medicine, 2014). More research is needed to explore the use of EHR and patient-centered use of technology on the quality of nursing care and patient outcomes in settings beyond the hospital. The social, legal, and ethical questions surrounding access to private information that may be included in "big data" sets, including genetic information, are complex and have implications for practice and policy.

### **Sharing Research Findings**

Consideration of a future vision of nursing science must include how we communicate research findings and how we learn about new discoveries. Who will be our audience: nurses, researchers in other disciplines, health professional colleagues, policy makers, and/or the public? Peer-reviewed journals and presentations at scientific conferences have been the standard forum for sharing new information and scientific discoveries. How will this change in the future? How will the results be shared in the new environment of social media? How will nurse researchers facilitate translation of evidence into practice? Will policy makers have the evidence that they need from nurse researchers? These questions deserve attention because they will impact consumers and health care.

Technology is rapidly changing ways of communicating, including nursing research findings. We learn about new findings through online journals, through tweets, podcasts, webinars, and other social media, transforming the way that we communicated research findings. NINR has used the Directors' Lecture as an effective strategy; to highlight the work of outstanding scientists where presentations are available on the website and easily accessible. Recently, this has included papers from several nurse researchers from the West (Woo, Drew and Heilemann). Other platforms that allow researchers to present information directly to the public are YouTube and TED Talks. These advances in communication are especially important as we share our findings throughout the world. For example, the interventions to help nurses increase the delivery of evidence-

based smoking cessation interventions using web-based technology are available on the Tobacco Free Nurses website in seven languages.

Early *Communicating Nursing Research* conferences in the 1950's, the first of their kind in the U.S., focused on the importance of preparing nurse scientists. Topics of these conferences included different conceptual approaches as well as the mechanics of conducting and critiquing research (Western Institute of Nursing, 1992). These conferences were among the first forums in the nation and for nurturing emerging nurse scientists, especially doctoral students.

### **Expanding Opportunities for Funding**

Funding can drive the direction of research questions. Extramural funding for research from NINR and other agencies in the NIH is sought after and prestigious. Three schools of nursing in the West were ranked in the top ten for NIH funding in 2016. However, NINR's budget cannot sustain all of the worthy research that will grow our science, and researchers may have topics that do not fit with the NINR priorities. There are other opportunities through other Institutes in NIH and through foundations such as The Robert Wood Johnson Foundation, the American Nurses Foundation (ANF); the Office of Nursing Services, Department of Veterans Affairs; the American Heart Association; Sigma Theta Tau International (STTI); and the Oncology Nursing Society Foundation, among others. Partnerships with industries could provide other opportunities. but such collaborations have potential risks. Many nurse researchers will need to diversify their portfolios of funding. WIN has established small research grants for members in collaboration with STTI and ANF. Should WIN make it a priority to expand this funding for nursing research interests focused the health issues facing the West? Will future nurse researchers market their ideas to the public and use avenues such as "GoFundMe" (GoFundMe.com, 2016)?

### **Preparation for Future Nurse Scientists**

The future of nursing research will depend on the recruitment and training of the next generation of scholars. The scope of this education and the type of mentorship has been an area of much discussion. Some of the areas identified for doctoral education focus on the inclusion of new knowledge about the human genome, omics and the microbiome; others include advances in biobehavioral science and the translational science (Conley et al., 2015; Grady, 2015; Henly, McCarthy, Wyman, Alt-White, et al., 2015; Henly, McCarthy, Wyman, Heitkemper, et al., 2015; Henly, McCarthy, Wyman, Stone, et al., 2015). In response to the needs for sophisticated genomic training, NINR holds special training in this area. In order to provide further critical evidence of the importance of nursing and nursing care for health care policy as well as for a foundation of practice, future research is needed that interfaces nursing with patient outcomes, including considerations of quality, safety and economic impact. Knowledge is needed for scaling-up nursing interventions. This will require advanced training for scholars in population health science, health services research and implementation science which are not currently available in many schools.

An awareness of the health issues and of health care challenges in regional populations also is important content. WIN could support inclusion of such data for scholars in the West by monitoring and disseminating health rankings and having these data easily available on their website. With advances in technology, WIN has provided many resources for students and for beginning nurse scientists. Efforts to promote

collaborative cross-disciplinary research also are needed. The next generation of nurse scientists could benefit from opportunities for cross-professional post-doctoral training. WIN might consider ways that it could maximize interprofessional post-doctoral opportunities across the West.

### **How WIN Can Help Shape the Future for Nursing Research**

This paper has included an overview of an array of factors influencing health and nursing care in the West as well as an overview of the expansive opportunities available for nurse researchers from basic to translational research. Future nursing research has the potential to influence our understanding of health and nursing care in the region, in the nation and worldwide. WIN can help facilitate collaborations among researchers in the West with similar interests. This work can continue through the expansion of virtual networks and searchable databases of scholars with similar interests. WIN also could aid in facilitating recruitment of samples from diverse populations.

Some serious societal issues impacting population health, including low levels of education, poverty and violence were identified in several states. These social determinants of health and the characteristics of the populations influence nursing interventions to promote health, to reduce risks for disease, and to eliminate health disparities. Despite the good news for many states, the rates of excessive drinking, mental illness, and drug-related deaths in the region should challenge nurse scientists in the West in the same way that the HIV/AIDS epidemic did at the beginning of NINR. How can nursing researchers better address the suffering and reduce premature deaths caused by substance abuse and mental illness? Perhaps, WIN could be a champion for new targeted funding models for nursing research based on regional needs.

Based on the health issues facing our region, new scholars in the West should be given an opportunity to learn about these issues and the social, environmental, economical factors influencing risk behaviors. There is support from NINR to grow scholarship in genomics and big data analysis, however different training is needed to explore delivery of care, population health, reduce health care disparities and translate evidence into practice. Expanded content in health services research, implementation science and telehealth in doctoral programs could help influence the ability of scholars to ask questions about nursing care on patient outcomes across the continuum of care. These studies are needed to inform nursing practice models of care and health care policy.

With a strategic vision, WIN can continue to shape the future of nursing research and positively influence the health of the vast population in the West, the nation's health and the nursing profession. Given the issues, the future will depend to a large degree on the areas of science that are pursued and the success of efforts to translate evidence into practice. There are incredible opportunities for nursing research. The best is yet to come.

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Table 1. State population, demographics, social determinants of health for the 13 states in the West, in comparison with the 50 states in the United States

State/ Population	Demographics <sup>1,2</sup>						Ranks in Population Density <sup>3</sup> & Determinants of Health <sup>4,5</sup>					
	Seniors ≥ 65 yrs. %	Hispanic/Latino	White	African American	Asian	Am Indian/Alaska Native	Foreign Born	Density Rank	High school graduation	Violent crime	Children in poverty	Poverty%
Alaska 741,894	10	7	58	4	6	15	7	<b>50</b>	<b>46</b>	<b>50</b>	6	10.3
Arizona 6,931,071	16	31	51	5	3	5	14	<b>33</b>	<b>44</b>	<b>34</b>	<b>47</b>	17.4
California 39,250,017	13	39	39	7	15	2	27	11	<b>31</b>	<b>38</b>	<b>30</b>	15.3
Colorado 5,540,545	13	21	69	5	3	2	10	<b>37</b>	<b>45</b>	23	11	11.5
Hawaii 1,428,557	17	10	19	3	37	1	18	13	<b>33</b>	20	12	10.6
Idaho 1,683,140	15	12	84	1	2	2	6	<b>44</b>	<b>39</b>	5	22	15.1
Montana 1,042,520	17	4	90	1	1	7	2	<b>48</b>	19	<b>26</b>	24	14.6
Nevada 2,940,058	15	28	50	9	9	2	19	<b>42</b>	<b>49</b>	<b>49</b>	<b>29</b>	14.7
New Mexico 2,081,015	16	48	38	3	2	11	10	<b>45</b>	<b>50</b>	<b>48</b>	<b>50</b>	20.4
Oregon 4,093,465	10	13	74	2	4	2	10	<b>39</b>	<b>48</b>	14	22	15.4
Utah 3,051,217	10	14	81	1	3	2	8	<b>41</b>	<b>26</b>	9	4	11.3
Washington 7,288,000	14	12	69	4	8	2	13	25	<b>41</b>	17	21	12.2
Wyoming 585,501	15	10	85	1	1	1	4	<b>49</b>	<b>37</b>	8	3	11.1

**Bold indicates rank ≥26 out of 50 states** Population<sup>1</sup> = estimates as of July 1, 2016

Demographics<sup>2</sup> = % of the population by seniors and by racial/ethnic groups, does not include 2 or more races

Population Density<sup>3</sup> = based on population/total land area by state, lower rank indicates more rural area

Social Determinants of Health: High School Graduation<sup>4</sup> = % of students; Children in Poverty<sup>4</sup> = b% of children;

Violent Crime<sup>4</sup> = offenses per 100,000; Poverty<sup>5</sup> = % of adults in households at or below the poverty threshold

<sup>1</sup>(United States Census Bureau, 2016a); <sup>2</sup>(US Census Bureau, 2017); <sup>3</sup>(United States Census Bureau, 2010); <sup>4</sup>(United Health Foundation, 2016);

<sup>5</sup>(Proctor, Semega & Kollar. 2016)

Table 2. Health risk behaviors and health conditions for the 13 states in the West among 50 states in the United States

State	Health Risk Behaviors <sup>1</sup>					Health Conditions <sup>1,2,3,4</sup>					
	Smoking	Obesity	Phys inactivity	Excess drinking	Immunization	Cancer Deaths	CV Deaths	Diabetes	COPD	Mental Illness	Living with HIV
Alaska	<b>34</b>	24	10	<b>48</b>	<b>48</b>	<b>29</b>	9	3	<b>27</b>	<b>28</b>	15
Arizona	6	17	18	13	<b>26</b>	6	7	<b>27</b>	16	<b>26</b>	<b>34</b>
California	2	4	4	<b>29</b>	17	5	19	<b>26</b>	5	13	<b>39</b>
Colorado	15	1	1	<b>36</b>	14	3	2	1	8	19	21
Hawaii	8	2	12	<b>43</b>	20	2	4	12	3	11	22
Idaho	5	18	6	10	<b>29</b>	10	18	6	14	<b>45</b>	2
Montana	<b>32</b>	3	12	<b>47</b>	<b>42</b>	13	17	5	18	27	1
Nevada	25	15	18	12	<b>30</b>	22	<b>39</b>	21	<b>37</b>	3	<b>41</b>
New Mexico	25	19	14	6	<b>37</b>	4	11	<b>39</b>	25	<b>36</b>	19
Oregon	21	<b>28</b>	2	34	<b>45</b>	<b>26</b>	5	<b>31</b>	19	<b>47</b>	17
Utah	1	6	5	3	<b>42</b>	1	14	2	4	<b>50</b>	11
Washington	9	14	3	<b>27</b>	7	14	6	9	2	<b>46</b>	18
Wyoming	<b>34</b>	21	<b>25</b>	23	22	7	23	9	22	<b>37</b>	3

Note: **Bold** = rank  $\geq 26$  out of the 50 states

**Health Risk Behaviors<sup>1</sup>** (lower scores indicate lower prevalence): **Smoking** = % adults who are current smokers; **Obesity** = % adults with a body mass index  $\geq 30.0$ ; **Physical Inactivity** = % of adults who reported doing no physical activity or exercise; **Excessive drinking** = % adults reporting binge drinking or chronic drinking; **Immunization<sup>1</sup>** = % of infants and children aged 19 – 35 months, higher scores indicate lower rates of immunization; **Deaths** (per 100,000 population, lower scores indicate less deaths). **Health conditions** (lower scores indicate fewer cases), **Diabetes<sup>1</sup>** = % adults who reported being told by a health professional that they have diabetes; **COPD (chronic obstructive pulmonary disease)<sup>2</sup>** = age-adjusted prevalence; **Mental illness<sup>4</sup>** = any mental illness in the past year among persons  $\geq 18$  years; **Living with HIV<sup>3</sup>** = adults and adolescents per 100,000, lower scores indicate fewer with HIV.

<sup>1</sup>(United Health Foundation, 2016), <sup>2</sup>(Centers for Disease Control and Prevention, 2012). <sup>3</sup>(The Henry Kaiser Family Foundation, 2014), <sup>4</sup>(Center for Behavior Health Statistics and Quality, 2013)

Table 3. Health and death rankings for the 13 states in the West among 50 states in the United States

State	Health Ranking <sup>1,2,3</sup>			Deaths <sup>1,4,5</sup>			
	Overall	Senior health	Women & children	Infant mortality	Premature death	Drug deaths	Opioid deaths
Alaska	<b>30</b>	21	<b>28</b>	<b>27</b>	<b>35</b>	<b>34</b>	25
Arizona	<b>29</b>	<b>27</b>	<b>43</b>	23	24	<b>41</b>	<b>31</b>
California	16	<b>28</b>	10	3	3	12	7
Colorado	10	7	14	9	10	<b>33</b>	20
Hawaii	1	5	7	16	7	10	8
Idaho	15	15	<b>26</b>	20	20	18	18
Montana	23	<b>31</b>	3	20	<b>29</b>	17	16
Nevada	<b>35</b>	<b>42</b>	<b>47</b>	16	<b>32</b>	<b>43</b>	<b>37</b>
New Mexico	<b>38</b>	<b>33</b>	<b>37</b>	15	<b>42</b>	<b>49</b>	<b>43</b>
Oregon	21	12	<b>27</b>	13	17	15	10
Utah	8	6	6	10	13	<b>47</b>	<b>42</b>
Washington	7	10	16	3	8	25	19
Wyoming	25	<b>35</b>	<b>29</b>	16	<b>36</b>	<b>37</b>	<b>28</b>

*Note:* **Bold** = rank  $\geq 26$  out of the 50 states

**Health rankings**<sup>1</sup> = Lower scores indicate better health; **Overall**<sup>1</sup> = assessment using behaviors, community and environment, policy, clinical care and outcomes;

**Senior Health**<sup>2</sup> = based on 50-64 year olds and compared with key health indicators of seniors when they were this age in 1999; **Health of Women and**

**Children**<sup>3</sup> = composite score, Lower scores indicate better health.

**Deaths** = rates per 100,000, higher scores indicate higher rates of premature<sup>1</sup>, drug<sup>3</sup> and opioid deaths<sup>4</sup>

<sup>1</sup>(United Health Foundation, 2016a), <sup>2</sup>(United Health Foundation, 2016b), <sup>3</sup>(United Health Foundation, 2016c), <sup>4</sup>(The Henry Kaiser Family Foundation, 2014),

<sup>5</sup>Centers for Disease Control, 2016b)



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**THE NEXT 50 YEARS OF NURSING  
LEADERSHIP IN THE WESTERN STATES:  
VISIONARY EDUCATION AS MULTIPLIER  
FOR WIN**

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# THE NEXT 50 YEARS OF NURSING LEADERSHIP IN THE WESTERN STATES: VISIONARY EDUCATION AS MULTIPLIER FOR WIN

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For 60 years, nurses in education, research and practice in the Western states have come together in the organization we celebrate this year, to achieve more than any of us would have accomplished on our own (Western Institute of Nursing, 2016). A review of the past 60 years substantiates the leadership the Western Institute of Nursing (WIN) and its predecessor organizations have shown in anticipating and responding to important trends in nursing practice, research and education. This paper highlights examples of major initiatives that have advanced nursing education in the West, identifies the forces currently shaping the future of nursing education, and suggests specific directions for WIN as we begin our 7<sup>th</sup> decade.

The timeline of the organization reveals the relationship between changing conditions in health and health care delivery and the responsiveness of our organization (Western Institute of Nursing, 2016). Between 1965 and 1975, in the context of the civil rights movement and the women's movement, the Western Commission on Higher Education in Nursing (WCHEN) launched several initiatives targeting development of programs for leadership, faculty development, continuing education, research, and cultural diversity. After 1965, as the passage of Medicare changed the financing for hospitals and drove the demand for greater specialization in nursing, the Western Society for Nursing Research (WSRN) was founded, prioritizing clinical research and faculty development.

Between 1975 and 1985, nursing care became more complex with increasing acuity of hospitalized patients and the introduction of new technology in care at the bedside. Changing business models in health care, towards DRGs, brought greater scrutiny to nursing practice and staffing models. Our organization evolved to the Western Institute of Nursing (WIN), focused on the partnership of practice and education to advance quality of care. During the period of 1985 - 1995 demand for health care increased, costs escalated, and the electronic health record became widespread. Graduate programs grew across the West, with deepening collaboration in research across our region. Between 1995 and 2005, the greying of the workforce became a greater concern, with the average age of nurses in practice reaching the late forties and nursing faculty in the late fifties. The demand for both nursing faculty and leaders in nursing practice was met with the growth of doctoral programs, both the PhD and then the DNP. In 2004, the NEXus (Nursing Education Exchange: Partnering to increase the capacity of nursing PhD programs) was launched as a partnership between the Western Institute of Nursing (WIN) and the Western Interstate Commission on Higher Education's (WICHE) Northwest Educational Outreach Network (NEON), with support from the Fund for the Improvement of Postsecondary Education (FIPSE), US Department of Education. This project increased regional capacity to offer doctoral

nursing programs, by sharing courses in a distance format, enhancing access to faculty across multiple organizations, and promoting efficient delivery of specialty content. With additional funding from the US Department of Health and Human Services, Health Resources and Services Administration (HRSA) in 2008, NEXus added DNP programs to the portfolio.

As we celebrate the sixtieth anniversary of our organization, three major factors shape our priorities in education: trends in health care, trends in higher education, and the learner, depicted in Figure 1. Our programs contribute to the health care professions workforce in four important ways by preparing: Nurses for clinical roles at the individual, family, community and global level; Nurse researchers to advance nursing science and inform practice and education; Nurse Educators to optimize learning; and Nurse Leaders to advance organizations, programs and policy.

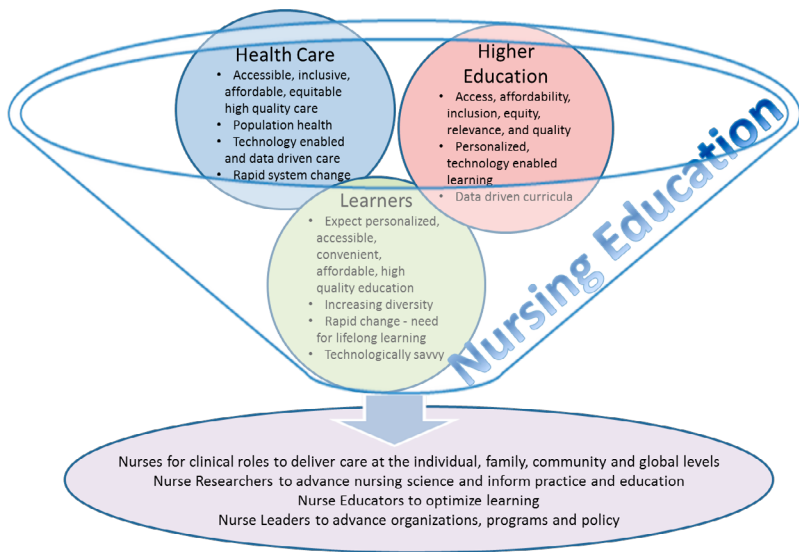


Figure 1: Factors shaping Nursing Education

### Health and Health Care

The nursing profession exists in a social contract to improve the health of the population, to promote health, prevent illness, and care for those who are ill and suffering. Our practice is shaped by major population health trends, both demographic changes and the prevalence of health conditions. Our population is aging and becoming more diverse (Centers for Disease Control and Prevention, 2013). Disabled adults live into old age, with complex health conditions. Most older adults have at least two to three chronic conditions, and have a range of needs from behavioral/life style adjustment to complex care. The aging of the population has implications on many fronts: the readiness of our communities to provide the appropriate environment to optimize health for older adults, the capacity of family and friends to provide informal supports, and the preparation of the health care work force and delivery system to

address the particular needs of older adults and the associated increased prevalence of chronic conditions. New demands are being placed on both formal health care and the informal caregiving network. Chronic disease absorbs 75% of all health care costs and threatens quality of life. Mental illness and substance abuse are major issues and are often comorbid with other health conditions, negatively affecting health outcomes. Our focus must shift to prevention and management that includes physical health, mental health, and social determinants of health across the lifespan. More care is delivered at home and in the community, and individuals and families need support from nurses to enact these new and increasingly complex roles (National Academies of Sciences, 2016a; Reinhard & Young, 2016).

Our population is also growing more diverse, and our health-care workforce does not reflect the communities we serve, nor do our programs take into account rich and diverse cultural differences. Health disparities persist across many dimensions, including gender/gender identity, sexual orientation, racial, ethnic and socioeconomic groups, veteran status, disability, and age, as well as by geography (Agency for Healthcare Research and Quality, 2016; United Health Foundation, 2016). Lack of access is a problem across communities, leaving many individuals and families without the comprehensive care they need.

Health care, at over 18% of the gross domestic product, is a major societal priority and an issue for those delivering care, receiving care, and paying for care. The Triple Aim makes explicit the direction necessary to improve population health (Berwick, Nolan, & Whittington, 2008). Major shifts are underway to a more consumer-driven model of care, increasingly delivered in homes and community settings by transdisciplinary teams, enabled by technology and in partnership with individuals, families and communities (Chow, 2016). Health care at the macro and micro levels is increasingly data driven integrating clinical, patient generated, genomic, metabolomic and environmental data. Reimbursement changes are driving new partnership across health care settings, changing practice to follow the person rather than remain within one setting. The pace of change in health care is accelerating at a time when future policy is even more uncertain. Finally, the scope of practice of health professionals will evolve and teams will include more unlicensed personnel, such as community health workers to expand access (Young & Siegel, 2016).

Educators of the largest health care profession have the opportunity to assure that the nurses we prepare for the upcoming decades are equipped to address both population health priorities and health care delivery challenges in a rapidly changing world.

### **Trends in Higher Education**

Health care and education share the call for improvements in the areas of access, affordability, quality, inclusion, and equity. With rising costs of education and escalating student debt, coupled with a challenging job market, the popular press reflects societal questions about the return on investment for higher education (Cassidy, 2015). State support for universities has declined over the past decade, at a time when costs of delivering high quality education have increased, escalating tuition and fees. Diversity, equity and inclusion are major goals in higher education, to promote student success, a vibrant democracy and an effective workforce (Association

of American Colleges and Universities, 2016). The faculty and student bodies of most universities do not yet reflect the diversity of their communities.

The Association of American Colleges and Universities (AACU) calls for both increased access to and greater excellence in higher education. This report is relevant to nursing education as it lays out the core learning outcomes for college education for all disciplines: Knowledge of human cultures and the physical and natural world; Intellectual and practical skills, including inquiry and analysis, creative and critical thinking, communication and teamwork skills; Personal and social responsibility including civic knowledge and engagement, intercultural knowledge, ethical reasoning and foundations for lifelong learning; and integrative learning with synthesis and advanced knowledge (Association of American Colleges and Universities, 2010). Acquisition of these learning outcomes requires new approaches to teaching and learning that engage students in conversation with one another, exploring different perspectives, and building skills in teamwork to understand and solve complex problems (Millis, 2010).

Technology is transforming higher education, with an array of new resources for collecting and aggregating data for analytic purposes, and making materials available to faculty and students through open educational resources (Mintz, 2014). Decisions can now be driven by data about the students and their performance, the delivery and uptake of learning activities, and the outcomes of different approaches. Curricula are becoming more data driven, taking into account learning outcomes and successes of students, coupled with priority content for each discipline. Flipped classrooms, enabled by technology, shift the focus to application of content obtained prior to coming to class, on-line or in pre-assigned activities. Virtual reality, collaborative tools and simulation are in common use to promote learning clinical and communication skills, yet systematic evaluation of these new approaches lags (Neill & Wotton, 2011). With greater expectations by accrediting agencies to measure learning outcomes, technology such as dashboards and e-portfolios, will become more important for tracking student progress and can also perform predictive analytics to guide decisions about admission, course selection, remediation, and potential resources to promote student success.

## **The Learner**

The Future of Nursing report called for both transforming nursing education and increasing diversity in nursing, two major areas pertinent to our learners. The Campaign for Action, through state Action Coalitions and investments in Academic Progression, is bringing these recommendations to life, with increases in diversity and the proportion of nurses with baccalaureate degrees (now at 51%) and a doubling in the number of nurses with doctorates (from 8,267 in 2009 to 21,280 in 2014)(Campaign for Action, 2016). The most recent racial/ethnic profile of nursing students reported by the National League for Nursing revealed the following percentages of minority students: 12.2 % African American, 8.1% Hispanic, 5.9% Asian/Pacific Islander, 1.5% Native American, and 7.5% other, for a total of over 30% (National League for Nursing, 2015). The American Association of Colleges of Nursing reports similar statistics, and also notes an increase in enrollment in baccalaureate and graduate programs attributed to calls for more highly educated nurses (American Association of Colleges of Nursing, 2011).

Nursing education still takes place over many years. Students over 30 years of age represent 18% of baccalaureate enrollees, 60% of master's enrollees, and 84% of doctoral enrollees, suggesting that nurses work for a period prior to returning to university for graduate degrees. These statistics mean that faculty are teaching students with a wide range in age, and with generational differences that influence learning preferences (Billings, Skiba, & Connors, 2005). It also means that learners in graduate programs bring extensive life and work experience, adding the potential richness of the classroom experience. However, with the changing trajectories of nursing education, including accelerated programs, many doctoral students may have less clinical experience than in years past requiring the addition of clinical opportunities in PhD programs.

Just as technology is transforming higher education, personal use of technology is changing expectations of learners. With resources at our fingertips at any time, located in small devices, access to information to deliver care, understand evidence, and communicate has profoundly changed the student experience and expectations. Models of information delivery relying on fixed times and uni-directional flow from expert to novice are obsolete – students expect greater flexibility in schedule and timing of learning, access to varied media to understand information, and enhanced opportunities to interact with information and apply knowledge to practice.

### **Implications for Nursing Education**

The changes in health care and population health shift the competencies required to practice, teach and conduct research effectively. Beyond clinical competencies, our graduates need to possess skills and expertise in leadership, cultural inclusiveness, health disparities, effective communication, collaboration, and teamwork and use of enabling technology. With the emphasis on quality and value, our graduates must have an understanding of improvement methods and systems engineering, an appreciation for evidence based practice, and a strong commitment to engaging those we serve (Presidential Council of Advisors on Science and Technology (PCAST) Workgroup, 2014). Success in the rapidly health care system requires both flexibility and dedication to lifelong learning and enacting leadership at every level.

Our schools and colleges are nested in the broader context of higher education and the learning outcomes identified by the AACU are highly aligned with nursing. In fact, nursing is a field that encompasses the basic arts and sciences with a social contract to advance health. As members of our university communities, we have an obligation to address these national priorities. The complexity of human health and wellness and the therapeutics of our field are ideally suited to innovative teaching methods with endless possibilities for student engagement, team work, and critical thinking that not only increase their capacity in the field, but simultaneously promote personal intellectual and ethical development. It is imperative that our schools create an inclusive environment for all learners so that we can attract and graduate students from diverse backgrounds and we can be more effective in addressing social determinants of health. This involves optimizing the culture of the organization, curricular design, and all the learning activities in a strategic fashion (National Academies of Sciences, 2016b).

The West is home to some of the most influential thought leaders in nursing education. Benner and colleagues (Benner, Sutphen, Leonard, & Day, 2009) call for a radical

transformation in nursing education, from admissions through curricular and clinical design. Core to the recommendations are approaches that deepen the connection between classroom learning and clinical experiences, promoting application and synthesis of knowledge as it applies to the complexities of practice and the variation in human experience of health and illness. Students must develop skills of inquiry and research that underpin learning and practice for a lifetime. Because care occurs in systems, students must be prepared to understand and navigate their context so they can be agents of change. Reform is needed across all health professions to enhance interprofessional learning, focus on competencies, capitalizing on educational technologies and assuring faculty development, aligning education reform with health care delivery reform (Thibault, 2013).

Pedagogical approaches that place the student at the center, using individual learning style and preferences as a basis for design of the learning experience will optimize learning. A number of methods can enhance learning and cultural inclusiveness, including integrated case-based scenarios and simulation in which students apply and synthesize knowledge in teams to appreciate the complexity of the problem and potential solution. Well-designed scenarios offer the opportunity to hone both analytical skills and develop capacity for compassionate and ethical care. Inclusion of other disciplines and professions in the classroom and clinical setting is essential to effective practice, education and research. Ideally, learning activities, coupled with student evaluation, build on one another to promote mastery (Cook, Brydges, Zendejas, Hamstra, & Hatala, 2013). With the proliferation of methods for education, nursing education research is even more vital. For example, while competency based education has been widely adopted in medicine, the outcomes and applicability to all aspects of the curriculum remain controversial (Morcke, Dorman, & Eika, 2013; Norman, Norcini, & Bordage, 2014).

The West has also led in conceptualizing new approaches to streamlined academic progression. Tanner and colleagues (Tanner, Gubrud-Howe, & Shores, 2008) imagined and developed the Oregon Consortium for Nursing Education that brought together educators from community colleges and universities across the state to create a shared curriculum that optimized faculty, clinical sites, and classroom resources while offering a seamless path for advancing educational attainment. This model addresses health disparities by providing a means for qualified applicants to remain in their communities for education, and then to continue in practice. Importantly, it demonstrated the power of collaboration in achieving innovation and excellence and aligned with a major recommendation of the Future of Nursing report to streamline education through better articulation (including course alignment and transfer agreements) with community colleges (Institute of Medicine, 2010). It has become a national model that inspires excellence.

Sixty years ago, the WIN collaboration of educators, institutions of higher education, public agencies and foundations propelled nursing education, nursing practice and nursing science forward to address pressing societal needs for health and health care. At the core, nursing leadership in WIN recognized that "...the greatest single obstacle in nursing is the lack of nurses with preparation to do research" (Coulter & Western Interstate Commission for Higher Education, 1963). Preparation of nursing researchers and faculty are still vital for our profession. PhD enrollment is declining in the U.S., at a time when research for our practice is even more needed. Recruitment, rigorous

research training, and mentorship into a research career are high priorities for assuring a strong future for nursing research. The upcoming faculty shortage is a call to recruit talented students and colleagues in practice to faculty roles and include preparation for education in graduate programs. PhD students who value teaching and research and have had faculty mentorship are drawn to academia, while financial considerations and negative views of academia impede interest (Fang, Bednash, & Arietti, 2016). This underscores the importance of deliberate outreach and mentorship to grow tomorrow's faculty. It is also an opportunity to develop new faculty roles that include practice and to develop innovative approaches for faculty retention.

Clearly each doctoral program cannot address all areas of nursing science, suggesting greater focus within programs and increased collaboration across programs to build the science broadly. Further, to increase PhD preparation in Nursing Science, our schools could collaborate with other health sciences to target those students who want academic/research careers in health sciences and offer an integrated undergraduate/graduate program, coupled with mentorship to support this aspiration. Such programs could embrace common curricula that bring together individuals interested in PhD-DVM-RN-MD academic careers, providing opportunities to collaborate in team science and streamlining research education (Young, 2016).

The transformation envisioned, as well as the increasing diversity of our student population requires investment in faculty development and opportunities for practice of both teaching and nursing. As we prepare students for a world of rapid change, faculty must also be nimble, flexible, culturally inclusive, and act as lifelong learners to be ready to offer strong learning environments. Faculty will have to work more effectively as interprofessional colleagues to make crucial decisions about curriculum priorities that add value rather than more content so that students obtain foundational knowledge about current health issues of highest priority in global and local communities. Administrators of nursing schools and programs must promote the structures and processes that best support and retain faculty, value the diversity of needs that faculty have, provide appropriate faculty development and reward excellence in teaching.

Substantial and thoughtful investments in technology are central to teaching for the future, including software and hardware, simulation resources, and collaborative learning platforms. With the expense of these investments, strategic planning and partnerships, as well as education research are essential to assure value. A stellar example of regional collaboration began in 2004, with the launch of NEXus (Nursing Education Exchange: Partnering to increase the capacity of nursing PhD programs). This project increased regional capacity to offer doctoral nursing programs, by sharing courses in a distance format, enhancing access to faculty across multiple organizations, and promoting efficient delivery of specialty content.

### **Is It Time to Reconceptualize Nursing and Health Professions Education?**

Interprofessional competencies and experiences are gaining traction in health science education, and still schools of health wrestle with the best ways to bring students from different disciplines together to learn from and with each other (Zierler, Ross, & Liner, 2010). The end goal is to graduate practitioners with the capacity to function at a high level within transdisciplinary teams. One approach to both accomplishing this goal



and to enhancing the efficiency of health professions education would be to begin with an undergraduate health sciences major. This major could address prerequisites for all health professionals (nursing, medicine, pharmacy, physical therapy, veterinary medicine, etc.), and provide the foundation for a successful student experience as a clinician, addressing such areas as interpersonal communication, teamwork, ethics, leadership, health and public health, multi-cultural perspectives, quality improvement and the social determinants of health. Opportunities for exposure to clinical roles could facilitate selection of the target health profession. With a common undergraduate degree, students could then pursue further education as nurses, physicians, pharmacists, veterinarians, social workers and other health professions, equipped with the skills to collaborate effectively. A model such as this could streamline education and improve efficiency in common health science course delivery. Early admissions agreements could facilitate seamless progression and mentorship programs could enhance success for students from underrepresented groups.

The second phase of education, clinical preparation, could be more targeted to accomplish mastery of the registered nurse or advanced registered nurse practitioner role, focusing on academic-practice partnerships to optimize relevant learning (Young & Chow, 2016). Clinical sites that address pressing issues in population health can be prioritized to assure that we prepare nurses both for today's system and the evolving needs of the population. For example, with the emerging effort for enhancing the role of registered nurses in primary care (Josiah H. Macy Jr. Foundation, 2016), it is important to increase exposure to ambulatory care settings for chronic disease management. Such shifts in traditional clinical sites often require advocacy and discussion with Boards of Registered Nursing who approve clinical rotations.

## **Vision for the Future**

When people turn sixty, they are often grappling with questions about retirement and assuring a legacy, because, alas, this milestone definitely signals entry into the last half of life. When an organization turns sixty, it is a testament to its survival and relevance, and a reminder of the responsibility to continue to provide value to its stakeholders, with a potentially greater lifespan than any of its members. WIN has demonstrated a strong history of taking in contemporary and future trends and translating these into action for its members. As we celebrate WIN's legacy and contributions, it is incumbent upon all of us who are members to join together in envisioning our future. As nursing educators, our influence extends many years into the future as those we teach go on to shape practice, conduct research, and educate the next generation. We are multipliers: What we do today will make a difference for decades to come.

For nursing education, WIN can be a forum for us to digest, interpret, and understand the imperatives of our time. Together we can share ideas for transformation, partnership, collaboration, and we can identify our priorities for research in education to advance our effectiveness. Because of the inclusion of practice, research and education in our mission, we can use our understanding of the forces shaping our profession to project future workforce needs in our region and we can use this information to prioritize our educational initiatives. The diversity of our population in the western states, along multiple dimensions, positions us to lead in inclusion and equity efforts and move towards a day when our profession represents the populations we serve. Our collective

strength offers opportunities to influence both the national agenda and regulations at the state level that impede our progress towards our ideals. Finally, we can forge deeper collaborations across our region to accomplish higher quality and more efficient delivery of nursing education.

I remember my first meeting at WIN in 1987 as a doctoral student from the University of Washington, brought to the conference and inspired by my faculty, Joan Shaver, Nancy Woods, Marie Cowan, and Jeanne Benoliel. It was an introduction to the strengths of our region in nursing practice, research and education. The WIN meetings during my doctoral program solidified my interest in an academic career, and I had the chance to meet and learn from all the impressive researchers whose work I was reading in class. I can only imagine the hundreds of doctoral students who shared my experience. As a faculty and now as a dean, WIN has been a place to renew friendships, forge relationships and build ideas that span our organizations and address priorities in research, education and practice. I am honored to be a member of WIN and look forward to our bright future.

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**A JOURNEY THROUGH WOMEN'S  
HEALTH AND SLEEP SCIENCE:  
THEN, NOW AND IMAGINE!**

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Professor and Dean  
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# A JOURNEY THROUGH WOMEN'S HEALTH AND SLEEP SCIENCE: THEN, NOW AND IMAGINE!

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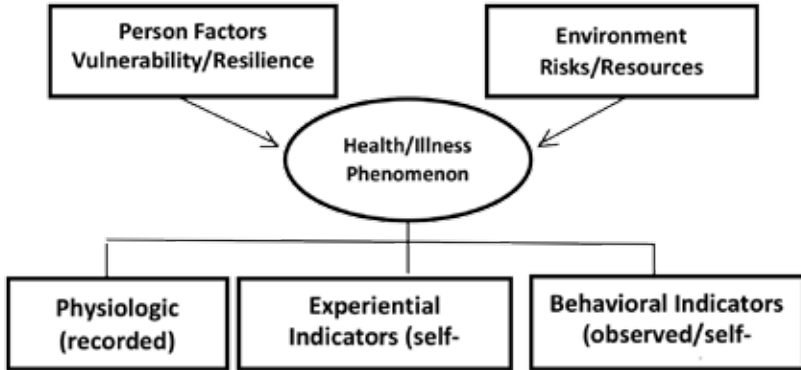
Using a phrase appearing in Research!America, *Then, Now and Imagine* or a similar one used by the Minnesota Historical Society, *Then, Now and Wow*, I reflect on my journey down my scientific career road and some of the progress made toward the destination of enlightened knowledge about women's health and sleep science. Apropos to this year (2017) as the 50<sup>th</sup> anniversary of the Western Institute of Nursing (WIN), in this paper I map a career path almost as long as WIN's existence, highlight success dynamics, billboard scientific contributions and progress, and reveal various forks in the road I have taken. While each person travels her/his own road, I hope that some can learn from mine and be inspired to or continue to add nurse-generated health science knowledge, particularly regarding women's health and sleep.

**Then - The Hiking Trail:** After earning a BSN in Canada, too naive to plan a complete career map, and having only worked a couple of years in a combined role as surgical floor nurse and nursing instructor, quickly I realized I knew too little to be doing what I was doing. I wanted to know more so I took the next step to pursue my master degree, which I fortuitously did at the U. of Washington (UW) – general medical-surgical approach and a strong research emphasis culminating with a thesis. Being in the era of the U.S. federally funded nurse scientist program, I encountered a nurse scholar nearing completion of her UW PhD degree in Physiology and Biophysics – Sue Donaldson – who was most inspiring and a strong advocate for expanding the cadre of physiology-centric nurse scientists. With no prior long-range thinking about going down the PhD trail, I found myself seeking admission to the Physiology and Biophysics (PBio) Department of the UW School of Medicine. After a full year of required pre-requisites (calculus and physics) and although not eligible for nurse scientist training program financial support, under its auspices, I entered the PBio PhD program - focused on normal organ system physiology.

**What Did I Discover?** Scientifically I studied the cellular Na<sup>+</sup>-K<sup>+</sup> ATPase mechanism for urine concentration/dilution. My dissertation chair and I conveyed my findings at an interdisciplinary basic science conference and in a journal (Shaver & Stirling, 1978). Personally, although I am grateful for how it changed my thinking, I came to realize that, for me, the conventional biomedical framework was too narrow to fully explain human health. My PBio studies embodied a 'part'-icular approach and in my mind the sum of the 'parts' did not sufficiently 'explain' the 'whole'. This was a time of cell biology that over time morphed into molecular biology – making the 'parts' even more finely particulate. My interest was in a more whole system view. Moreover, I was not exposed to the physiological basis of emotions or cognitions or to integrated functions important to nursing clinical practice. E.g., I had learned how the kidney works physiologically (in order to recognize when it does not) but did not learn how micturition occurs physiologically (let alone through integrated body/mind mechanisms) – micturition being an integrated function important to the nursing practice of helping people manage urination. Still a challenge to nurse scientists might be to re-frame PBio according to whole person function.



**Fig. 1: Framework for the Study of Individual Adaptations in Wellness and Illness**



What Did I Learn? Professionally and personally, besides becoming a neophyte, steeped in conventional physiology extant content, I learned to: 1) mentally visualize organic systems so as to describe how they functioned (taking text to image); 2) argue system (organ) function based on empirical evidence with intense peer intellectual challenge; 3) master various methods to empirically probe and monitor organ/cell function, and consequently about electrical circuits and performing minor repairs on electronic equipment (helpful in home life whereby e.g., I can wire light switches, thermostats etc.); and 4) present scientific findings in good biomedical form.

**Then – Rural Route 1:** Important as the conventional biomedical learning was and is, as I left the hiking trail with my PhD in my backpack, I got on rural route 1 with a self-learning motivation to embrace a blending of behavior and biology knowledge, i.e., biobehavioral science. However, I did not seamlessly continue to build on my PhD dissertation work and some personal life intervened to vary my initial academic appointments. My first faculty appointment (assistant professor) at the U. of Arizona shifted in a little over a year as life took me back to Canada to an appointment at the U. of Calgary. While there, I joined a laboratory in the Faculty of Medicine, where I cycled back to more basic science and pursued understanding kidney function in the context of fever.

At the U. of Arizona, faculty member, Dyanne Affonso was coordinating with Ann Clark the second edition of the textbook: *Childbearing: A Nursing Perspective*. Unsatisfied with explanations of reproductive physiology put forth in the prior edition, Dyanne asked me to write this content. Not being a maternal child clinician or scientist except in a general sense, I was naturally reluctant – but ultimately intrigued.

What Did I Discover? I perused the female reproductive literature and determined that precious little science was available regarding understanding women’s reproductive function, especially around pregnancy. I could not forgo the opportunity to summarize, at least for myself, what we did and did not know. For the childbearing book, published in 1981, within two chapters, I summarized the knowledge to date regarding the biologic function of female reproduction and the adaptations in pregnancy to nurture the fetus. This parlayed into my invited authorship of four other book chapters. Although having barely completed my PhD, this endeavor essentially paved the way for my eventual travel into women’s health science territory.

At the U. of Calgary, I mastered more ways for physiologic probing, electronic monitoring and animal surgery techniques and much about the phenomenon of fever, which because it is an integrated function was not part of my basic physiology and biophysics education. While I did not have success in discovery that warranted making it my life’s work, I did summarize in a paper what I had learned scientifically about fever to urge changes to conventional management according to evidence; published in the Nursing Practitioner journal (Shaver, 1982).

What Did I Learn? I learned the value of staying open to opportunities – exploring before rejecting. From my time at the U of Calgary, I confirmed that while basic science was a fabulous foundation for provoking my analytical thinking, it did not fill my clinical application ‘gas tank’ sufficiently. Looking back I realize that delving into fever piqued my curiosity about the immune system and ultimately, later important connections that eventually I would make among the immune, the stress emotion and tissue harm systems and chronically fatiguing conditions in women.

**Then – On Ramp to the Transdisciplinary Highway:** Offered the opportunity to join the faculty at the U of Washington, in 1980, I became assistant professor in the Department of Physiological Nursing, which for several reasons became the on-ramp to the highway of my research program in women’s health and sleep. Already harboring some knowledge of women’s health, I reconnected with my master’s degree thesis mentor, Dr. Elizabeth (Betty) Giblin. Through her interest in sleep science related to sleep apnea, she had established in a nursing school, the first sleep laboratory for physiological monitoring of sleep. Then approaching retirement and wanting to continue her legacy, she reached out to me. My terms were that she teach me all she knew about sleep science and together we would apply it to sleep in women. At the time, Betty had a wonderful *scientist-in-the-making* participating in the sleep laboratory, now Dr. Kathryn Lee, a noted scholar in women’s health and sleep. Somewhat by default, I became Kathy’s dissertation chair and she taught me a great deal about sleep science. During this time, my master’s degree classmate, longtime women’s health expert and now holding a PhD in Epidemiology from North Carolina, Dr. Nancy Woods joined the UW faculty. As did Dr. Margaret Heitkemper after completing her PhD in Physiology at the University of Illinois at Chicago. Margaret’s work in functional bowel disorder in women, positioned in the context of stress and tissue harm fit with my pursuit of understanding insomnia in the same context.

**Table 1: Midlife Women Sleep Subtypes by Recorded and Self-reported Sleep**

	Reported Good (No Insomnia)	Reported Poor Sleep (Insomnia)	Total
<b>Recorded SE ≥ 85%</b>	57.3% (n = 47)	14.6% (n = 12)	59 (72%)
<b>Recorded SE &lt; 85%</b>	19.5% (n = 16)	8.5% (n = 7)	23 (28%)
<b>Total #</b>	63	19	82
<b>Percent</b>	77%	23%	100%

What Did We Discover? Scientifically, Betty and I discovered that little was known about sleep in women compared to men and less about women in reproductive phases. One area poorly studied was women in transition to menopause (MT) and so I began to map the direction for my primary research program. Basically, a knowledge scan showed that 23 - 63% of surveyed women in post-

menopause phase (at least one year past last menstrual period) report insomnia (insufficient or poor quality sleep) and when women who are in transition to menopause (MT) are compared to those not yet showing signs of MT, twice as many report poor

sleep (20% vs 40%). The contributing factors to insomnia in this context remained unclear with conventional medical speculations that ovarian hormone withdrawal was the culprit. A gap analysis showed that very few studies of midlife women related to menopause status and sleep existed, almost all were descriptive surveys for reporting prevalence, measured only self-reported sleep quality, and were subject to selection bias introduced by recruitment from physician practices or clinics.

At the same, growing was my recognition that important to understanding health status was mind function influences on bodily or somatic function and vice versa. I began to cogitate on a human health framework that stepped beyond those about which I had been taught. In 1985, I advanced my preliminary views in a paper: *A biopsychosocial view of human health* (Shaver, 1985). Given our synergistic thinking, Margaret Heitkemper and I began to discuss our approach to science more and to develop our thoughts about a human health framework, influenced by the field of study in the UW PhD program – individual adaptations in health and wellness and the prevailing ideas about human responses. In 1989, we used a framework (similar to Fig. 1) to articulate nursing research opportunities in enteral nutrition (Heitkemper & Shaver, 1989) and as doctoral a student, Rick Henker used this frame to broaden measurement considerations for his dissertation study on fever and cooling (Henker & Shaver, 1994).

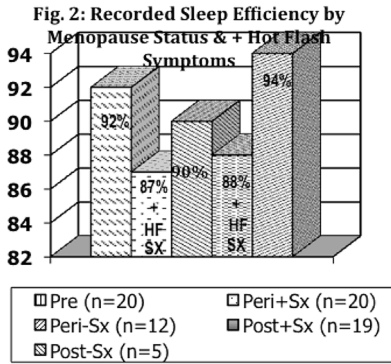
What Did I Learn? Professionally and personally, I learned the value of collaboration and peer mentorship (including from those at novice stage).

Between us, Margaret and I teamed up to submit one NIH proposal with me as PI and she as co-I and vice versa. We reasoned that if one got funded and not the other, the alternative partner would benefit from engagement with a funded study while continuing to pursue PI status. Luckily, in 1984 both proposals were funded for three (3) years by what was then the Division of Nursing at DHHS – mine as PI entitled: *Perimenopause: Sleep and Breathing Patterns* and Margaret's as PI entitled: *A Nursing Study of Gut Function in Menstruating Women*.

**Then – Traversing the Transdisciplinary Highway:** I continued to engage as co-investigator with Margaret, through the late 1980s and all through the 1990s, each of us supported by continuation R01s from our inaugural studies. Our team continued to evolve a program of sleep research and insomnia in midlife women. From what became the National Center for Nursing Research, as PI, I received funding that spanned 1987-1996 for studies entitled: *A Nursing Study of Perimenopause Insomnia*. All during this time, we grew our connection to Nancy Woods, who greatly expanded my views of the science important to women's health. In 1989, when the opportunity arose to compete for the first ever Center grant sponsored by what we know as the National Institute for Nursing Research (NINR), Nancy, Margaret and I swiftly put our proposal heads together and received funding for one of the first two NINR-sponsored centers – the *UW Center of Women's Health Research*. Within this award, my team and I continued our science with an R01 on symptoms of stress responsivity in midlife women with insomnia (Shaver, Johnston, Lentz & Landis, 2002).

What Did We Discover? In the studies I spearheaded, we first selected healthy, community-living woman for age (45–55 yrs.), regardless of sleep quality or MT symptoms and classified them as having 'good' (rated their usual sleep as very good, good or fair) or 'poor' (rated their usual sleep as poor or very poor) reported sleep.

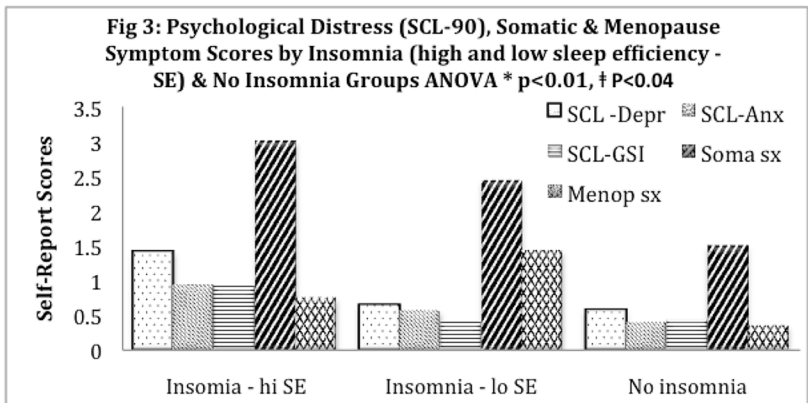
We recorded sleep using standard polysomnography (PSG) in the laboratory and calculated sleep efficiency (SE - the proportion of time in bed asleep) and classified women as having 'good' (high SE  $\geq 85\%$ ) or 'poor' recorded sleep. Scientifically, we learned that only a subset of women in a menopause transition (MT) age cohort (average age of menopause  $\sim 51$  yrs. old) reported poor sleep (insomnia) and of those less than one half showed concurrent poor PSG sleep (see prior table) (Shaver, Giblin, E.; Lentz, M.; Lee, K., 1988; Shaver, Giblin, & Paulsen, 1991).



We then classified participants according to menopause stage – pre-menopause if regular menstrual cycles, no hot flash (HF) symptoms and normal follicle stimulating hormone (FSH) levels; MT if menstrual cycle bleeding pattern changes, hot flash activity and/or normal to high FSH; and post-menopause if more than two years past their last menstrual periods. When we compared sleep indicators across menopause stage groups, there were no differences, i.e., we could provide no evidence that menopause stage [hypothalamic pituitary ovarian (HPO) hormone changes] contributed to poor sleep.

We then looked at group differences on the basis of experiencing the most common MT-associated vasomotor symptoms (hot flashes, night sweats, and daytime hot spells). A greater proportion of women in MT or post-menopause stage with vasomotor (hot flash) symptoms had lower SE (Fig. 2).

Using the Symptom Checklist 90 revised (SCL-90R), we assessed psychological distress, (subscales for depression and anxiety and the Global Symptom Index (GSI shown in figure 3). Using a somatic symptom checklist, we documented self-reported somatic symptoms, e.g., headache, joint pain, tingling, heart racing, dizziness tiredness etc. We compared women with and without insomnia on psychological distress, somatic and MT-associated symptoms. Differing from women with no insomnia, we revealed two groups of women reporting insomnia (Fig. 3). In spite of reporting insomnia, one group



had normative recorded sleep (PSG high SE) and another had concurrent poor recorded sleep (low SE). Compared with women without insomnia, the insomnia with high SE group had higher psychological distress and somatic but not vasomotor symptoms and the insomnia with low SE group, had higher MT vasomotor symptoms but not psychological distress. Therefore, we concluded that for some women in MT, poor sleep is more a function of emotional distress and for others it is more a function of vasomotor activity likely disturbing sleep (Paulsen & Shaver, 1991; Shaver & Paulsen, 1993).

What Did I Learn? As a scientist, I learned to see patterns in data, envision ways to explain errant and less than clear results, and plot the next steps for seeking further evidence. As my research program matured, I learned how to motivate a team, administer a budget and have project-centric accountability. Writing proposals and trying to make sense out of data gave me joy beyond measure. I ended up believing that research is to the scientist what the painting canvas is to the artist. It's about choosing ways (the medium) to derive, interpret and convey a vision – one that contributes to explaining or predicting phenomena of interest – in our case sleep quality.

During this maturing phase, I also learned the value of taking every opportunity to evaluate the science of others. By serving as proposal reviewer for the National Research Service Awards (NRSA) and the American Nurses Foundation, and selecting abstracts for the Western Society for Research in Nursing (became WIN) annual research program; plus from being on the Advisory Council for the NINR (2001-2005), I learned what works and does not in proposals and about the national agenda for nursing-influenced science. As well, in my faculty role, I learned that I enjoyed leading organizational initiatives and began to see a curve in the road that went towards administrative leadership for improving environments, processes and systems to help build capacity for innovations, expanded visibility, and cross-organizational collaborations.

**Then – Taking a Curve in the Road:** The curve in the road began to appear at the U. of Washington, where in 1988, I was appointed Chair of the Department of Physiological Nursing, which morphed to be the Department of Biobehavioral Health Science. I gained academic leadership experience for strengthening the department in collaboration with the terrific existing faculty (like Margaret Heitkemper (now Department Chair), Marty Lentz, Pamela Mitchell, Betty Gallucci, Susanna Cunningham, among others). Focused on talent needed to continue to excel, we attracted stellar new research faculty – e.g., Diana Wilkie (now Prairieview Trust-Earl and Margo Powers Endowed Professor at U. of Florida), Joey Whitney (now UW Associate Dean for Research), Basia Belza (now UW Professor and The Aljoja Endowed Professor in Aging), and Carol Landis (an accomplished sleep scientist and UW professor), among others.

As the leadership curve angled, with continuation funding from the NINR and closely partnered with Carol Landis, our sleep and midlife research program expanded to encompass understanding the role of sleep quality in contributing to the manifestations of chronically fatiguing and painful illness with excess prevalence in midlife women – i.e., women with fibromyalgia and chronic fatigue syndromes (FM/CFS). These are conditions of widespread pain for which there is no clear pathology and medical diagnosis is made on the basis of symptoms; more than half of women meet criteria for both conditions. Existing literature showed a profound impact on reported sleep quality (longer time to fall asleep, fewer hours of sleep, and taking more sleep medications) and waking up exhausted; at that time very few investigators had recorded sleep. There

was some evidence of blunting of the stress activation system, and disordered sensory processing (e.g., pain tolerance and threshold changes). Going back to our insomnia sample of midlife women to date, we uncovered a subset (n=11) of women who reported having FM/CFS – a condition for which we had not screened in prior studies.

What Did We Discover? For preliminary data, we used data from a random sub-sample of women without FM/CFS from our prior sample to compare to the women with FM/CFS. We found differences in reported and recorded sleep (e.g., less deep sleep with FM/CFS). We created more preliminary data by mimicked the pattern of poor physical sleep, i.e., depriving healthy women of deep sleep stage. We showed that the women developed especially musculoskeletal and fatigue symptoms (Lentz, Landis, Rothermel & Shaver, 1999) when deprived of deep sleep. In the larger study, supported by the NINR, we used reported and recorded sleep and nighttime blood draw measures; searching for insights into sleep-related physiological changes that might explain symptoms. We confirmed that compared to women without FM/CFS, reported sleep was poor. Recorded sleep showed normative time in bed but lower sleep efficiency with less total sleep time, longer times to fall asleep and more awakening after sleep onset; plus the women had less deep sleep and were more prone to sleep-related breathing disorder and restless leg syndrome (Landis et al., 2003). We found changes within the sleep-EEG that related to possible pain and sleep-related networks in the brain (Landis, Lentz, Rothermel, Buchwald, & Shaver, 2004) and documented deficits in nighttime growth hormone, prolactin and immune indicators (Landis et al., 2001; Landis, Lentz, Tsuji, Buchwald, & Shaver, 2004).

What Did I Learn? I was totally surprised to learn that others were seeing me as a pioneer in sleep and women science. Our work began when there was little scientific world value was placed on women's health or sleep science. We only knew we wanted to know more and while never expecting outside recognition, I began to get calls from media reporters, who had been told I had done some of the earliest work in sleep related to women in MT, and requesting quotes for lay publications. I realized that mapping new paths and not simply following well-worn ones can turn into the unexpected.

**Then – Continuing around the Curve:** In the early stages of studying midlife women, sleep and FM/CFS, the pull of systems leadership strengthened and I accepted the deanship at the University of Illinois at Chicago (UIC). For the science, I passed the PI baton to Carol Landis (whose sleep interest had always been in sleep and pain). From 1996-2000, I continued my involvement with Chicago as a site for data collection and as senior co-investigator. At the UIC, I was fortunate to connect with the very accomplished women's health nurse scientist, Dr. JoEllen Wilbur and we secured nearly \$1 mil in foundation funding to do much deeper description of how FM/CFS manifested in women. We mentored protégés, e.g., Dr. Shannon Zenk (now a superstar researcher and UIC professor) and Dr. Patrick Robinson (now Dean at Capella University). During this phase, I came to appreciate that I once again worked with some of the best clinician scientists in our field, e.g., Drs. Lucy Marion, Janet Larson, Rosemary White-Traut, Carol Ferrans, Barbara Dancy, Mark Foreman, Gail Keenan, and Diana Wilkie, among many others. We established a collaborative grant proposal peer review process in which I enjoyed being a reviewer. I was privileged to co-write different grants (HRSA), funded for capacity-building and aimed at career development and become co-director of the research core for the inter-disciplinary, federally-funded UIC National Center of Excellence in Women's Health. During this time and adding greatly to my scientific learning, I was an ad hoc reviewer for the NIH and on

the Scientific Review and then Health Advisory Committee of the Alberta Heritage Foundation for Medical Research, Canada. Perhaps because I studied a phenomenon that few do so from a nursing perspective, I was invited as the only nurse scientist into two 'agenda-setting' FM and CFS NIH think tanks. Currently I have the privilege of representing the American Association of Colleges of Nursing on a panel for advising the Centers for Disease Control on patient education for these types of conditions.

What Did We Discover: From a telephone survey of 442 women with and 205 women without FM/CFS, our UIC team described group differences in: (1) general health status; (2) reproductive and sleep-related diagnoses; and (3) lifestyle health behaviors, after controlling for age, body mass index (BMI), race, employment status, marital status, having a college degree, low household income, and having ever been diagnosed with depression. We discovered that FM/CFS negatively impacted both but relatively more self-reported physical than mental health status ( $p \leq 0.017$ ). Compared to women without, women with FM/CFS were more likely to have received reproductive health or sleep-related diagnoses, including premenstrual syndrome, dysmenorrhea, breast cysts, bladder cystitis, sleep apnea, restless leg syndrome, and abnormal leg movements ( $p < 0.0125$ ); expend less than half as many calories per week as control women ( $689 \pm 1293$  vs.  $1499 \pm 1584$  kcal/week,  $p < 0.05$ ); have more sleep pattern difficulties ( $p < 0.0125$ ), more negative changes in sexual function (greater odds for 5 of 10 indicators at  $p < 0.005$ ), and lower alcohol use ( $p \leq 0.05$ ). We concluded that women with FM/CFS deserve careful assessment, especially for reproductive conditions and sleep-related functional disorders and much more study was needed into mechanisms underlying symptoms and ways for alleviating sleep problems, low physical activity levels, and sexual dysfunction (Wilbur, Shaver, Kogan, Buntin & Wang, 2006).

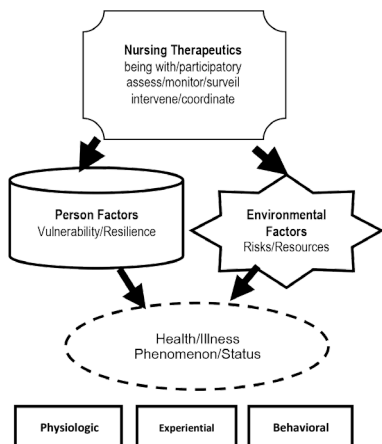
What Did I Learn? Personally and professionally related to my scientist role, I learned to step into the background and coach others based on my experience. From a leadership view, I learned that I embrace change more readily than most and change needs to be paced according to group speed, that I should listen more and talk less, that it helps to put myself in shoes of others, broker dialogues between people that leads to new collaborations and role model what you expect of others. Compared to some other colleagues, I learned that I do not harbor as much 'fear of failure' when addressing given challenges. So to me there is no 'risk' if we can let of the 'fear of failure', it is merely a 'trial' within which we can 'course correct' as we go.

**Now – Travelling with Others and Letting Others Drive:** As I moved into administrative leadership as a Dean, first to U of Illinois at Chicago for 13 years and now at the U of Arizona in my eighth year, my life a scientist is more fully as a mentor and as one who critiques, summarizes or synthesizes the literature, hopefully to help evolve a relevant scientific agenda in women's health, particularly related to sleep quality. As a scientist besides seeking new insights from grass roots studies, I have sought to express ideas about the big picture of what is and what is not known about midlife women and sleep. For *Menopause*, the journal of the North American Menopause Society, thanks to Nancy Woods, I have written editorials for placing the results of single studies published by others with a broader view (e.g., Shaver, 2013). This has been a great heuristic for advancing my thinking beyond my personal studies and about the science quality created by others, how it fits with extant evidence and what would improve and move it forward.

What Did I Discover? Scientifically with respect to sleep in midlife women, I have learned (summarized in *Menopause* as a narrative review) that for women in MT, poor sleep manifests beyond that predicted by general aging but perceptions of sleep are not necessarily translated into detectable recorded sleep features. Not surprisingly, reported sleep has an apparent emotional overlay that influences sleep quality reporting, regardless of underlying physical sleep changes and is poorly explored. Reported sleep quality is expressed by midlife women mostly as wakefulness (waking frequently and not being able to return to sleep easily) and recorded sleep pattern changes usually are not strikingly evident. Recorded sleep shows little extensive sleep loss but some sleep fragmentation – most often evident in the context of hot flash episodes that are sufficiently frequent, severe and bothersome, and especially with a sweating component. The imperfect connection between perceived and recorded sleep adds to the puzzle and could be influenced by inadequate measurement, therefore detection. Studies suffer from poor definition of MT stages, biased samples, non-accounting for sleep-related disorders and sleep-interfering symptoms such as pain, insufficient attention to vasomotor symptoms over day and night and lack of standardized measurement of symptoms and physiologic manifestations. All these elements would best be corrected within future designs (Shaver & Woods, 2015).

What Did I Learn? Personally and professionally, I learned the importance of looking beyond one’s own studies, doing a different form of analysis – the analysis of summary/synthesis, making connections across investigative spheres, using standardized measurement and the limitations of my own powers of analysis. In order to create personalized interventions, I learned that much more work in needed to characterize sub-samples of women (people) according to manifestations of symptoms and varying constellations of contributing factors.

**Fig. 4 Human Health Ecology Framework**



Past working with colleagues at UW and UIC, I have continued to evolve thoughts about a nurse-perspective framework, now explicated as a *Human Health Ecology Framework* (Fig. 4). Framed for person, it could be adapted for systems. Therapeutic dimensions are classed to include: ‘being with’ (participatory for communities or systems), assessing/monitoring (surveil for systems), intervene/coordinate. Interventions could influence person (internal to the person, e.g., beliefs, mood); environmental (e.g., social support, light, ) or both type of factors. Factors underpin mechanisms that explain or predict health/wellness changes may be measured by physiologic probing, self-reporting or behavior assessment. For systems, corollary measures might be database probing, surveying/informant reporting and observing.

**Imagine – New Superhighways:** As I approach the stage of imagining ‘what if’, imagine if I had not taken the administrative curve in the road and continued as an individually active scientist. My obvious next steps would have been to continue



investigation of mechanisms (biopsychosocial) contributing to poor sleep in midlife women but importantly to advance to generating and testing interventions. I have long argued that intervention trials designed as ‘one size fits all’ have proven inadequate (e.g., Shaver, 2010). Building on our descriptive science, warranted would be the testing of a bi-focal intervention for two subtypes of midlife women reporting insomnia. For midlife women who predominantly are emotionally aroused and without excessive, bothersome hot flashes, strategies for dampening that arousal and therefore physiological stress activation might work best while strategies for reducing hot flash activity might be better for women are not as stress aroused but who have bothersome hot flashes with a nighttime sweating component. One can now imagine ongoing generation of more personalized knowledge about treatments by going beyond randomized controlled trials and using designs better suited to explaining variability and designed for individuation of treatment responses, e.g., two-stage partially randomized clinical or preference trials, adaptive designs and comparative effectiveness methods. One can imagine broadening the knowledge of underlying mechanisms through evolving techniques in genetics, various ‘omics’, big data mining, coaching, monitoring, and biobehavioral feedback using e-health technologies and applications, among others. In synchrony with my human health ecology views that emotional arousal and stress physiologic activation are at the root of negative health changes – in no small measure because of stress/immune systems compromise, I certainly endorse the growing emphasis *integrative health/wellness* (complementing conventional biomedical with mindful, energy and other naturalistic therapies). As a discipline, we have been and remain heavily seduced by the dominant biomedical model but the world is tilting toward what we in nursing value as important to health status. The influence of the mind on the body (soma) and the soma on the mind (emotions, cognitions) as affected by environmental (contextual) factors aligns with patient-centered care, whole person care, and our main role as nurses – restoring, promoting or enhancing growth and self-reliance in health-related behaviors – be it at the beginning, in the middle or at the end of life – be it for individuals, families, communities or systems. At the U. of Arizona, I am proud to be part of making *integrative health/wellness* a major focal area, including through the science of several faculty, a website for patient and clinician education about integrative therapies and a first-ever Integrative Nursing Faculty Fellowship, spearheaded by Dr. Mary Koithan, author of the first book on Integrative Nursing published in 2014.

I have come to believe there is not nursing science per se but rather health/wellness-related science that crosses disciplines. However, as nurse cartographers, our design of health-related scientific road maps is shaped by our disciplinary holistic design thinking. Therefore one can imagine all kinds of generative expansion in our quest to integrate person/systems with environmental factors for the sake of helping people or systems survive, thrive and strive for optimal health/wellness (function) in a variety of contexts. For my continuing career and into what my good colleague Angela McBride has called the stage of ‘preferment’ (rather than retirement), I hope to learn more about articulating integrative health-related science in women’s health and sleep, to be more knowledgeably analytical, emotionally intelligent, open to new ideas, present for those with whom I collaborate, and able to coach others toward our preferred future in nurse-generated integrative health/wellness science. Over the span of my career, one does not travel alone and I am very grateful for the ‘roadside assistance’ that I received from so many inspiring nurse and interprofessional faculty and student colleagues.

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**The Carol A. Lindeman Award for a New Researcher Paper**

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**IMPACT OF OPIOID SAFETY INITIATIVES  
IN THOSE AT HIGH RISK FOR  
OPIOID-RELATED PROBLEMS**

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# IMPACT OF OPIOID SAFETY INITIATIVES IN THOSE AT HIGH RISK FOR OPIOID-RELATED PROBLEMS

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In 2014, seventy eight Americans died every day from an opioid overdose, and at least half of these overdose deaths involved prescription opioids<sup>1</sup>. Despite the increased risks associated with high-dose chronic opioid therapy (COT), studies have found that high-dose COT is more common among individuals at higher-risk for opioid use disorder (addiction) and overdose, namely history of mental health conditions, history of alcohol or non-opioid substance use disorders (SUD), concurrent use of sedatives and male gender<sup>2-7</sup>. The term “adverse selection” is used to characterize the prescribing pattern where persons at higher-risk for opioid use disorder and overdose are more likely prescribed high-dose COT<sup>7</sup>. Sullivan (2010) suggested that one possible reason for adverse selection is that higher-risk patients are distressed and express the greatest demands for pain relief and thus are more likely to be prescribed high-dose COT<sup>7</sup>. Dose escalation may also be a response to increasing tolerance over the course of COT, which may be related to risk factors for overdose and addiction. The same influences that cause dose escalation in higher-risk patients could also reduce the likelihood for dose reduction. If so, the potential impact of opioid safety initiatives, including dose reduction, could be overestimated if the highest risk patients were least likely to reduce dose.

This study aimed to determine if the effect of opioid safety initiatives, including dose reduction, had a differential impact on average daily opioid doses in four higher-risk subgroups of COT patients including those with a history of mental health conditions, history of SUDs, concurrent sedative use, and male gender compared to their lower risk counterparts. We hypothesized that dose reduction would be attenuated in those at higher-risk for overdose and opioid use disorder compared to those at lower risk.

## **Methods**

**Setting:** Group Health Cooperative is a consumer-governed, nonprofit integrated health care delivery system in Washington State. Providers in the system deliver care at Group Health’s own facilities which also house integrated pharmacies.

**Population:** Using pharmacy data for filled prescriptions, participants were included in each quarter of the study (3-month calendar window) for which they received  $\geq 70$ -days supply of opioids. Participants also met the following inclusion criteria for each quarter of the study: age  $\geq 26$  years old and at least 12 months of continuous enrollment in the health insurance plan prior to and including the current quarter. Patients with cancer pain or hospice claim were excluded.

**Opioid Safety Initiatives:** A full description of the dose and risk-reduction initiatives from 2008-2014 in the healthcare system has been published<sup>8, 9</sup> and comprised 3 time periods:

- (1) The baseline period from 2006 through 2007 predated any initiatives.
- (2) During the dose reduction period from Jan 1, 2008 through Sept 30, 2010, the group

practice implemented practice guidelines to discourage high-dose COT. Clinicians with large numbers of COT patients on high dose therapy ( $\geq 120$  mg MED daily) received feedback from medical directors.

(3) The multi-faceted risk-reduction period from Oct. 1, 2010 to Sept. 30, 2014 was characterized by increasing frequency of follow-up visits, compliance with state mandated pain specialty consultation for patients on  $\geq 120$  mg MED daily. Modified refill processes and practice tools were also integrated in the electronic medical record.

## Measures

*Average daily morphine equivalent dose (MED).* Using methods and conversion factors described elsewhere<sup>10, 11</sup>, we calculated the average daily MED dispensed to each COT patient in each 3-month window of the study period by summing the expected morphine equivalents per day and dividing by 90 days. Prescriptions in overlapping quarters were counted using the days supplied for each prescription.

*Mental Health Conditions.* We included diagnoses for general mental health conditions from the prior 3 years, i.e. depression, bipolar, anxiety, conversion disorder, somatization disorders, borderline personality disorder and post-traumatic stress disorder<sup>12</sup>, attention deficit disorder, autism, schizophrenia spectrum, dementia or other psychosis<sup>13, 14</sup>.

*Substance Use Disorders (SUD).* Current or recent history of SUD was defined as the presence of a diagnostic code for alcohol or non-opioid abuse/dependence in the prior 3 years.

*Any Sedative Use.* From the AHFS Pharmacologic-Therapeutic Classification system, benzodiazepines and anxiolytics/sedatives/hypnotics were identified<sup>15</sup>. Sedatives were included based on the following criteria: (1) opiate potentiating (additive effect of central nervous system depression with concurrent use of an opiate) (2) likely duration of treatment  $> 1$  week.

*Covariates:* Adjustment variables in all models included: residence (Eastern vs Western WA), Charlson comorbidity score<sup>16</sup> (prior 1 year), age and smoking status (prior 3 years).

## Statistical Analyses

To describe the sample, we presented characteristics of patients overall and by subgroups as of their first eligible quarter. For each longitudinal subgroup analysis, we estimated trends in the average daily opioid dose over time using a separate linear regression model that included main effects for the subgroup of interest (e.g. men v. women), adjustment covariates (including other subgroups) and calendar time (measured quarterly and modeled using linear splines<sup>17</sup> with knots at the first quarter of 2008 and fourth quarter of 2010 to permit different trends across the time periods of interest). Potential differential temporal trends by subgroups were estimated by including model interaction terms between the main effects for the subgroup of interest and the linear spline terms for calendar time. Regression model parameters were estimated using generalized estimating equations (GEE) assuming a working correlation matrix; robust standard errors were calculated via the sandwich estimator<sup>18</sup> to account for within person correlation over time. The adjusted estimates and 95% confidence intervals (CIs) for the change per year in average daily MED ( $\Delta$  mean) were then provided for each subgroup of interest. Age-stratified analyses were performed, not part of primary analyses.

## Results

There were 23,809 COT patients meeting eligibility criteria over the 8.75-year study.

The average number of person-years that any one participant met eligibility criteria for COT use was 2.125 years over the 8.75-year study. As of their first quarter meeting eligibility criteria, the sample was 63.8% women, 47.1% aged 46-64 years and 87.6% resided in Western Washington. Of the high-risk characteristics included, the most common was mental health condition(s) (56.2%), followed by sedative use (32.4%) and SUD (9.9%).

Figure 1 demonstrates the unadjusted trends in average daily MED among higher and lower risk subgroups for each pairwise comparison across all 3 study periods. In all four pairwise comparisons, the higher risk subgroup had a higher average daily MED than the lower risk subgroup across all 3 periods of the study.

Adjusted for covariates, modest differences in the rate of decline in average daily MED per year were noted in all 4 comparisons of higher and lower risk subgroups during the dose reduction period (Table 1). Minimal further dose reductions occurred during the multi-faceted initiatives for all groups.

Age-stratified analyses did not yield substantial differences in average daily dose or rate of dose decline for those aged 26-45 years, and trends in average daily dose for those aged  $\geq 65$  years were relatively stable across all 3 periods of the study.

## **Discussion**

Contrary to our hypotheses, we did not find attenuated dose reduction for COT patients in higher risk subgroups. Average daily opioid doses of COT patients in both higher and lower risk subgroups were reduced with implementation of the opioid safety initiatives. The trends in dose reduction were modestly higher among higher versus lower risk subgroups. This trend could be because COT patients on higher doses were more likely identified on providers' lists of COT patients on  $\geq 120$  mg MED daily during the dose reduction period. Similarly, because of the greater starting doses, higher risk COT patients had a greater potential for dose reduction compared to those at lower risk. The fact that COT dose reductions were observed among individuals more likely to experience opioid use disorders and overdose is a key finding because of the dose-dependent relationship between opioid dose and risk for opioid use disorder and overdose<sup>2-5</sup>.

According to the American Nurses Association, statement on the growing overdose epidemic in the U.S., "although actions to address prescription opioid abuse must target all caregivers, prescribers, and patients, prescribers are the gatekeepers for preventing inappropriate access"<sup>19</sup>. The opioid safety initiatives evaluated in this study were focused on reducing inappropriate prescribing, enhancing patient monitoring and health information technology to support appropriate pain management. By evaluating the effect of opioid safety initiatives, specifically on patients at higher risk for overdose and addiction, this study supports the role of nurse scientists in implementation and evaluation of health policy.

This study had several limitations including that the opioid safety initiatives were implemented in one healthcare system which could affect generalizability. Also we were unable to capture data on those aged 18-25 years because all potential participants had to be at least 18 years old at the start of the study in 2006 to be considered of adult age. Finally, the open cohort design does not provide a means to control for initial



dose at the patient level. This ecological approach, however, is a means to study trends opioid dose in a COT patient population of a large health plan during implementation of clinical policy initiatives which take years to effectively implement and assess their effects.

In summary, practice guidelines along with medical supervision were integral parts of the policy changes that resulted in the greatest decline in COT dosing trends. This study provides evidence for the impact of policy initiatives aiming to promote safe opioid prescribing consistent with the CDC recommendations. Further study is needed to determine whether policy initiatives at the institutional level can reduce high dose opioid prescribing in other healthcare systems.

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Table 1. Estimated change ( $\Delta$ ) per year in average daily opioid dose by high-risk subgroup.

Time period	Gender		Substance use disorders	
	Female $\Delta$ Mean (95% CI)	Male $\Delta$ Mean (95% CI)	No $\Delta$ Mean (95% CI)	Yes $\Delta$ Mean (95% CI)
1: Baseline Jan 2006 - Jan 2008 p-value*	-3.7 (-5.6, -1.9)	-5.3 (-9.4, -1.3)	-3.8 (-5.8, -1.8)	-8.8 (-17.0, -0.6)
	0.479		0.263	
2: Altered prescribing expectations Jan 2008 - Oct 2010 p-value*	-5.9 (-7.0, -4.8)	-8.8 (-10.8, -6.9)	-6.5 (-7.6, -5.5)	-10.7 (-14.9, -6.5)
	<b>0.010</b>		<b>0.064</b>	
3: Multi-faceted initiatives Oct 2010 - Sep 2014 p-value*	-1.3 (-2.1, -0.6)	-1.5 (-2.7, -0.3)	-1.5 (-2.1, -0.8)	-0.8 (-3.4, 1.9)
	0.851		0.635	
Time period	Mental health conditions		Any sedative use	
	No $\Delta$ Mean (95% CI)	Yes $\Delta$ Mean (95% CI)	No $\Delta$ Mean (95% CI)	Yes $\Delta$ Mean (95% CI)
1: Baseline Jan 2006 - Jan 2008 p-value*	-3.7 (-6.5, -1.0)	-5.0 (-7.7, -2.3)	-3.8 (-6.0, -1.6)	-5.3 (-8.6, -2.0)
	0.539		0.456	
2: Altered prescribing expectations Jan 2008 - Oct 2010 p-value*	-5.2 (-6.6, -3.8)	-8.2 (-9.7, -6.7)	-5.8 (-7.0, -4.6)	-9.2 (-11.1, -7.2)
	<b>0.005</b>		<b>0.004</b>	
3: Multi-faceted initiatives Oct 2010 - Sep 2014 p-value*	-1.1 (-2.2, 0.0)	-1.5 (-2.4, -0.7)	-1.3 (-2.1, -0.6)	-1.6 (-2.7, -0.5)
	0.605		0.716	

\*p-values are for test of difference in trends between groups during given time period. Boldface indicates statistical significance ( $p < 0.05$ ) (or appropriate value).

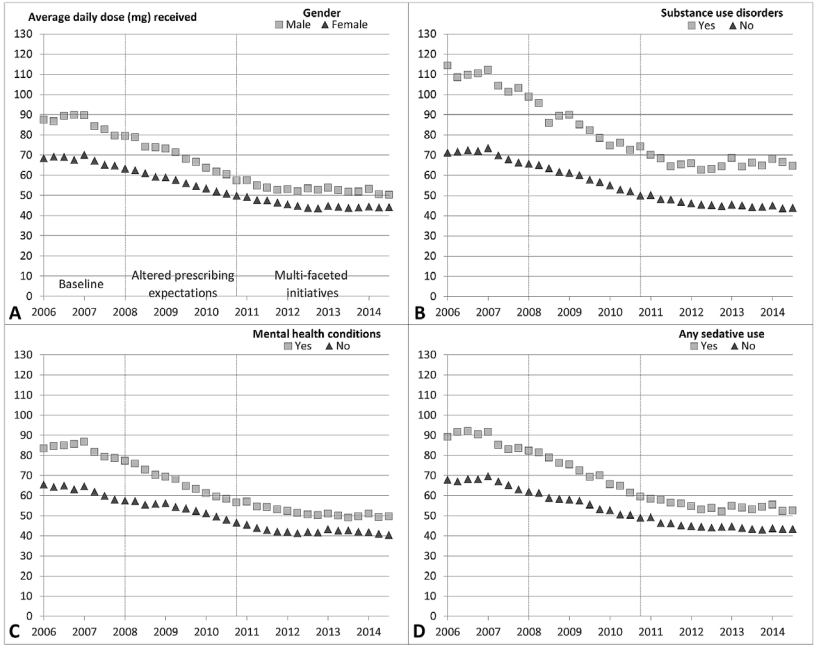


Figure 1. Unadjusted average daily opioid morphine equivalent dose (MED) received among chronic opioid therapy patients stratified by higher and lower risk subgroups across three study periods.

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## Abstract of the Western Academy of Nurses Panel

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### LEADERSHIP IN OMICS EDUCATION, PRACTICE, AND RESEARCH

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Omics is a neologism often used to encompass genomics, epigenomics, transcriptomics, proteomics, metabolomics, exposomics and microbiomics. It is a field of inquiry with potential to exponentially expand understanding of the biology and mechanisms of health, disease, symptoms, and behavior. Experts have recommended the inclusion of omics at all levels of nursing education, particularly in the preparation of nursing scientists. Omics and precision medicine are increasingly targeted for emphasis by major funding agencies and leading nurse clinicians are already incorporating omic knowledge into patient care. *What should be your role in leadership of the omics movement? Does omics have implication for your clinical practice, emerging curriculum, or program of research? What is omics anyhow?* This panel of nursing leaders will define omics as it relates to nursing and provide exemplars of current education, practice, and research based in the omics. In addition, each will project the future of omics in the respective nursing roles of teacher, clinician, and researcher. There will be opportunity for audience participation and discussion.

## **Objectives:**

1. Define the omics terms including genome, transcriptome, proteome, epigenome, metabolome, and microbiome.
2. Describe examples of omics in nursing research, education, and practice.
3. Debate the future implications of omics for education, research, and practice.





**Abstracts of Symposium Presentations**

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**CHALLENGES IN COMBINING SECONDARY  
DATA SOURCES**

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*Moderator:*

*Debra Bakerjian, PhD, APRN, FAAN, FAANP*

*Associate Adjunct Professor*

*Betty Irene Moore School of Nursing*

*University of California, Davis*

*Sacramento, CA*

**OVERVIEW: OVERCOMING CHALLENGES  
IN COMBINING SECONDARY DATA SETS**

*Debra Bakerjian*

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**A PROTOCOL TO LINK VA AND NON-VA HEALTH  
CARE UTILIZATION IN CALIFORNIA**

*Sujuan Cai*

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**CHALLENGES IN EMPLOYING EHR DATA IN A MULTI-SITE  
STUDY OF MATERNAL AND NEWBORN OUTCOMES**

*Barbara Abeling*

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**CHALLENGES IN USING CMS ADMINISTRATIVE DATA  
FOR NP SCOPE OF PRACTICE RESEARCH**

*Debra Bakerjian*

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**CHALLENGES IN COMBINING CLAIMS AND CLINICAL  
DATA SETS TO STUDY ORGANIZATIONAL AND PATIENT  
LEVEL OUTCOMES**

*Madan Dharmar, Debra Bakerjian*

# CHALLENGES IN COMBINING SECONDARY DATA SOURCES

## Overview: Overcoming Challenges in Combining Secondary Data Sets

*Debra Bakerjian, PhD, APRN, FAAN, FAANP*  
*Associate Adjunct Professor*  
*Betty Irene Moore School of Nursing*  
*University of California, Davis*  
*Sacramento, CA*

**Purpose:** The purpose of this symposium is to present four examples of research challenges encountered in the process of conducting secondary data research and to describe solutions that allowed authors to combine disparate data sets in a way that advanced their research.

**Background:** The increasing availability of secondary data in healthcare has enabled researchers' to either find answers to their research question or develop a better informed research study to generate primary data which is both cost and time efficient. This benefit in efficiency comes with a few challenges which any researcher should consider when using secondary data. The foundation of quantitative analysis is to understand how various types of data come together in a data set in order for the information to be analyzed. The most simplified form of this can be found in survey analysis, where the primary authors have control over both the types of questions included but also over the variables chosen for the survey making it relatively clear cut when the data are downloaded and prepared for statistical analysis.

For many researchers, particularly those interested in health services research, the issues of preparing data for statistical analysis are much more complex. This is particularly true when trying to combine data from a variety of sources such as the electronic health record, census data, administrative data, or epidemiological data.

An important skill for many researchers is the ability to use data from multiple sources. This is particularly important in this era of big data.

**Methods/Results:** This symposium will focus on four researchers who each have used a variety of different data sources to conduct their research. The authors will describe their studies, the data sources they used, some of the challenges encountered and how they overcame those challenges in order to prepare their data sets for analysis. Each will provide examples from their experience in analyzing secondary data to advance their research.

**Implications for Nursing:** In this era of secondary big data, it is essential that nurse researchers have the knowledge, skills and ability to take advantage of opportunities to advance nursing research and improve patient outcomes.

# CHALLENGES IN COMBINING SECONDARY DATA SOURCES

## A Protocol to Link VA and Non-VA Health Care Utilization in California

*Sujuan Cai, MSN, FNP-BC, PhD(c)*  
*Doctoral Student*

*Betty Irene Moore School of Nursing*  
*University of California, Davis*  
*Sacramento, CA*

**Purpose/Aims:** To capture both VA and non-VA health care utilization from administrative data in California.

**Background:** Many Veterans, including Veterans with spinal cord injury (SCI), use both Department of Veterans Affairs (VA) and Non-VA health care facilities for primary and specialty care. The process of collecting health care utilization data among Veterans from non-VA health care facilities is extremely challenging due to variability in healthcare data sharing and legal regulations, e.g. HIPAA. However, studies of Veterans' health care utilization excluding non-VA health care data have limited validity and generalizability due to incomplete findings. Fortunately, the California Office of Statewide Health Planning and Development (OSHPD) has collected all inpatient discharges, emergency visits, and other outpatient procedures data from all non-federal health care facilities in California since the 1960s, irrespective of payer sources. This study used a method to link personal identifiers of Veterans with SCI data to OSHPD data to collect the non-VA Emergency Room (ER) visits and hospitalizations to understand the overall utilization of these Veterans in California.

**Method:** A special contractor used patient level variables to combine data from a California VA SCID center to OSHPD data by using a virtual private network to link the data sets. A VA data specialist had previously extracted VA health care utilization (ER visits, hospitalization, clinic visits et al) and demographics. That data was linked to OSHPD data to an encrypted laptop computer. The special contractor is the only person to have access with both data sets. After the linkage, a coded data set was combined with VA health care utilization data for statistical analysis. The study protocol was approved by three separate internal review boards of Stanford University (for the Palo Alto VA), University of California at Davis, and the State of California.

**Results:** A total of 298 Veterans were identified from a VA SCI center as new patients with SCI from 01/01/1999 to 8/27/2014. Among these individuals, 97.7% (291) are male with mean age at injury 57 years (range 19-88); 85% of these are non-Hispanic white (71.1%) and non-Hispanic black (14.1%) and 91.3% have at least high school education. From VA data alone, 39% of the study Veterans had been hospitalized and 16% of those had visited ED at least once during the first year after discharge from their acute rehabilitation. Because the majority (70%) of study Veterans live more than 50 miles from the study VA SCID center, these numbers are expected to increase significantly with the ED visits/hospitalization from the OSHPD data. Non-VA and VA ER visits will be compared on diagnoses and mode to ED. Non VA and VA hospitalizations will be compared on admission/discharge diagnosis, mode and length of admission.

**Implication for Future Research:** This method offers new opportunities to study VA and non-VA health care utilization from administrative and patient level data, which improves the validity and generalizability of the outcomes. This knowledge will improve our ability to estimate the impact of SCI injuries on service utilization, costs, and patient outcomes.

# CHALLENGES IN COMBINING SECONDARY DATA SOURCES

## Challenges in Employing EHR Data in a Multi-Site Study of Maternal and Newborn Outcomes

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*Doctoral Student*

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**Purposes/Aims:** To describe challenges employing a secondary data collection approach in a multi-site study of maternal and newborn outcomes for women with prior cesarean births. To describe strategies utilized to mitigate these challenges, and implications that such challenges and strategies have for future research.

**Rationale/Background:** The EHR is a valuable data source for research and quality improvement endeavors. However, there are many challenges associated with the retrieval, interpretation, and analysis of EHR data. These challenges may undermine the reliability of these data, limiting the strength of studies utilizing these data. Identifying issues and developing methods of improving EHR data quality will increase the quality of studies utilizing such data. Additionally, developing strategies for improving extraction of data from the EHR will allow researchers to conduct large scale, multi-site studies contributing to the advancement of evidenced based practice and healthcare quality improvement.

**Undertaking/Best Practice/Approach/Methods/Process:** EHR data was collected from 11 facilities, which are part of a large California based health system. Multiple enterprise wide data sources were queried. During the data collection process multiple challenges were encountered. These challenges were related to data accessibility, report structure and database query volume restrictions which impacted retrievability of the data. Issues related to the quality of coding data and data from clinical documentation were also identified. As an example, we identified errors in the EHR whereby account numbers dating back to 2009 were listed as the medical record number (MRN) on the standard birth report making it impossible to link the maternal data with the newborn data for these cases.

**Results:** Multiple iterations of report queries and extensive report validation were performed. Relational database and statistical analysis software were utilized to merge, clean, and querying the dataset. This process aided in identifying 22 failed Trial Of Labor After Cesarean (TOLAC) cases which would have been misclassified as Elective Repeat Cesareans (ERCD). We successfully merged variables not contained in coding data, adding maternal BMI and newborn feeding data. We avoided excluding cases missing coding data for gestational age and birth weight by utilizing clinical documentation when coding data was missing. There was a total of 1,297 mothers with prior cesarean births. Mean age was 30 (range 17-46). Among these women 59.8% were low SES. ERCD occurred for 77.3% of the births (n=1003), 19.5% (n= 253) gave birth via Vaginal Birth After Cesarean (VBAC), and 3.2% (n=41) had a Failed TOLAC. Among the newborns, 47.6 were exclusively fed breast milk and 52.4% received formula.

**Conclusions:** The EHR is a rich data source, but has many limitations. This project identified multiple opportunities for improvement in data quality, such as the above mentioned errors in MRNs. The identification of data integrity issues provides health systems and EHR vendors with information to drive improvement in EHR data quality. Collaborations between nurse researchers and informatics experts present opportunities for the identification of issues and development of solutions to improve EHR data quality and accessibility.

# CHALLENGES IN COMBINING SECONDARY DATA SOURCES

## Challenges in Using CMS Administrative Data for NP Scope of Practice Research

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*Associate Adjunct Professor*  
*Betty Irene Moore School of Nursing*  
*University of California, Davis*  
*Sacramento, CA*

**Purposes/Aims:** The purpose of this session is to describe CMS administrative and challenges in combining it with both primary and secondary sources in a study of variation in state scope of practice laws and the impact of regulation on resident outcomes in nursing homes.

**Background:** Multiple studies have indicated that nurse practitioners (NPs) play an important role in meeting the healthcare workforce shortages, yet little is known about how variability in state regulations on scope of practice impacts NPs and there are few studies that use secondary data to examine NP outcomes. The study emphasized the usefulness of administrative data in utilization of nurse practitioners and revealed a variety of limitations in the claims data.

**Methods:** This study used a 5% random sample of nursing home residents in the U.S. obtained from the ResDAC (CMS contractor) consisting of several different types of administrative files. Multiple data sources were used: CMS claims (administrative) data, U.S. Census data, clinician population data from professional websites, diagnoses from the ICD-9 codes, as well as primary variables constructed from data related to state regulations on NP scope of practice derived from “The Pearson Report”, a compilation of NP related data that was published annually until 2011. Because of the cost, the CMS file was a Limited Data Set, which meant that most of the identifiable data had been removed or revised to protect patient privacy. This made analysis much more challenging and limited many of the analyses. One example was the necessity to write syntax to group all of the diagnostic codes.

**Results:** The CMS dataset was organized by visits with 1,110,050 separate visits identified. The data was reorganized to examine patient (129,812) to find that many of the patients were visited by both physicians and NPs. By aggregating the data to have clinicians the unit of analysis, there were 35,735 primary care physicians and 5,346 NPs in this 5% sample; however, NPs tended to provide more comprehensive visits and NPs averaged more visits annually compared with physicians (32.71 vs 20.82). Internists provided 38% of visits, family practitioners 22% and NPs 16%. Geriatricians (4% of all physicians) accounted for only 2.6% of NH visits. There were huge variabilities in the outcomes by geographic region for NPs with the highest utilization of NPs in the Midwest followed by the South and lowest in the western states attributed to the scope of practice variations. Challenges in working with these data sets included limitations in the ability to link specific clinicians and NHs together, inability to identify state specificity because of lack of zip code data, and the need to develop new variables related to NP scope of practice.

**Implications for Future Research:** There are many types of CMS data made available to researchers. These data are excellent for most health services research; however, there are several limitations to how the data can be used to study NPs. Sharing methods in how to link data will help future researchers to expand on these studies.

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**Funding:** The original study was funded by the John A Hartford Foundation and Atlantic Philanthropies Foundation.

# CHALLENGES IN COMBINING SECONDARY DATA SOURCES

## Challenges in Combining Claims and Clinical Data Sets to Study Organizational and Patient Level Outcomes

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FAANP, Associate Adjunct Professor  
Betty Irene Moore School of Nursing  
University of California, Davis  
Sacramento, CA*

**Purposes/Aims:** The purpose of this session is to describe administrative data available from CMS, how it has been used, challenges of reorganization of data across various units of analyses, and describe how such data can be linked with other outside data sources used in the study to understand the role of nurse practitioners in improving quality outcomes in skilled nursing facilities.

**Background:** The acuity and complexity of the nursing home (NH) population has steadily increased over the past decade and has outpaced the availability of primary care providers to care for this group of vulnerable older adults. At the same time, there has been an intense focus on the cost of emergency room (ER) care and hospitalization of older adults residing in NHs. CMS has placed significant incentives to reduce the number of ER visits and hospitalizations of this population.

NPs are important in caring for this population, yet little was known about how NPs providing care for NH residents impact hospitalizations and ER visits. This study used CMS administrative data sets, available from ResDAC (CMS contractor), to understand how NPs impact care for NH residents.

**Methods:** The 5% Research Identifiable Files (RIF) from the Chronic Condition Warehouse were used for this study. Files from the carrier claims files, inpatient, and outpatient data sets along with resident-level minimum data sets were purchased. The challenge was to combine variables from the distinct data files into a single data set for analysis. There were many challenges in first compiling a usable data set for this study and then re-aggregating the data to reflect three different unit of analyses. Specific processes of how to combine various organizational and patient level data sets will be described and challenges and solutions will be discussed.

**Results:** There were 187,789 residents representing a 5% random sample of all U.S. NH residents. There were 127,344 (67.8%) that had visits by primary care physicians and/or nurse practitioners. We were able to identify NH and ED visits and acute hospitalizations relatively easily; however, it was more challenging to determine ways to link the resident level outcomes with specific clinician types.

Processes were developed to first identify the right variables to include in the data set using the data dictionaries available and then link the clinician data were challenging as many variables seemed to be similar or even the same in each of the different data sets, requiring extensive time and research to ensure they were either the same or were distinctly different.

**Implications for Future Research:** In this era of secondary big data, the of use such administrative datasets and linking with other data sources to examine organizational, clinician and resident level factors and its impact on patient outcomes is essential in understanding the complete picture to develop intervention that can impact outcomes. Researchers, particularly educators, should widely share their processes and lessons learned in working with large data sets with others to build a future nursing leadership that can leverage the benefits of secondary data to advance nursing knowledge.

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**Funding:** This study has been funded by the Gordon and Betty Moore Foundation.

## Abstracts of Symposium Presentations

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# CUPID TECHNICAL INNOVATIONS AND PRECISION NURSING

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*Moderator:*

*Karen H. Sousa, PhD, RN, FAAN*

*Professor; Director, CCNR*

*College of Nursing*

*University of Colorado Denver*

*Aurora, CO*

### OVERVIEW: CUPID TECHNICAL INNOVATIONS AND PRECISION NURSING

*Karen H. Sousa, Jason Weiss*

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### OVERVIEW OF THE CUPID PRECISION NURSING PROJECT

*Blaine Reeder, Mustafa Ozkaynak*

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### USING CUPID DATA TO INFORM NURSING INNOVATIONS

*Mustafa Ozkaynak, Angela Richard*

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### USER-DRIVEN ANALYTICS: CUPID DATA ANALYSIS AND VISUALIZATION

*Eric Gutierrez, Sarah Schmiede, Karen H. Sousa*



# CUPID TECHNICAL INNOVATIONS AND PRECISION NURSING

## Overview: CUPID Technical Innovations and Precision Nursing

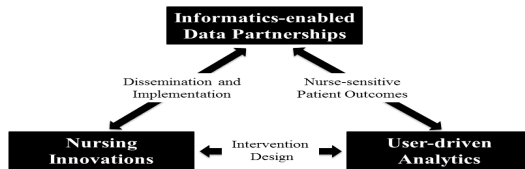
Karen H. Sousa, PhD, RN, FAAN  
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In response to Institute of Medicine recommendations that nurses both become more involved in making changes to the health care system and use data more effectively, the Colorado Collaborative for Nursing Research (CCNR) has developed the **Common Unified Patient Indicator Data (CUPID)** system and the **Precision Nursing Triangle**.

CUPID is a CCNR initiative that (a) isolates and extracts nurse-sensitive patient outcome data collected in the electronic health record (EHR); (b) aggregates, harmonizes (i.e., creates uniform nomenclature), analyzes, and distributes data in user-friendly reports to nurse leaders; and (c) facilitates use of trending nurse-sensitive patient outcome data to inform/evaluate nursing interventions and/or processes of care in near-real-time. Initial efforts to develop the CUPID system were supported by AHRQ funding (4U18HS022789-03), resulting in codification of governance processes, creation of a common data model, definition of data-mapping procedures, and implementation of a pilot demonstration using one month of patient pain data from six participating hospitals in two healthcare systems.

CUPID and CUPID-oriented research projects contribute to a *Precision Nursing* construct. Precision nursing is an approach to improve patient outcomes through personalized nursing care that relies on data partnerships, informatics, and analytics to drive nursing innovations.



The Precision Nursing Triangle (Figure 1) is an organizing framework for the Precision Nursing construct.

Dr. Blaine Reeder’s presentation is titled, “Overview of the CUPID Precision Nursing Project.” He will discuss CUPID technical innovations and introduce the individual elements of the Precision Nursing Triangle, focusing in particular on the *Informatics-enabled Data Partnerships* point of the Triangle.

Next, Drs. Mustafa Ozkaynak and Angela Richard will present “Using CUPID Data to Inform Nursing Innovations.” They will discuss ways in which the CUPID system and CUPID data can support workflow- and quality improvement-related *Nursing Innovations*, which is the second point in the Precision Nursing Triangle.

Finally, Research Assistant Eric Gutierrez will present “User-driven Analytics: CUPID Data Analysis and Visualization.” He will cover the third point in the Precision Nursing Triangle, *User-driven Analytics*, and discuss ways that the CUPID team is producing user-friendly visualizations of trending monthly data for maximum ease-of-use by stakeholders.

# CUPID TECHNICAL INNOVATIONS AND PRECISION NURSING

## Overview of the CUPID Precision Nursing Project

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**Aim:** To describe the precision nursing triangle and technical innovations resulting from the Common Unified Patient Indicator Data (CUPID) project.

**Background:** *Precision Nursing* is a concept that emerged through our work on the CUPID project (Sousa, K. H., Weiss, J., Welton, J., Reeder, B., & Ozkaynak, M., 2015). We first started using this term in the autumn of 2013. The precision nursing concept is also being developed, independently and in parallel, by several of our colleagues (*Nursing Knowledge: 2016 Big Data Science Conference Proceedings*, 2016). The primary goal of the CUPID project is to link tailored nursing interventions to patient outcomes such as symptom status based on user-driven analysis of electronic health data. To support this effort, we developed the *Precision Nursing Triangle* as an organizing framework comprising three components: Informatics-enabled Data Partnerships, User-Driven Analytics, and Nursing Innovations.

**Outcomes:** Informatics-Enabled Data Partnerships. Precision nursing relies on relationships with partners who generate and manage nurse-sensitive patient data by defining governance policies and negotiating data use agreements. Currently, we maintain data partnerships with hospital research partners, but future work will include relationships with post-acute care organizations. Data partnerships are developed and maintained through continuous trust-building and by identifying use cases of value to data partners. “Informatics-enabled” denotes the central place of informatics in any precision nursing effort. User-Driven Analytics. Precision nursing focuses on creating value for data partners. The motivation is “What do you want to do that you cannot currently do with your data?” The second component of the precision nursing triangle is the use of user-centered design iterations to identify requirements for system features, interfaces, and visual displays of data. Nursing Innovations. Intervention design efforts can be human factors engineering to understand clinical workflow challenges and design efforts to optimize information systems. Or, efforts could take the form of practice changes on individual units or policy changes at the organizational level. Different intervention design efforts are non-exclusive of each other, complementary, and data-driven based on findings from the precision nursing indicators.

**Conclusion:** Challenges of Traditional Data Approaches. Traditional efforts that perform retrospective analysis of nurse-sensitive patient outcomes using EHR data through one-time data transfers can be considered precision nursing efforts. This approach involves both data partnership and informatics aspects, however efforts are not easily replicable because they do not 1) provide infrastructure that supports access and control defined by governance policies and data use agreements, and 2) enable timely analysis of data based on emerging needs. CUPID Technical Innovation. The primary innovation of the CUPID precision nursing system is that it relies on a federated data architecture (PopMedNet software) that sends targeted queries directly to data partner clinical data marts, maps query results to a common data model, and returns them to the investigator for analysis after query approval by the data partner. This innovation is a step forward in technology-supported data partnerships that build trust, provide research infrastructure, and can be extended to new patient outcome cases as they are prioritized by clinicians and health care organizations.

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Sousa, K. H., Weiss, J., Welton, J., Reeder, B., & Ozkaynak, M. (2015). The Colorado Collaborative for Nursing Research: Nurses shaping nursing's future. *Nursing outlook*, 63(2), 204-210.  
*Nursing Knowledge: 2016 Big Data Science Conference Proceedings*. (2016, June 1-3, 2016). Nursing Knowledge: 2016 Big Data Science, Minneapolis, MN.

# CUPID TECHNICAL INNOVATIONS AND PRECISION NURSING

## Using CUPID Data to Inform Nursing Innovations

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*Angela Richard, PhD  
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Aurora, CO*

The purpose of this presentation is to discuss several ways that data from the Colorado Unified Patient Indicator Data (CUPID) system can be used by participating hospitals and illustrate how it might work using a case study. CUPID data can be used to inform and stimulate nursing innovations in three ways that we will discuss here.

First, the data can be used to pinpoint problem areas (e.g., specific care units with poor symptom management performance) for hospital-specified quality indicators that are sensitive to nursing care.

Second, the data can reveal user needs (e.g., usability issues of EHR).

Third, innovations put into place to improve care delivery or system effectiveness can be evaluated by monitoring CUPID data (e.g., whether pain management/pain scores improved after implementation of a given innovation).

The pinpoint ability of CUPID allows for rapid identification of needs, based on trend analysis and data reports. Using existing or enhanced quality improvement teams, root causes of problems can be explored and rapid-cycle PDSA (Plan, Do, Study, Act) quality improvement efforts put into place. The complex-analytics abilities of our Precision Nursing Triangle make sure that changes in any component of a work system (i.e., personnel, personnel activities, and physical/organizational context and technologies) are congruent with other systemic components. CUPID data can be used (a) to evaluate the effectiveness of innovations as part of the PDSA cycle and (b) to track how well innovations are sustained and have longer-term impacts on outcomes. Moreover, CUPID gives flexibility and agility in redesigning work systems so that changes do not have unintended consequences.

A case study will be used to illustrate the potential use of CUPID data for both identifying the need for innovations and evaluating those innovations on a hypothetical oncology unit. The hypothetical unit receives a CUPID report that shows lower than desired rates of improvement in pain for patients between unit admission and unit discharge. The unit initiates a multi-disciplinary approach to identify root causes for low rates of improvement in pain across the care episode and identifies two key areas for innovation and care improvement: overall pain assessment and timely evaluation of pain intervention effectiveness. The case study will describe innovative and evidence-based approaches to address the key areas and the use of ongoing CUPID reports for continuing evaluation of the effectiveness of the innovations on pain improvement rates.

In summary, CUPID data is a powerful tool that hospitals can use to identify areas for improvement, optimize use of technology, maximize utility of existing EHR data, and support the development and implementation of nursing innovations. Moreover, nurse scientists can benefit from CUPID by having access to a high volume of high quality data specific to their research questions. The capacity to monitor patient outcomes allows them to be agile in designing, implementing, and evaluating evidence-based interventions.

# CUPID TECHNICAL INNOVATIONS AND PRECISION NURSING

## User-Driven Analytics: CUPID Data Analysis and Visualization

*Eric Gutierrez  
Research Assistant*

*Center for Research and Nursing Scholarship*

*Sarah Schmiede, PhD  
Associate Professor*

*Karen H. Sousa, RN, PhD, FAAN  
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**Background:** The primary objective of precision nursing is to identify opportunities for interventions based on user-driven analysis of near-real time data. The second component of the precision nursing triangle is the use of user-centered design iterations to identify requirements for system features, interfaces, and visual displays of data.

**Purpose:** The purpose of the CUPID system is to support precision nursing by providing infrastructure that enables intervention research at the patient and organizational levels through timely access to patient outcomes data mapped to a common data model. The purpose of this presentation is to demonstrate CUPID's ability to produce user-friendly visualizations of trending monthly data for maximum stakeholder ease-of-use.

**Methods:** Pain scores were chosen as the test case for this current analysis because the Joint Commission (2016) mandates that hospitals develop policies and procedures for assessment/reassessment of pain. This mandate maximizes the likelihood that pain scores appear consistently in the electronic health record (EHR). The participating acute care units are located throughout the state of Colorado: University of Colorado Hospital (620 beds), Medical Center of the Rockies (166 beds), Memorial Hospital Central (427 beds), Memorial Hospital North (74 beds), and Poudre Valley Hospital (241 beds). Their average number of inpatient admissions are as follows: UCH—46,351; MHC—20,544; MHN—6,478; PVH—18,149; and MCR—12,550. The total number of inpatient admissions for the entire network was 104,072 based on the fiscal year ending June 30, 2015. The total number of appropriate units for this study within each facility is as follows: UCH—32; MHC—9; MHN—2; PVH—8; and MCR—9.

**Results:** Several data processing and quality checks were conducted prior to carrying out the analysis. We assessed data quality from recurring monthly EHR data feeds for data completeness and compared differences between similar units within and across hospitals. Data was cleaned using a data quality framework originated by informatics colleagues at the University of Colorado | Anschutz Medical Campus (Kahn et al., 2012) and validated by members of our research team (Dziadkowiec et al., 2016). Data will be checked for normality and screened for errors and outliers. EHR elements will be examined for level and patterns of missing data. SAS Version 9.4 and Mplus Version 7.4 was used for all statistical analyses. Both programs include capabilities to test models with missing data and non-normally distributed/categorical outcomes, and to address the multilevel structure of the data of patients nested within units/hospitals. Additionally, Tableau Software (<http://www.tableau.com>) provided the CUPID team with a variety of data visualization capabilities which will be demonstrated.

**Implications:** CUPID facilitates evaluation of interventions in weeks or months rather than years. CUPID offers timely, trending data that allow nurse leaders to be agile and responsive to fluid conditions. In turn, CUPID health IT infrastructure allows nurse leaders to institute best practices, make data-driven choices, and optimize patient outcomes.



## Abstracts of Symposium Presentations

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### THE EASTERN EUROPE NURSES' CENTER OF EXCELLENCE FOR TOBACCO CONTROL

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*Moderator:*

*Stella A. Bialous, RN, DrPH, FAAN  
Associate Professor  
UCSF School of Nursing  
San Francisco, CA*

#### OVERVIEW: THE EASTERN EUROPE NURSES' CENTER OF EXCELLENCE FOR TOBACCO CONTROL

*Stella A. Bialous, Linda Sarna, Marjorie Wells*

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#### EVERYONE NEEDS A BREATH OF FRESH AIR: WORKPLACE IMPACT ON NURSES' SMOKING BEHAVIORS

*Anne Berit Petersen, Linda Sarna, Marjorie Wells,  
Mary Rezk-Hanna, Iveta Nohavova, Stella A. Bialous*

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#### SMOKING AMONG CENTRAL AND EASTERN EUROPE NURSES: INSIGHTS INTO RELAPSE TRIGGERS

*Mary Rezk-Hanna, Linda Sarna, Marjorie Wells,  
Anne Berit Petersen, Iveta Nohavova, Stella A. Bialous*

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#### EASTERN EUROPEAN NURSES' ATTITUDES TOWARD TOBACCO CESSATION INTERVENTIONS

*Marjorie Wells, Stella A. Bialous, Linda Sarna, Jenny K. Brook, Iveta Nohavova*

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#### INCREASING NURSES' SMOKING CESSATION INTERVENTIONS IN 5 COUNTRIES

*Stella A. Bialous, Marjorie Wells, Jenny K. Brook, Iveta Nohavova, Linda Sarna*

# THE EASTERN EUROPE NURSES' CENTER OF EXCELLENCE FOR TOBACCO CONTROL

## Overview: The Eastern Europe Nurses' Center of Excellence for Tobacco Control

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*Linda Sarna, RN, PhD, FAAN*  
*Interim Dean & Professor*  
*Lulu Wolf Hassenplug Endowed Chair*  
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Tobacco use is the leading cause of preventable disease and death in Central and Eastern Europe. The purpose of this symposium is to describe the establishment of the Eastern European Centre of Excellence for Nurses and Tobacco Control, a 6-country collaboration. Central and Eastern Europe were targeted due to a high prevalence of smoking among the population, and higher rates of tobacco-related disease and mortality, compared with Western Europe. Additionally, there was a high level of interest among healthcare provider leaders in mobilizing nurses for tobacco control. The partnership involved nurses and nurse researchers in the United States, and other healthcare professionals, in Czech Republic, Hungary, Romania, Slovakia, and Slovenia. The Center is located in Prague, built upon previous research collaborations in the Czech Republic. The rationale for developing a Center of Excellence was to: 1) build capacity among nurses in the region to engage in tobacco control; 2) expand regional collaboration, fostering the discussion of regional similarities and differences; and 3) facilitate mentoring and technical support within and between nurses in the region. The RE-AIM framework (Reach Effectiveness Adoption Implementation Maintenance) guided the development, implementation and evaluation of the Center's activities and strategies. Ultimately, the goal was to maintain a network of nurses educated to be engaged in tobacco control, improve attitudes and increase the delivery of tobacco dependence treatment by nurses. It is well documented that nurses who smoke are less likely to engage in tobacco control. Given the reported high prevalence of tobacco use among nurses in the region (20-40%), focus groups were conducted in each county to understand possible barriers to nursing engagement in tobacco control, as well as suggest strategies to support nurses in their own quit efforts. In order to reach and expand the number of nurses in tobacco control, a multi-strategy was employed: train-the-trainer workshops, brief hospital-based seminars, and two distance learning web-based programs (on nurses and evidence-based tobacco dependence treatment, and smoking cessation in oncology settings). Resources were developed in all 6 languages (web-based, printed, toolkit provided in the workshops). A quarterly newsletter was produced to facilitate exchange of experiences between members of the team and to outreach to the nursing community at large. Each component was evaluated separately and results will be presented in this symposium. An important development through the establishment of the Center of Excellence was the identification of country and regional nurse champions who are being mentored by the more senior members of the team and becoming mentors themselves. As will be discussed in the symposium, the Regional Center of Excellence emerged as a positive model to promote excellence in nursing practice in tobacco control and to support the establishment of a regional network of nurses engaged in tobacco control. Based on WHO cessation estimates, if each of the 2,000 nurses, directly reached by this project, intervened with only one patient a month, at least 24,000 people would receive advice to quit, 9,600 would make quit attempts, and 3,120 additional smokers would quit every year.

**Funding:** Support was provided by a grant from the Bristol-Myers Squibb Foundation Bridging Cancer Care Initiative to the International Society of Nurses in Cancer Care, and the UCLA School of Nursing's Hassenplug Endowed Chair. The content is solely the responsibility of the authors and does not necessarily represent the official views of the funders.

# THE EASTERN EUROPE NURSES' CENTER OF EXCELLENCE FOR TOBACCO CONTROL

## Everyone Needs a Breath of Fresh Air: Workplace Impact on Nurses' Smoking Behaviors

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**Background:** Globally, nurses represent the largest group of healthcare providers and evidence indicates that nurse-led smoking cessation interventions can be effective in helping smokers quit. Yet, it is also well established that nurses who smoke, like other health professionals, are less likely to address tobacco dependence with their patients than their non-smoking colleagues. Therefore, in order to strengthen the nursing profession's ability to impact the prevention and treatment of tobacco-induced diseases, it is imperative to understand the factors associated with nurses' continuing smoking and barriers to quitting. Several U.S. based studies have increased understanding of nurses' smoking behaviors and have helped inform the development of contextualized treatment programs and workplace policies that support nurses' quitting. However, very little is known as to how these findings compare with nurses' experiences in other settings globally. Europe continues to have the highest prevalence of adult (28%) and female smoking (19%) globally, and in Eastern and Central Europe evidence suggests that nurses' rates of smoking are comparable and in some cases even higher (up to 2X in some countries) than that of the general female populations.

**Purpose of Study:** To describe institutional and workplace factors that influence nurses' smoking and quitting behaviors in this region.

**Methods:** Focus groups ( $N = 9$ ) were conducted in five countries (Czech Republic, Hungary, Romania, Slovakia, Slovenia) among nurses who are currently involved in direct patient care and self-reported as being a current or former smoker. Native-speaker facilitators conducted the focus groups in the respective languages, utilizing a structured focus group guide. The discussions were recorded, transcribed, translated into English, and transcript samples were back-translated to verify quality of translation. Transcripts were loaded in Dedoose, a cloud-based qualitative research platform, coded by two independent coders, after which a subset of the transcripts were re-coded by four team members to evaluate agreement. Consistency and discrepancies were discussed in an iterative process to establish to the final codebook. Content analysis was used to identify major themes.

**Results:** The participants' ( $n=81$ ) mean age was  $43(\pm 9.4)$  years, and the majority were female (94%), current smokers (56%) and experienced nurses ( $20.5[\pm 10.3]$  mean practice years). Five major themes emerged during the discussions related to smoking and the workplace: 1) Ability to take breaks, 2) Coping with job-related stress, 3) Hiding from patients and their families, 4) Impact of workplace smoking restrictions, and 5) Lack of support for quitting.

**Discussion:** The workplace and institutional factors influencing nurses' smoking behaviors described in this study closely mirror those found previously among U.S. nurses, particularly in regards to the inequities in work breaks between smokers and nonsmokers (smokers taking more breaks) and the role these breaks play in the initiation, maintenance and relapse of smoking among nurses. The findings also provide further insight into the unintended consequences of workplace smoke-free policies for both smokers and nonsmokers.

**Implications:** These findings offer guidance to administrators and provide contextualized support for implementation of workplace policies and programs that support quitting and equitable work breaks for all nurses.

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**Funding:** Support was provided by a grant from the Bristol-Myers Squibb Foundation Bridging Cancer Care Initiative to the International Society of Nurses in Cancer Care (ISNCC), the UCLA School of Nursing, and a National Cancer Institute training grant (Petersen; T32CA113710). The content is solely the responsibility of the authors and does not necessarily represent the official views of the funders.



# THE EASTERN EUROPE NURSES' CENTER OF EXCELLENCE FOR TOBACCO CONTROL

## Smoking among Central and Eastern Europe Nurses: Insights into Relapse Triggers

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**Background:** According to the World Health Organization, over 1 billion people are addicted to tobacco smoking. In Eastern Europe, smoking is a major contributor of all cause mortality, with an estimated 25-35% in the general population. Among the predominantly female nurse groups, the overall smoking prevalence is equal or higher than the general female populations. Nurses who smoke are less likely to provide smoking cessation interventions to their patients. While studies demonstrate that smoking cessation is a process involving a sequence of unsuccessful quitting attempts before attaining long-term abstinence, only 3-5% of unaided-quitters achieve long-term abstinence for 6-12 months. There is limited information about nurses' quit efforts in Eastern Europe. To assist nurses with smoking cessation, an in-depth understanding of their smoking behaviors is imperative.

**Purpose:** The objective of this study was to explore European nurse smokers' attitudes and experiences toward smoking cessation, including factors that may influence relapse after a quit attempt.

**Methods:** Nine focus groups were conducted in five countries (Czech Republic, Hungary, Romania, Slovakia, Slovenia). Current or former nurse smokers were included. Using a moderator guide, focus groups, conducted by a native-speaker facilitator, were audiotaped, transcribed and translated verbatim to English. Transcripts were uploaded into Dedoose qualitative analysis software and content analysis was used to identify major themes. Two investigators independently read each transcript, identified themes and assigned codes. Coding agreement was assessed by having two additional members re-code subsets of the transcripts. This paper reports analyses regarding factors influencing smoking relapse.

**Results:** The sample included 81 nurses (43±9 years old, mean±SD; 94% women) who were directly involved in patient care (20±10 practice years). Fifty-six percent were current smokers and 83% reported smoking daily. Relapse was identified as one of the major findings. Four common themes contributed to nurses' smoking relapse: (1) Stressful environments: home, work; (2) Exposure to smoking cues: coffee, smell of cigarettes; (3) Presence of smokers' in the environment: spouse, work colleagues and during social situations; and (4) Postpartum period. When asked about time to first cigarette after waking: 57% reported ≤ 30 minutes, indicating serious addiction. Forty-six percent reported making 1.07±2.26 serious quit attempts in past 12-months and while 33% were trying to quit at the time of the focus groups, they expressed lacking adequate training and resources.

**Discussion:** European nurse smokers' struggles with relapse parallel those previously reported with U.S. nurse focus groups and others in the general population and across the world. Among the several relapse models proposed to explain underlying triggers, the cognitive-behavioral model of relapse suggests that the process of relapse is precipitated by a high-risk situation, defined as any circumstance presenting vulnerability for engaging in a behavior. Our findings demonstrate: stressful environments, smoking cues, presence of smokers and postpartum as factors triggering relapse among European nurses. Future studies should focus on developing programs and interventions that: (1) Enhance nurses' skills for coping with high-risk situations triggering relapse; and (2) Implement evidence-based practice to support nurses' quit efforts and maintain long-term abstinence, thereby increasing interventions with patients who smoke.

**Funding:** Support was provided by a grant from the Bristol-Myers Squibb Foundation Bridging Cancer Care Initiative to the International Society of Nurses in Cancer Care and the UCLA School of Nursing. The content is solely the responsibility of the authors and does not necessarily represent the official views of the funders.

# THE EASTERN EUROPE NURSES' CENTER OF EXCELLENCE FOR TOBACCO CONTROL

## Eastern European Nurses' Attitudes toward Tobacco Cessation Interventions

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**Background:** Tobacco use is the leading cause of preventable disease and death in Europe. Compared to Western Europe, rates of tobacco use are higher in Central and Eastern Europe. Nurses can contribute to decreasing the burden of tobacco use in the region by engaging in tobacco control and offering patients who smoke evidence-based tobacco dependence treatment. However, little is known about 1) nurses' attitudes and opinions about tobacco control; 2) nurses' perceptions of their role in providing tobacco cessation interventions; and 3) if nurses' attitudes influence their clinical practice. We postulated that online education could successfully educate nurses about evidence-based smoking cessation interventions and positively change their attitudes towards tobacco control, thus increasing the likelihood that nurses will provide tobacco cessation interventions to their patients.

**Aims:** To 1) determine if, and how, nurses in Czech Republic, Hungary, Romania, Slovakia, and Slovenia, participating in a web-based education program, positively change their attitudes and opinions toward helping smokers quit and tobacco control, and 2) determine if changes in attitudes and opinions influenced self-reported clinical practice.

**Methods:** A prospective single-group pre-post design was employed. A web-based survey assessed nurses' knowledge, attitudes, and opinions about helping smokers quit before and 3-months after viewing two educational webcasts. The surveys included an attitudes scale rating the importance of statements about tobacco control (e.g. How important is it for nurses to be involved in tobacco control activities?) using a 5-point Likert scale ranging from 'least importance' to 'most importance'. The educational intervention consisted of a 45-minute webcast about helping smokers quit, and a 30-minute webcast about the role of nurses in helping patients with cancer to quit smoking. Additional online resource materials to support nurses in helping smokers quit were also available to download.

**Outcomes:** 507 nurses from the five countries completed the baseline and follow-up-surveys. Participants were mostly female (95.9%), never smokers (60.7%) and worked in medical/surgical, outpatient, or critical care (74%). At 3-months, nurses significantly improved their views about the importance of nursing involvement in tobacco control ( $p=0.002$ ), felt that nurses should set a good example by not smoking ( $p=0.03$ ), and that they need more training/skills to help patients quit smoking ( $p<0.0001$ ). Nurses whose attitudes positively changed about the importance of nurses participating in tobacco control activities, also reported increasing tobacco cessation activities with patients, i.e., assisting patients to quit ( $p<0.001$ ), referring patients for cessation treatment ( $p<0.001$ ), referring patients to a quitline ( $p<0.01$ ), and recommending the use of tobacco cessation pharmacotherapy ( $p<0.01$ ).

**Conclusions:** Nurses' participation in the program led to increased awareness of, and positively changed attitudes toward, the importance of nurses in helping smokers to quit. Additionally, their improved attitudes toward tobacco control had a significant positive impact on practice. Nurses reported needing more education and skills on tobacco control and cessation interventions. Therefore, nursing schools and health systems should take notice, including this content in their curricula, and adopting the concept that delivering evidence-based smoking cessation interventions is an expected part of routine nursing care.

**Funding:** Supported was provided by a grant from the Bristol-Myers Squibb Foundation Bridging Cancer Care Initiative to the International Society of Nurses in Cancer Care and the UCLA School of Nursing's Lulu Wolf Hassenplug Endowed Chair. The content is solely the responsibility of the authors and does not necessarily represent the official views of the funders.

# THE EASTERN EUROPE NURSES' CENTER OF EXCELLENCE FOR TOBACCO CONTROL

## Increasing Nurses' Smoking Cessation Interventions in 5 Countries

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**Background:** Nurses can play a pivotal role in reducing the suffering, disease and mortality burden associated with tobacco use. Evidence based interventions exist and are based on a framework known as the 5As: Ask about tobacco use, Advise users to quit, Assess willingness to quit, Assist with a quit plan and Arrange for follow-up, including referral to a quitline when available. However, there are often gaps in nurses', as well as other healthcare professionals', education on evidence-based tobacco dependence treatment. As tobacco use is the leading cause of preventable death in Central and Eastern Europe, providing nurses with educational opportunities to address smoking among their patients is essential to enhance nurses' engagement. The *Eastern Europe Nurses' Centre of Excellence for Tobacco Control* is a partnership of 5 countries (Czech Republic (CZ), Hungary (HU), Romania (RO), Slovakia (SK), Slovenia (SI)) and the United States was established to meet the educational needs of nurses in the region and support their engagement in tobacco control.

**Aims:** To assess 1) the feasibility of an online education program about tobacco control to prepare nurses in CZ, HU RO, SK, and SI to provide evidence-based smoking cessation interventions to patients; and 2) the self-reported changes in practices related to consistently (usually/always) providing smoking cessation interventions, based on the 5As, to smokers, before and 3-months after participation in the online program. The RE-AIM framework was used to guide the development, implementation and evaluation of the program.

**Methods:** A prospective single-group pre-post design using a web-based survey to assess self-reported practices in smoking cessation interventions.

**Results:** 695 nurses completed the baseline survey and 507 completed the follow-up. Analyses were based on the latter. Participants were mostly female (95.9%), never smokers (60.7%) and worked in medical-surgical clinics (45%). At 3 months, there was an increase self-reported delivery of all aspects of the 5As. At 3 months, nurses were significantly more likely to perform all of the 5As except for "Ask" ( $p < 0.05$ ). At 3-months there was a significant increase in the number of patients nurses estimated they had provided cessation interventions ( $p < 0.0001$ ). 85.8% of nurses stated that they did watch the webcasts and of those, the majority (98.1%) found it to be useful or very useful.

**Discussion:** Online education was a feasible and successful way to educate nurses about evidence-based smoking cessation interventions. Their participation in the program led to increased self-reported interventions with patients. Additional research is needed to examine the sustainability of the impact in nursing practice.

**Implications for Practice:** Education about tobacco control can make a difference in clinical practice, but ongoing support is needed to maintain these changes. Health systems changes can also facilitate the expectation that delivering evidence-based smoking cessation interventions should be routine nursing care. Educating nurses on cessation interventions and tobacco control is pivotal to decrease tobacco related disparities, disease, and death. Online methods provide an accessible way to reach a large number of nurses.

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## Abstracts of Symposium Presentations

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### **EMERGING RESEARCH: FILLING THE GAPS IN ACUTE CARE NURSE PRACTICE ENVIRONMENT RESEARCH**

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*Moderator:*

*Martha L. Grubaugh, RN, MS, NE-BC*

*PhD Student*

*College of Nursing*

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#### **OVERVIEW: EMERGING RESEARCH: FILLING THE GAPS IN ACUTE CARE NURSE PRACTICE ENVIRONMENT RESEARCH**

*Martha L. Grubaugh, Kara Snyder, Lindsey Tarasenko*

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#### **THE IMPORTANT ROLE OF THE NURSE MANAGER IN EMERGING NURSE PRACTICE ENVIRONMENT RESEARCH**

*Martha L. Grubaugh*

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#### **WORKPLACE MISTREATMENT: WHAT IS KNOWN AND UNKNOWN TO MANAGERS IN PRACTICE ENVIRONMENT RESEARCH**

*Lindsey M. Tarasenko*

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#### **EMERGING RESEARCH: WORKFORCE AGILITY IN ACUTE CARE NURSING PRACTICE ENVIRONMENTS**

*Kara A. Snyder*

# EMERGING RESEARCH: FILLING THE GAPS IN ACUTE CARE NURSE PRACTICE ENVIRONMENT RESEARCH

Overview: Emerging Research: Filling the Gaps  
in Acute Care Nurse Practice Environment Research

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**Purpose:** Despite tremendous advances in our understanding of nursing practice environments, there persists many unanswered research questions. While research on the nursing practice environment is moving outside the walls of the acute care setting, gaps in the research still remain in the acute care setting. The purpose of this symposium is to provide a state of the science about nursing practice environments that have given rise to three emerging programs of research in acute care nursing practice environments.

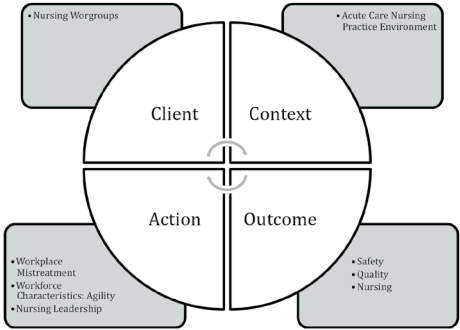
**Rationale/Conceptual Basis:** The SROM is a conceptual framework developed in 2008 by Brewer, Verran and Stichler, grounded in systems theory and may serve as a framework for new research. The SROM is well purposed for systems research due to its recognition that the healthcare environment is complex and interrelated. It organizes each variable of the health care system into four core constructs. Three actions in the model pertaining to the nurse practice environment include workplace mistreatment, workforce characteristics (agility), and nursing leadership.

**Methods:** Building on prior knowledge, three programs of research are described with the SROM. The four concepts of the SROM were used to analyze systems research in three key actions with hospital healthcare delivery system as the context: 1) Workplace Mistreatment; 2) Workforce Characteristics (Agility); 3) Nursing Leadership.

**Results:** A conceptual model was developed for each context (Figure 1), with phenomena for each action focus of the SROM described, though inter-related in the client, context, and outcomes.

**Implications:** In this symposium, each researcher will describe their application of systems research through a conceptual model and provide a state of the science of each action that has given rise to three distinct programs of research in acute care nursing practice environments.

**Figure 1.** SROM with Three Actions in Acute Care Nursing Practice Environments



# EMERGING RESEARCH: FILLING THE GAPS IN ACUTE CARE NURSE PRACTICE ENVIRONMENT RESEARCH

## The Important Role of the Nurse Manager in Emerging Nurse Practice Environment Research

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### **Purpose/Aims:**

1. To describe the state of the science related to the important role of the nurse manager in cultivating a supportive nurse practice environment and how their role is foundational to the concept and future research of practice environments in the acute care setting.
2. To identify the need for future research related to supportive nurse manager practice environments and the effect of the nurse manager's own practice environment on their ability to enact and sustain their important role.

**Background:** Interest and study of the nursing practice environment began in the late 1970's when hospitals were experiencing wide spread nursing shortages (Lake, 2002). The study by McClure, Poulin, Sovie, and Wandelt (1983) identified strong, effective, and visible nursing leadership as an important attribute for good nursing practice environments. The importance of nursing leadership was emphasized again when the Institute of Medicine (IOM) report, Keeping Patients Safe: Transforming the Work Environment (Page, 2004) identified leadership as an essential precursor to achieving patient safety outcomes.

Numerous studies in acute care and specialty settings have identified that a supportive practice environment contributes to positive nurse and patient outcomes (Aiken, Clarke, Sloane, Lake, & Cheney, 2008; Choi & Boyle, 2014; Clarke, Sloane, & Aiken, 2002; Flynn, 2007; Flynn, Carryer, & Budge, 2005; Flynn, Liang, Dickson, & Aiken, 2010; Kazanjian, Green, Wong, & Reid, 2005). However, more research about the acute care nurse practice environment remains. Little is known about the nurse manager practice environment and what they need to feel supported so they can enact and sustain their important role.

**Description of Model/Concept:** The SROM is a conceptual framework grounded in systems theory (Brewer, Verran, & Stichler, 2008) and may serve as a framework for new research. The SROM is well purposed for systems research due to its recognition that the healthcare environment is complex and interrelated. It organizes each variable of the health care system into four core constructs. Nursing leadership is an action in the model pertaining to the nurse practice environment.

**Discussion:** The nurse manager is integral to cultivating and shaping the nursing practice environment, however there is limited understanding of the nurse manager practice environment, and its effect on the nurse practice environment and patient and nurse manager outcomes. Future research utilizing the Nurse Manager Practice Environment (NM PE) scale (Warshawsky, Lake, Rayens, & Havens, 2013) will assist in analyzing the relationship between the nurse manager practice environment and system outcomes.

**Conclusion:** Understanding that the nurse manager is in a pivotal role and that there is still need for future acute care nurse practice environment research, the following research questions can help to address the nurse practice environment research gap pertaining to nurse managers.

# EMERGING RESEARCH: FILLING THE GAPS IN ACUTE CARE NURSE PRACTICE ENVIRONMENT RESEARCH

## Workplace Mistreatment: What Is Known and Unknown to Managers in Practice Environment Research

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**Purpose/Aims:** The purpose of this presentation is to delineate between forms of workplace mistreatment in the nurse practice environment by clarifying and defining workplace incivility, workplace bullying, lateral violence, abusive supervision, and workplace violence. In addition, gaps in the literature on nurse manager knowledge of workplace mistreatment will be reviewed and future research proposed. **Description/**

**Definition of Concept:** Workplace mistreatment is an overarching construct that encompasses uncivil, aggressive, deviant, antisocial, violent, harassing, physically abusive, bullying, and/or tyrannical workplace behaviors that occur in the workplace. Dimensions of workplace mistreatment are used interchangeably, such as workplace incivility, workplace bullying, lateral violence, abusive supervision, and workplace violence. Nurse managers may have difficulty distinguishing behaviors associated with each concept and are unclear how to intervene.

**Internal Consistency of the Concept:** A concept delineation was performed using methods outlined by Morse (1995) on the following concepts: workplace incivility, workplace bullying, lateral violence, abusive supervision, and workplace violence.

**Logic Linking Concept to Practice/Research:** Workplace mistreatment occurs in nursing practice environments and nurse managers will likely intervene during interpersonal conflicts among staff and peers. Workplace mistreatment harms individuals that experience it, affects productivity of the organization, and undermines effective communication. It is vital for nurse managers to be able to recognize the various forms of workplace mistreatment to address the behaviors appropriately. This presentation brings forth conceptual clarity of workplace incivility, workplace bullying, lateral violence, abusive supervision, and workplace violence and discusses behaviors associated with each concept. The nurse manager work environment is examined in terms of the challenges faced with communication and conflict and how they handle forms of mistreatment based on the literature. Current interventions of workplace mistreatment are discussed, such as immediate interventions with those involved, civility policies, and culture change. Gaps in knowledge include whether emerging research will make a difference in the way nurse managers handle various forms of workplace mistreatment and the effectiveness of tailored interventions.

**Conclusions, Including Utility of Concept:** Workplace mistreatment will remain in nursing practice environments until concepts, and behaviors associated with them, are known and approached appropriately. Findings from this concept delineation gives nurse managers a thorough understanding of the workplace mistreatment construct and considers challenges to management of misbehaviors in practice environments. The audience is asked to consider their understanding of workplace mistreatment before and after the presentation. There are several gaps in knowledge around the management of mistreatment that need further exploring in order to support the knowledge, skills, and abilities of nurse leaders and help them to manage staff in complex practice environments.

# EMERGING RESEARCH: FILLING THE GAPS IN ACUTE CARE NURSE PRACTICE ENVIRONMENT RESEARCH

## Emerging Research: Workforce Agility in Acute Care Nursing Practice Environments

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**Purpose:** Agility has been editorialized as a necessary characteristic to thrive in the future. In the face of uncertainty and unpredictability, an agile workforce can create impact, and therefore, change the environment of an organization. While agility research in manufacturing, industrial engineering, business and information technology has exploded since the Iacocca institute's seminal publication describing agility as the 21<sup>st</sup> century manufacturing enterprise strategy, there remains a paucity of empirical healthcare literature on agility.

**Rationale/Conceptual Basis:** In an era of mergers and acquisitions, rapidly shifting healthcare policies and patient population characteristics, more research is needed to provide organizational strategies to temper the effects of the rapidly changing healthcare system on patient outcomes. It is believed that an agile workforce may have benefits including quality improvement, learning-curve acceleration, improved customer service, improvement organizational culture, and better fiscal outcomes. Future research testing the measurement of workforce agility in healthcare can enhance our ability to study the relationships between the practice environment, workforce agility (WFA) and patient outcomes.

**Methods:** The SROM is a conceptual framework, grounded in systems theory serves as a framework for the role of WFA in acute care nursing practice environments. An analysis of the concept was completed to fully understand the theoretical and operational definitions of WFA.

**Results:** WFA is conceptualized as observable agile behaviors at work, as opposed to an agile personality or attribute. Theoretically, WFA is grouped workforce agility into three dimensions based on the model of adaptable behavior at work: proactivity, adaptivity, and resilience. Definitions, antecedents and consequences of WFA will be described in the session.

**Implications:** As much of the WFA research has been developed outside of nursing and healthcare, additional research is needed to derive the concept of agility in nursing and to examine the psychometric properties of a workforce agility scale.

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## Abstracts of Symposium Presentations

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# LEADING A TRANSFORMATION TO CLINICAL SCHOLARSHIP IN NURSING PRACTICE

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*Moderator:*

*Mary J. Waldo, PhD, RN, GCNS-BC, CPHQ  
Director, Professional Practice, Quality, & Research  
Regional Nursing  
Providence Health & Services, Oregon Region  
Portland, OR*

## OVERVIEW: LEADING A TRANSFORMATION TO CLINICAL SCHOLARSHIP IN NURSING PRACTICE

*Mary J. Waldo*

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## TRANSLATION SCIENCE: USING A MODEL TO SHAPE AWARENESS & ADOPTION OF THE CSF

*Sandra M. Maddux*

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## DEVELOPMENT OF A NOVEL CLINICAL SCHOLARSHIP FRAMEWORK

*Beth Schenk*

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## LEADING A TRANSFORMATION TO CLINICAL SCHOLARSHIP: METHODOLOGY AND RESULTS

*Lynette Savage, Beth Schenk, Mary Waldo, Sherri Mendelson, Sandra Maddux*

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## SELECTING EVIDENCE-BASED INTERVENTIONS FOR SHARING A CLINICAL SCHOLARSHIP FRAMEWORK

*Sherri G. Mendelson*

# LEADING A TRANSFORMATION TO CLINICAL SCHOLARSHIP IN NURSING PRACTICE

## Overview: Leading a Transformation to Clinical Scholarship in Nursing Practice

*Mary J. Waldo, PhD, RN, GCNS-BC, CPHQ  
Director, Professional Practice, Quality, & Research  
Regional Nursing  
Providence Health & Services, Oregon Region  
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**Background:** The need for nurses to quickly integrate evidence from diverse sources and then apply the strongest evidence to solve complex clinical problems has never been greater. Over the past 40 years the understanding of nursing practice and its relationship to patient safety and outcomes, and to the healthcare financial picture, has solidified. The current healthcare climate is forcing nursing, and other healthcare disciplines, to rapidly incorporate new knowledge into practice. However, the ability of nursing to do this is often hindered by a number of factors, including the complexity of new knowledge, varying levels of educational preparation and experience of nurses at all levels, and the rapid-paced environment. Large health care systems face additional challenges with spreading new evidence to many locations, often with their own micro-cultures. Providence Health & Services, a large northwest health care system, developed a novel framework to assist in establishing a culture for excellence in clinical care.

**Purpose:** The purpose of this symposium is to describe the PH&S Clinical Scholarship Framework (CSF) developed to build knowledge, capacity and commitment to evidence-based practice, research and innovation. It promotes the exploration and generation of best practices by conducting research, translating knowledge through evidence-based practice projects, and applying innovations and measuring the results. The framework sets the tone to continuously evaluate nursing practice performance, relevant data, published findings, and to share what is learned through dissemination and diffusion of innovations. The framework is designed to help improve the lives of patients and families we serve by engaging nursing and their care partners, educating all levels of nursing staff and leaders, and contributing to the body of nursing science.

**Results:** The presentations will focus on:

- Describe how AHRQ's Translational Model was used to guide the development, dissemination and adoption of a novel Clinical Scholarship (SC) Framework.
- Describe method for development of a Framework for CS, including review of CS literature
- Study design and results from initial measurement of nurses across the healthcare system about their knowledge and awareness of CS;
- Adoption, Implementation and Institutionalization of CS Framework

**Implication and Significance for Nursing, Implementation:** A lengthy time gap exists between the development and implementation of new evidence. This gap places patients at risk for poor outcomes and clinicians at risk for providing outdated clinical care. The described CS framework and implementation plan assists in addressing the often over-whelming barriers to rapid translation of evidence into nursing practice.

# LEADING A TRANSFORMATION TO CLINICAL SCHOLARSHIP IN NURSING PRACTICE

## Translation Science: Using a Model to Shape Awareness & Adoption of the CSF

*Sandra M. Maddux, DNP, APRN, CNS-BC  
Sr. Director of Professional Practice, Quality & Research  
Nursing Administration  
Providence Health & Services, Oregon Region  
Portland, OR*

**Purpose:** The purpose of this paper is to describe the application of the Knowledge Translational Model to improve the dissemination of a novel conceptual framework.

**Background:** Translation theory describes how to foster awareness and acceptance of new knowledge as well as how new knowledge is acquired and becomes a part of the clinician's routine in practice. Careful examinations of the setting and environment before implementing change, the engagement of key stakeholders, identifying knowledge brokers such as research councils are all examples of interventions necessary for successful translation of needed interventions. When interventions are integrated within a model and approaches are systematically used to translate new information into practice, the final adoption is more likely to occur.

**Methods:** We applied the AHRQ Knowledge Transfer model in the development, diffusion and dissemination, and in identifying strategies to spread the Clinical Scholarship (CSF) through-out our enterprise. It was an iterative process throughout the planning and dissemination period. A group of doctorally prepared nurses met weekly to assess the recommended strategies. These strategies were then vetted among stakeholders for appropriateness and effectiveness in their clinical settings.

**Outcome:** Using the AHRQ Knowledge Transfer model as a guide, we developed a thorough dissemination plan for the Clinical Scholarship Framework and collateral materials. Processes, Actors, and Activities related to the AHRQ model will be discussed.

**Implications to Practice:** This paper describes how we used a traditional translation model developed by AHRQ to develop a plan to translate a framework to harness the concepts of quality improvement, innovation, research, and evidence based practice across an enterprise. The AHRQ translation model is a comprehensive yet intuitive process to take an idea from conception to institutionalization.

# LEADING A TRANSFORMATION TO CLINICAL SCHOLARSHIP IN NURSING PRACTICE

## Development of a Novel Clinical Scholarship Framework

*Beth Schenk, PhD, MHI, RN-BC  
Nurse Scientist  
Providence St. Patrick Hospital  
Missoula, MT*

**Purpose/Aims:** The purpose of this study was to develop a novel Clinical Scholarship Framework and collateral materials through an iterative, qualitative process. The intent of the framework is to explain terms such as research, evidence-based practice, quality improvement and innovation in a large health system of 26,000 nurses. In addition, the framework contributes to developing a culture of inquiry as nurses better understand the elements of clinical scholarship and how they contribute to improvements in nursing practice.

**Rationale/Background:** To build a culture of inquiry in a large health system, agreed upon terms and definitions are necessary to alleviate confusion and provide guidance. Gaps in understanding were identified across the health system. In addition, a variety of perspectives, definitions and models were found in the literature, contributing further to confusion. In 2014, a request was made from nursing leadership to clarify differences and similarities among research, evidence-based practice, quality improvement, and innovation.

**Methods:** Over a two-year period, a team of doctorally prepared nurses from the health system developed a Clinical Scholarship Framework and collateral materials in order to explain these terms and teach methods, rationale and outcomes of performing acts of Clinical Scholarship. An extensive review of the literature was performed. Iterative conversations were held using discussion, debate, review of notes and prior decisions. After an extensive review of the literature, the team discussed relationships between the key elements of clinical scholarship, selected or developed definitions for terms and conceived of the graphic model that was refined for use. The framework was shared with content experts (both nursing researchers and nursing leaders) for feedback on multiple occasions over the period of development. Their comments and suggestions were discussed by the team and adaptations were made when consensus was reached. A draft graphic model was created in addition to the conceptual framework. This draft was refined by a graphic artist in the health system. Finally, the framework and explanation was shared with system nurse executives for final review and endorsement.

**Outcomes:** A novel Clinical Scholarship Framework was developed by nurse scientists; refined by graphic designers; and approved by health system nursing leadership. It has withstood many episodes of feedback and refinement. It is now ready for dissemination and testing in the Clinical Scholarship Framework Study.

**Conclusions:** Nurses at all levels need to apply evidence to their practice. Yet, understanding how to do that is not clear. By developing a framework and selecting definitions and approaches used across a single health system organization, it is intended that messaging and educating will be simplified, leading to better understanding, access to resources, and successful completion of studies and other acts of clinical scholarship.

# LEADING A TRANSFORMATION TO CLINICAL SCHOLARSHIP IN NURSING PRACTICE

## Leading a Transformation to Clinical Scholarship: Methodology and Results

*Lynette Savage, PhD, RN, COI, Assistant Professor, University of Great Falls*

*Beth Schenk, PhD, MHI, RN-BC, Nurse Scientist*

*Mary Waldo, PhD, RN, GCNS-BC, CPHQ, PHSOR, Director, Professional Practice*

*Sherri Mendelson, PhD, RNC, CNS, IBCLC, Nurse Researcher, Magnet Program*

*Sandra Maddux, DNP, APRN, CNS-BC, Regional Director, Nursing Practice*

*Providence Health & Services*

**Purpose:** To describe the knowledge and engagement of nurses from an integrated healthcare system with elements of Clinical Scholarship and the Clinical Scholarship Framework.

**Background:** Providence Health & Services has approximately 26,000 nurses in five western states. A primary focus in the last ten years has been to standardize processes and policies in the organization. One area that needed refinement was in the definition, structure, education, and dissemination of quality improvement, evidence-based practice, and nursing research; with multiple hospitals in the system there have been numerous approaches and models. The Clinical Scholarship Framework was developed to address confusion and lack of clarity in these areas.

**Methods:** In this IRB approved descriptive study, the investigators developed an internal electronic 28 question pre-post survey to understand current knowledge of quality improvement, evidence-based practice, and nursing research for the nurses within the organization. Questions were developed based on four key areas:

- **Demographic questions:** age, gender, racial or ethnic background, hospital, years in nursing, years in the organization, current practice area, work hours, highest level of education, primary nursing role, number of professional certifications.
- **Structural questions:** participation on local shared governance, research, or leadership councils
- **Knowledge base:** understanding the terminology, familiarity with the Providence Clinical Scholarship Framework, rate ability to generate, translate, and disseminate evidence based practice and/or research.
- **Current skill level ability to:** identify a researchable problem; read, critique, and use a research study; participate in a local research project.

Nurses were randomized from 35 hospitals within the organization (n=2500), representing approximately 10% of employed RNs, to receive the electronic survey during August-September, 2016. Response rate was 19% (n=465). The results of the survey were analyzed to establish what components of quality improvement, evidence-based practice, and nursing research need further development to enhance the education of the nurses. A post-survey will occur in 12 months to measure the effectiveness of an educational and action-based interventions.

**Results:** Of the nurses responding, the majority were female (414, 90%), BSN prepared (262, 57%), working day shift (309, 67%), as a direct patient care nurse (335, 73%). Subjects reported a range from one to five years nursing experience (108, 24%) to 26-30 years (123, 27%). While over half of the subjects believed they have a moderate understanding of evidence-based practice (255, 54%), a significant percentage reported a lack of understanding of the differences between quality improvement (QI), evidence-based practice (EBP), research, and innovation (363, 79%). This is supported in the literature (Majid et al., 2011). Over half of the subjects had not heard of Clinical scholarship 256, 56%; a larger percent had never heard of the framework (397, 86%). The results reinforce the need to provide ongoing education to increase the knowledge and engagement of nurses.

**Implication for Nursing:** Standardized education is fundamentally important to further perceptions of the clinical scholarship framework, how well nurses understand the concepts, and their intention to use the framework across a multi-hospital system.

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# LEADING A TRANSFORMATION TO CLINICAL SCHOLARSHIP IN NURSING PRACTICE

## Selecting Evidence-Based Interventions for Sharing a Clinical Scholarship Framework

*Sherri G. Mendelson, PhD, RNC, CNS, IBCLC  
Director of Nursing Research & Magnet Program  
Providence Holy Cross Medical Center  
Mission Hills, CA*

**Purpose:** The purpose of this paper is to describe the process for selection of evidence-based interventions to accelerate the impact and uptake of knowledge toward adoption of a novel Clinical Scholarship Framework.

**Rationale/Conceptual/Background:** A large health system is in the midst of establishing an education, leadership, research, and evidence based practice information infrastructure to systematically advance the science, knowledge, and profession of nursing within our enterprise to better care for patients and families we serve. We have created a novel Clinical Scholarship Framework to help link and embed these concepts for better comprehension and expectation setting for frontline leaders and clinicians. Further, we are applying the Agency for Healthcare Research and Quality (AHRQ) Knowledge Transfer model to build awareness, acceptance and adoption of the Clinical Scholarship Framework. AHRQ recognized early on that many important clinical interventions known to improve clinical care were simply not being implemented in clinical practice settings. To assist in both the speed and adoption of best practices, AHRQ developed a program in 1999 called *Translation Research Into Practice* or (TRIP) to evaluate different strategies for translating research findings into clinical practice. The aim of the 3- year cooperative agreement was to identify sustainable and reproducible strategies to accelerate the impact and uptake of best practices (AHRQ, 2001).

**Methods:** Current literature was reviewed for best practices regarding educational methods for diffusion, dissemination and adoption of a novel framework. Although evidence for best methods is lacking (AHRQ, 2013), methods that have been utilized with success were explored. TRIP strategies were applied including tailored messaging, academic and institutional detailing, leveraging technology, remote collaboration, and outreach to contribute to the diffusion and dissemination of the Clinical Scholarship Framework. A group of doctoral prepared nurses met iteratively to develop global and specific strategies and plans. Findings were shared with content experts across our health system for feedback, and their ideas were utilized in further planning. Once agreed upon, different strategies were used to share elements of the Clinical Scholarship Framework. As strategies were used, feedback was gathered from participants to evaluate the effectiveness of each approach.

**Results/Outcome:** The application of available evidence to planning our educational and engagement activities was effective. Early methods included diffusion through lecture and active learning for dissemination through breakout group activities. Nurses perceived active participation as more effective than passive learning. Adding humor and novelty was reported to increase engagement within the various methods utilized.

**Implications to Practice or Research:** Using evidence is a key goal of today's nurses. Determining best methods for diffusion, dissemination and adoption of a conceptual framework increases process efficiency and effectiveness. This study demonstrates that a process of applying evidence to development of a dissemination plan is possible. The result of feedback from nurses demonstrates both efficiency and effectiveness. This example will be helpful to nurses developing methods of diffusion, dissemination and adoption as they attempt to apply evidence into practice.

## Abstracts of Symposium Presentations

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# MIDLIFE WOMEN'S HEALTH: STRESSFUL LIFE EXPERIENCES, SYMPTOMS, AND SYMPTOM CLUSTERS

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*Moderator:*

*Nancy Fugate Woods, PhD, RN, FAAN*

*Biobehavioral Nursing*

*University of Washington*

*Seattle, WA*

### OVERVIEW: MIDLIFE WOMEN'S HEALTH: STRESSFUL LIFE EXPERIENCES, SYMPTOMS, AND SYMPTOM CLUSTERS

*Nancy Fugate Woods*

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### THE CHALLENGES OF MIDLIFE WOMEN

*Annette Thomas, Ellen Sullivan Mitchell, Nancy Fugate Woods*

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### FROM MEASUREMENT TO MODEL: SELF-AWARENESS AND HOT FLASH SEVERITY

*Lisa Jean Taylor-Swanson, Nancy Fugate Woods, Ellen S. Mitchell, Kenneth Pike*

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### STRESSFUL LIFE EVENTS AND THEIR TRAJECTORIES AMONG MIDLIFE WOMEN

*Annette Thomas, Ellen Sullivan Mitchell, Nancy Fugate Woods*

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### DYNAMICS OF STRESS AND FATIGUE DURING THE MENOPAUSAL TRANSITION

*Lisa Jean Taylor-Swanson, Dave Pincus, Alex Wong, Jon Butner, Mary Koithan,*

*Lisa Conboy, Ellen S. Mitchell, Nancy Fugate Woods*

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### USING PARTICIPATORY DESIGN TO DEVELOP TECHNOLOGY WITH AND FOR MIDLIFE WOMEN

*Uba Backonja, Nancy Fugate Woods, Andrew D. Miller*

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# MIDLIFE WOMEN'S HEALTH: STRESSFUL LIFE EXPERIENCES, SYMPTOMS, AND SYMPTOM CLUSTERS

## Overview: Midlife Women's Health: Stressful Life Experiences, Symptoms, and Symptom Clusters

*Nancy Fugate Woods, PhD, RN, FAAN  
Biobehavioral Nursing  
University of Washington  
Seattle, WA*

The purpose of this symposium is to examine recent research findings related to midlife women's life stressful life experiences, self-awareness, and symptoms and symptom clusters. Data for analyses are from the Seattle Midlife Women's Health Study, a longitudinal investigation of women's health during the menopausal transition and early postmenopause, as well as an ongoing study of Symptom Clusters during the Menopausal Transition and Early Postmenopause. Dr. Nancy Woods will present a brief overview of the symposium, orienting all to the Seattle Midlife Women's Health Study and the Symptom Clusters study. Five papers will comprise the symposium:

Dr. Annette Thomas will present a content analysis of challenges midlife women experienced during 15 years of their participation in the Seattle Midlife Women's Health Study.

Dr. Lisa Taylor-Swanson will present an analysis of the concept of self-awareness and its operationalization as it relates to symptom experiences. She will focus on distinguishing internal state awareness and self-reflectiveness and assess the self-consciousness scale and its utility as a measure.

Dr. Thomas will also present an analysis of the stressful life events that women reported on 4 occasions over a ten year period using the Norbeck Life Events Survey adapted for midlife women. She will include approaches to understanding temporal patterns of life events using growth curve models to identify trajectories.

Dr. Lisa Taylor-Swanson will present an analysis of patterns of relationships between perceived stress and fatigue, applying multi-level structural equation modeling, testing the fit of nonlinear dynamic equations.

Dr. Uba Backonja will present use of a participatory design method with midlife women to help identify their preferred approaches to tracking symptoms as well as their suggestions for technological enhancements they desire to help them manage symptoms during the menopausal transition.

Taken together, the papers in this symposium contribute to knowledge about the complexity of women's experiences during the menopausal transition and early postmenopause and highlight the application of a variety of analytic strategies ranging from qualitative analysis to complex statistical approaches.

# MIDLIFE WOMEN'S HEALTH: STRESSFUL LIFE EXPERIENCES, SYMPTOMS, AND SYMPTOM CLUSTERS

## The Challenges of Midlife Women

*Annette Thomas, RN, CCRN, PhD  
University of Washington  
Seattle, WA*

*Ellen Sullivan Mitchell, PhD  
University of Washington  
Seattle, WA*

*Nancy Fugate Woods, RN, PhD, FAAN  
University of Washington  
Seattle, WA*

**Purpose:** The purpose of this study was to identify the experiences that midlife women find the most challenging as described by the women themselves looking back over 15 years of being in the Seattle Midlife Women's Health Study.

**Methods:** Content analysis was used to analyze the following question from the 2006 Health Questionnaire: "Since you have been in this study, what has been the most challenging part of life for you?" Data reported here were collected as part of a longitudinal study, the Seattle Midlife Women's Health Study (SMWHS), which spanned 23 years. Women entered the study between 1990 and the early part of 1992 when most were in the early stages of the menopausal transition (MT) or not yet in the transition. Women who were eligible were between 33 and 55 years of age, had at least one menstrual period within the last year, had a uterus and at least one ovary, were not pregnant, and could read and understand English.

Eligible participants for this study (N=81) were in either the later reproductive (LR), early or late menopausal transition (ET, LT) stages, or within five years of the final menstrual period (FMP) during the course of the study. A total of 83 women responded to the 2006 Health Questionnaire. Two women did not answer this specific question leaving 81 women's answers for analysis.

**Results:** The women's challenges were grouped into 5 categories: 1) Family relationships, 2) Work, 3) Self, 4) Material Resources, and 5) Multiple Co-Occurring Stressors. The most commonly experienced Challenges for Midlife Women across all categories were identified. From most to least common, they were Multiple Co-Occurring Stressors (29 women), Divorce/Breaking Up with a partner (11 women), Health Problems of Self (11 women), Death of Parents (10 women), Partner's Health (9 women), Parenting (9 women), Marriage/New Partner (7 women), Stressful Job/Career (7 women), Financial Challenges (7 women), and Existential Issues (5 women).

**Conclusion:** This study is the first to examine midlife women's challenges over the past 15 years while participating in the Seattle Midlife Women's Health Study. This study also identified the ten most frequently reported challenges over the past 15 years of midlife explained by the women themselves. These findings are important as they help nurses and providers to identify women at high risk for allostatic overload, which may lead to heart disease, depression, and sleeping problems. Further, providers will find these results informative, so that they can determine resources to help this specific age group of women who have so many roles and responsibilities.

# MIDLIFE WOMEN'S HEALTH: STRESSFUL LIFE EXPERIENCES, SYMPTOMS, AND SYMPTOM CLUSTERS

## From Measurement to Model: Self-Awareness and Hot Flash Severity

*Lisa Jean Taylor-Swanson, PhD, MAcOM, EAMP, Part-Time Lecturer*

*Nancy Fugate Woods, PhD, RN, FAAN, Professor, Dean Emerita*

*Ellen S. Mitchell, PhD, RN, Associate Professor Emerita*

*Kenneth Pike, PhD, Research Scientist*

*School of Nursing*

*University of Washington*

*Seattle, WA*

**Background:** Many women experience hot flashes (HF) during the menopausal transition, some of which are severe in quality. HF severity is important to study as more severe HFs may be more bothersome and interfere with daily activities. Interventions such as Cognitive Behavioral Therapy (CBT) have demonstrated effectiveness in decreasing perceived HF severity. Researchers posit that increased self-awareness enhanced by CBT plays a role in helping women better 'cope' with HFs. The relationship between self-awareness and HF severity was tested by Taylor-Swanson (2015). The structural equation model revealed a positive predictive relationship: increased self-awareness was predictive of increased HF severity. This ran counter to their hypothesis. The present study is undertaken to examine the Fenigstein's Self-Consciousness Scale (SCS) which was used in their study to measure self-awareness, and to compare it with other measures such as Mehling's Multidimensional Assessment of Interoceptive Awareness (MAIA) in order to determine which measure best evaluates the concept of self-awareness.

**Methods:** A literature search of measures of self-awareness was conducted with a flexible date range. All measures were compared with one another by a close review of all items. A concept analysis was conducted to define self-awareness and to compare and contrast this with the concept of interoceptive awareness. A Confirmatory Factor Analysis (CFA) was conducted to determine the factor loading in the Seattle Midlife Women's Health Study dataset.

**Results:** The concept of self-awareness was described with the attributes of self-directed perception, interoception, emotion, and physicality. The SCS subscale of Internal States Awareness (ISA) measures a neutral to positive style of self-consciousness, reflection, or self-evaluation. The MAIA measures interoceptive awareness, defined as afferent information that arises from anywhere within the body, involving higher mental processes such as conscious awareness, behavior and emotions. The concepts of self-awareness and interoceptive awareness are very similar, and perhaps interchangeable. Confirmatory factor analyses did not confirm any of the factor models. The ISA and Self-Reflectiveness (SR) subscales both demonstrate good fit indices, with ISA being established with CFI=1.00; TLI=1.03; RMSEA=0.00, and fit indices for SR were CFI=1.00; TLI=1.03; RMSEA=0.00.

**Conclusions:** A close examination of the SCS and MAIA scales revealed that the SCS does not incorporate behavioral or emotional dimensions of self-awareness. These dimensions of self-awareness are noted by several scholars as a part of the conceptual definition of self-awareness and merit measuring. The MAIA is suggested for use in future studies of self-awareness and symptom experience by women in the menopausal transition as it measures facets of the definition of self-awareness including emotion, behavior, higher mental processes and interoception.

# MIDLIFE WOMEN'S HEALTH: STRESSFUL LIFE EXPERIENCES, SYMPTOMS, AND SYMPTOM CLUSTERS

## Stressful Life Events and Their Trajectories among Midlife Women

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**Purpose:** Although stressful life events have been the focus of research for a variety of populations, there has been little attention paid to understanding the stressful aspects of midlife women's lives. The purposes were to determine if age, years of education, income, employment, race/ethnicity, marital status, and being a parent were associated with the undesirable impact scores of the stressful life event (SLE) categories and to create a growth curve model of undesirable stressful life events for midlife women over a decade, characterizing the growth curve by using the predictors of age, menopausal transition stage, years of education, family income, employment, race/ethnicity, marital status, and being a parent.

**Methods:** The measures used included the Life Events Scale (LES), Menopausal Transition Stage and the following demographic characteristics: age, years of education, income, employment, race/ethnicity, marital status, and being a parent. To assess the relationship between demographics (age, years of education, gross family income, employment, race/ethnicity, marital status, being a parent) and life event stress, Pearson's  $r$  was used for continuous variables and analysis of variance was used for categorical variables (menopausal transition stage, race/ethnicity). Growth Mixture Modeling was used to determine a mean developmental trajectory of life event stress over the stages of the menopausal transition. Age was set at zero. A set of model parameters (random intercept and slope since women entered the study at different ages) was estimated for the growth curve model based on maximum likelihood estimation (MLE) to identify the mean undesirable growth curve. Ages of the women ranged from 34 years to 62 years. Multinomial logistic regression identified predictors (obtained at baseline) of the growth curve. Predictors included menopausal transition stage, years of education, family income, employment, race/ethnicity, marital status, and being a parent.

**Results:** The largest adjusted total number of stressful events were: financial, family and close friends, health, and parenting. The LES categories with the highest mean impact scores included Family & Close Friends, Personal and Social, Health, Work and Love & Marriage. Health was significantly associated with menopausal transition stages in the analysis of variance (ANOVA) for the total impact scores for Undesirable Events. Mixed effects multilevel regression identified education ( $\beta^1 = -.047$ ,  $SE = .0115$ ,  $p < .001$ ) as the only significant predictor of the growth curve model illustrating that women who have more education rate the impact of undesirable life events lower than those that have less education.

**Conclusion:** Women's social roles and their connections may shape the kinds of stressful life events they experience. Negative deflection in the growth curve for Undesirable Events suggests that although adaptation may occur over time, Undesirable stressful life events that continue over time may place women at risk for development of pathologies such as hypertension, diabetes, heart disease, arthritis, and obesity.

# MIDLIFE WOMEN'S HEALTH: STRESSFUL LIFE EXPERIENCES, SYMPTOMS, AND SYMPTOM CLUSTERS

## Dynamics of Stress and Fatigue during the Menopausal Transition

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*Dave Pincus, PhD, Associate Professor<sup>2</sup>*

*Alex Wong, PhD, Post-doctoral Fellow<sup>3</sup>*

*Jon Butner, PhD, Professor<sup>3</sup>*

*Mary Koithan, PhD, RN, Associate Dean<sup>4</sup>*

*Lisa Conboy, MA, MS, ScD, Director of the Research Department<sup>5</sup>*

*Ellen S. Mitchell, PhD, RN, Associate Professor Emerita<sup>1</sup>*

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<sup>5</sup>*The New England School of Acupuncture at MCPHS University, Boston, MA*

**Background:** The menopausal transition (MT) is a complex and dynamic biopsychosocial developmental transition. Some women are resilient during the MT - they're able to 'bounce back'. Many women experience symptoms during the MT, including fatigue and perceived stress. The present study uses stress and fatigue coupling as an indicator of system-wide resilience. Smooth transitions from loose couplings of stress and fatigue to tight coupling under high stress indicates resilience of the system. The purpose of this study was to examine nonlinear relationships between stress and fatigue as indicators of resilience during stages of reproductive aging.

**Methods:** Participants were drawn from the Seattle Midlife Women's Health Study, a longitudinal study of women experiencing the menopausal transition (n=507). Eligible participants for this study (n=56) were those who completed 60 or more annual health reports and monthly health diaries. Women were either in the late reproductive (LR) stage, early menopausal transition (ET) stage, late menopausal transition (LT) stage, or within 5 years of the final menstrual period (postmenopause, PM) during the course of the study. Stress and fatigue were rated in a health diary which women completed on multiple occasions each year of the study.

Fatigue and stress were converted into discrete differences between the reported value one step into the future minus the current value. These differences were positive when stress/fatigue is increasing over time and negative when decreasing. We then treated the changes in fatigue and changes in stress as simultaneous outcomes through a multivariate multilevel model. Dynamics of attractors and coupling between stress and fatigue were analyzed with Multilevel Structural Equation Modeling.

**Results:** The SEM model fit with  $R^2$  values across stages ranged from 37-48% for fatigue and 40-45% for stress. Loss in model fit was observed when including menopausal stages, suggesting that the four stages differ in their dynamics. All stages showed fixed point attractor dynamics for stress and fatigue.

Attractor strength: fatigue becomes less stable from LR to LT and into PM. Stress becomes more stable across stages.

Coupling of stress on fatigue: increasing stress was associated with increasing fatigue in LR. The coupling relationship disappeared during ET and LT - this suggests a disconnection of adaptive regulation, less resilience. Fatigue is again driven by stress during PM. No longer smoothly connected across all levels of stress, fatigue is driven by stress only at lower fatigue levels, suggesting loss of resilience at high levels of fatigue.

Coupling of fatigue on stress: during LR and ET being tired does not make one stressed, suggesting healthy resilience. LT fatigue at any level of stress makes one even more stressed. PM fatigue drives stress only at higher levels of stress.

**Conclusions:** Women in this sample during LR and ET demonstrated a smooth regulatory function of increasing stress leading to increasing fatigue, and fatigue not leading to stress. As they progressed through LT, stress no longer drives fatigue, while fatigue drives stress. Altogether, this is suggestive of general dysregulation of the system and decreasing resilience during LT and PM.

# MIDLIFE WOMEN'S HEALTH: STRESSFUL LIFE EXPERIENCES, SYMPTOMS, AND SYMPTOM CLUSTERS

## Using Participatory Design to Develop Technology with and for Midlife Women

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**Background:** Nurse researchers have expertise in developing interventions to support individuals with managing their health. To develop intervention components, nurse researchers often use interviews or focus group to understand individuals' needs. These qualitative methods could be augmented with tasks that can spur idea generation and expansive thinking. This augmentation can be found in Participatory Design (PD) during which individuals or groups are asked to develop solutions (e.g., interventional technologies) using multiple methods of spurring creativity and idea generation. Participants can use crafting materials, whiteboards, and other objects to support expansive thinking, inspiration, and idea organization. PD sessions in which participants are from a specific patient population (i.e., potential end-users) can be particularly useful when designing technologies for that population.

**Objective:** To describe the use of PD in a study to understand the technology and visualization needs of women experiencing menopause and related symptoms.

**Methods:** Two 4.5-hour PD sessions were held with women (n=4 and 4) in Seattle, WA. Three facilitators guided women through several tasks: Creating affinity diagrams of positive and negative aspects of menopause; thinking expansively about technologies they would want to address those aspects and visualizations that could be part of those technologies; using crafting materials (markers, color paper, pipecleaners, etc.) to describe their technology and visualization ideas; and sharing ideas WITH the group. One PD session was held with women's healthcare providers in Tacoma, WA in which they participated in a 2.5-hour session including the same tasks completed by the women. At the end facilitators showed providers the women's ideas to get their feedback. All participants were provided food and a gift card. Sessions were audio-recorded and transcribed.

**Findings:** Facilitators gathered valuable information about women's experiences with menopause and guided women to design technologies and visuals to support them through menopause. Using crafting materials allowed women and healthcare providers to express their ideas in a variety of ways. It also allowed for diverse communication styles to be expressed (e.g., writing notes, drawing pictures, talking). Transcripts provided rich information about women's and providers' ideas and motivations for their designs. Examples of women's ideas generated during the PD sessions included wearable devices (e.g., watch, bracelet, patch) or sensors embedded in clothing to passively collect biobehavioral data, alert women that a symptom will occur soon, and provide suggestions about what women could do to stop/minimize symptoms. To prevent hot flashes, devices could automatically engage a cooling mechanism (e.g., incorporated within a shirt) when data collected by the device indicate a forthcoming hot flash.

**Conclusions:** PD is a useful and feasible method to use in developing interventions to support a specific patient population. PD brings in the strengths of interview and focus group methods--gaining rich insights about individuals' experiences and thoughts--and adds capacity for participants to think creatively to come up with solutions themselves. By using PD to engage potential users of the interventions early in the design process, researchers may design more tailored and appropriate interventions.

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## Abstracts of Symposium Presentations

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### TACKLING CHILDHOOD OBESITY

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*Moderator:*

*Bonnie Gance-Cleveland, PhD, RNC, PNP, FAAN  
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#### TACKLING CHILDHOOD OBESITY: A 24-SITE TRIAL

*Bonnie Gance-Cleveland, Heather Aldrich, Kristine Gauthier, Sarah Schmiede*

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#### OBESITY CARE IN SCHOOL-BASED HEALTH CENTERS: PROVIDER TREATMENT BY AGE GROUP

*Kristine I. Gauthier, Heather Aldrich, Sarah Schmiede, Bonnie Gance-Cleveland*

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#### SELF-REPORT VERSUS CHART AUDITS

*Bonnie Gance-Cleveland, Heather Aldrich, Kristine Gauthier, Sarah Schmiede*

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#### CHRONIC CARE MODEL AND OBESITY CARE IN SCHOOL-BASED HEALTH CENTERS

*Heather Aldrich, Sarah Schmiede, Kristine Gauthier, Bonnie Gance-Cleveland*



# TACKLING CHILDHOOD OBESITY

## Tackling Childhood Obesity: A 24-Site Trial

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**Purposes/Aims:** A comparative effectiveness randomized clinical trial was designed to evaluate implementation of current obesity prevention guidelines into practice guided by the Chronic Care Model using a virtual obesity collaborative, with and without decision-support technology. The purpose of this symposium is to: (1) examine differences in treatment by age of the child; (2) explore the difference in self-report of assessment and treatment compared to chart audit findings for care provided to overweight/obese youth; and (3) evaluate the use of the Chronic Care Model in the implementation of the obesity guidelines into practice in school-based health centers.

**Background:** Significant health disparities exist with minority youth at risk for obesity and related chronic conditions. School-based health centers offer primary care services for many underserved, high-risk youth and may provide an avenue for addressing these health disparities. A virtual training collaborative with education on obesity guidelines and quality improved increased provider adherence to the guidelines.

**Methods:** School-based health centers in six states (AZ, CO, NM, MI, NY, NC) participated in the project (n=33 providers). Provider surveys, parent surveys, and chart audits were conducted at baseline (T1), after completion of the training (T2), and 6 months after completion of the training (T3). Providers completed the International Life Science Institute (ILSI) Research Foundation Assessment of Overweight in Children and Adolescents Survey that consists of 35 questions, most with multiple parts. Composites were calculated for survey questions to give an indicator of change for the following topic areas: attitudes, barriers, medical assessment, laboratory evaluations, and weight assessment. Most questions were ranked using a 5-point Likert-type scale, from most of the time (5) to never (1).

Medical records from a random sample of youth 5-12 years (n=32/clinic) making well-child visits at each of the three data collection points were reviewed for documentation of: BMI percentile, accurate weight diagnosis based upon the BMI percentile for age and sex, BP percentile, ordering appropriate laboratory assessment of youth aged 10 years and older with a BMI  $\geq$  95<sup>th</sup> percentile.

Providers also completed the Chronic Care Model Elements Survey (CCMES), a 9-item survey, that assesses elements of the model that are used in patient care. The responses ranged from (1) "never" to (5) "always". Items include "how often do you": 1) use a registry to track care, 2) use registry to remind patients about visits, 3) follow up with patients between visits by telephone, 4) use practice guidelines, 5) involve staff in follow up or services, 6) assist patients in self-management, 7) refer patients inside practice for education about nutrition or physical activity, 8) refer patients outside practice for education about their nutrition or physical activity, 9) use flow sheets to track critical elements of care. Total score is the mean of the 9 items, with the higher indicative of greater use of the elements of the Chronic Care Model.

Analytic methods for each presentation differed and will be presented by the author of the individual paper.

**Funding:** This project was supported by grant number R18HS018646 from the Agency for Healthcare Research and Quality. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Agency for Healthcare Research and Quality.

# TACKLING CHILDHOOD OBESITY

## Obesity Care in School-Based Health Centers: Provider Treatment by Age Group

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**Purpose/Aim:** The purpose of this study was to examine school-based health providers' treatment approaches of overweight/obese youth based on age group before participation in a virtual collaborative.

**Rationale/Background:** Childhood obesity rates have increased over the last few decades, with highest rates in ethnic minorities. Minority youth are at an increased risk for future weight-related health problems. School-based health centers provide care for many underserved, at-risk youth and offer opportunities for obesity-related interventions. Little is known about how school-based providers approach overweight/obesity treatment based on a child's age and whether there are differences in treatment approaches between age groups. A better understanding of providers' treatment approaches of different age groups may help tailor training to the needs of these providers.

**Methods:** Providers (n=33) from 24 school-based health centers in AZ, CO, NM, MI, NY, NC participated in the project. Before web-based training, providers completed questions related their treatment approaches of overweight children based on age group: preschool, school-aged, and adolescent. Questions were taken from the International Life Science Institute (ILSI) Research Foundation Assessment of Overweight in Children and Adolescents Survey, and were either ranked on a 5-point Likert scale from most of the time (5) to never (1), a 3-point rating scale (never, sometimes, often), or category (patient alone, patient and parent, patient, parent, and other). Questions included when caring for overweight children do providers make weight control recommendations; who do they engage in treatment based on age group; and what specific dietary and physical activity approaches are used in each age group. Descriptive statistics were used for baseline data and McNemar's was used to examine differences in treatment approaches between age groups.

**Results:** Consistent with childhood obesity guidelines, providers typically engage both patient and parent in treatment for preschool (100%) and school-aged children (88%), compared to 30% of providers engaging the patient alone for adolescents. Sixty percent of providers reported that they most of the time or often make recommendations for weight control with preschool-aged children, compared to 90% with school-aged children and 94% with adolescents. When treating overweight children, providers recommend changes in diet with similar relative frequencies, independent of age group. However, they do not recommend low fat diets or modest caloric restriction as frequently in preschoolers as they do in older children ( $p<.05$ ). Providers recommended increasing physical activity across all age groups. However, providers tend to recommend increased organized activities for older children more than they do for preschoolers ( $p<.05$ ).

**Implications:** School-based health centers serve a pediatric population with high rates of overweight/obesity. School-based health providers in this study indicated they make behavioral change recommendations for children based on weight status across all ages, but make different recommendations in some areas for preschoolers. Minority youth have the highest obesity rates, with high rates already evident in preschool-aged children. Addressing age-specific approaches through training may be a method for improving care in overweight/obese youth. More work should be done to determine what provider training is needed to best address pediatric obesity across age groups in school-based settings.

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# TACKLING CHILDHOOD OBESITY

## Self-Report Versus Chart Audits

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**Purposes/Aims:** The purpose of this study was to explore the difference in self-reported identification and assessment compared to chart audit findings for care provided to overweight/obese youth. The specific research questions were: How do chart audit findings correlate with self-reported use of body mass index (BMI) percentile for assessment of overweight/obesity, accurate diagnosis of overweight/obesity, and hypertension assessment?

**Background:** Obesity-related health disparities exist for minority youth. School-based health centers offer care for underserved youth and provide an avenue for addressing health disparities. A virtual training collaborative with education on obesity guidelines and quality improvement increased provider adherence to the guidelines. Evaluation of the intervention included both provider self-report, as well as, chart audits of overweight/obese children seen at school-based health centers. Historically, self-report data has been associated with response bias.

**Methods:** A correlation design to explore the relationship between provider self-reported identification and assessment of childhood overweight/obesity and chart audits was conducted as a part of a multi-site trial. The International Life Science Institute (ILSI) Research Foundation Assessment of Overweight in Children and Adolescents Survey, a 5-point Likert scale, and chart audits were correlated to answer the research questions. The medical records from youth 5-12 years ( $n=32/\text{clinic}$ ) making well-child visits at baseline were reviewed for documentation. Charts were examined for documentation of: BMI percentile, accurate weight diagnosis based upon the BMI percentile for age and sex, blood pressure percentile. Chart audit data were scored 0-1 and were aggregated by provider.

**Results:** Chart audits ( $n=788$ ) were completed at baseline with 73% having BMI percentiles, 30.5% having blood pressure percentiles, 40% accurately diagnosing overweight, and 49.4% accurately diagnosing obesity. Providers (70%) reported using BMI percentile to diagnose overweight/obese children, 66% self-reported that they used the 85<sup>th</sup> percentile for overweight and 73% reported they used the 95<sup>th</sup> percentile as the cutpoint for obesity. Ninety percent of providers indicated they assessed overweight/obese children for hypertension. Self-reported means for hypertension assessment was 4.91/5 compared to a mean of 0.31/1 for chart audits indicating use of blood pressure percentile with a Pearson Correlation Coefficient ( $r$ ) between the two of 0.25. The mean for self-reported using BMI percentile to assess weight was 4.73/5 compared to chart audits indicating use of BMI percentile 0.74/1 ( $r = 0.07$ ). The mean reported by providers for use of 85<sup>th</sup> percentile for diagnosis of overweight was 0.66/1 compared to chart audits of correct diagnosis of overweight based upon calculation of BMI percentile 0.44/1 ( $r = 0.59$ ). Self-reported mean use of 95<sup>th</sup> percentile for diagnosis of obesity was 0.73/1 compared to chart audit means of 0.47/1 ( $r = 0.57$ ).

**Implications:** Providers must identify and assess pediatric obesity in order to address this epidemic. Our baseline data suggest that providers are obtaining BMI percentiles more frequently than blood pressure percentiles and that there is room for improvement in the accurate diagnosis of overweight and obesity in youth. This study found chart audit data were more accurate than self-reported data for some measures for evaluating providers' identification and assessment of childhood obesity.

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# TACKLING CHILDHOOD OBESITY

## Chronic Care Model and Obesity Care in School-Based Health Centers

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**Purposes/Aims:** The purpose of this study was to evaluate the extent to which school-based health center providers used elements of the Chronic Care Model in the care of overweight and obese youth. Elements of the Chronic Care Model were assessed before and after participation in a virtual collaborative, as well as with and without decision-support technology.

**Background:** Minority youth experience an increased risk of obesity and related chronic conditions. School-based health centers offer primary care services for many underserved, high-risk youth. Current recommendations suggest using the Chronic Care Model in caring for overweight and obese youth, therefore the Chronic Care Model guided the intervention and assessment of this study.

**Methods:** Providers (n=33) from 24 school-based health centers in AZ, CO, NM, MI, NY, NC participated in the project. All of the sites received web-based training by participating in a virtual learning collaborative. Half the sites (n=12) received HeartSmartKids™, a bilingual, decision-support technology in addition to the web-based training. HeartSmartKids™ is designed to assist providers with the identification, assessment, and counseling of children's weight status and health habits. The Chronic Care Model Elements Survey (CCMES) is a 9-item survey that assesses the extent to which elements of the Chronic Care Model are used in the routine care of patients in a practice. Providers completed the CCMES at baseline, after completing the web-based training, and six months after training. For all items, the response values ranged from (1) "never" to (5) "always." The total score and each of the nine items were compared among sites over time and by technology group using repeated measures analyses, where a significant time by technology interaction signifies that changes over time were dependent upon technology group.

**Results:** The total CCMES score for the providers using decision-support technology was 3.27, 3.38, and 3.75 at the three time points, while the providers without technology had a total score of 3.16, 3.48, and 3.42, respectively. For individual questions, the interaction between time and technology was significant for using a patient registry (p=0.02) and outside referrals for nutrition and physical activity (p=0.005).

**Implications:** School-based health center providers serve a pediatric population with high rates of overweight/obesity. The decision-support technology used in this study appeared to have a positive impact on some components of the Chronic Care Model over time, including the patient registry and outside referrals for nutrition and physical activity. HeartSmartKids™ creates a patient registry for practices and allows the inclusion of referral sources to be included into the tailored patient education materials that are generated. Use of the decision-support technology varied by site, so future research may be enhanced by facilitating adoption of the technology into clinic work flow. More work is also needed to determine how provider changes related to implementing the Chronic Care Model impact patient outcomes.

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## Abstracts of Symposium Presentations

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# UNDERSTANDING HEALTH CARE & FAMILY EXPERIENCES OF CANCER SURVIVORS & THEIR CAREGIVERS: MAKING USE OF EXISTING NATIONAL SURVEYS

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*Moderator:*

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### USING EXISTING NATIONAL HEALTH SURVEYS TO STUDY EXPERIENCES OF CANCER SURVIVORS

*Janice F. Bell*

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### EXAMINING THE ROLE OF TREATMENT COMPLEXITY IN SURVIVORSHIP CARE PLANNING

*Nicole Mahr; Karen de Sola-Smith, Christy Adams, Karla Hodges, Janice F. Bell*

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### ASSOCIATIONS OF RELATIONSHIP TIES AND WORK MODIFICATIONS MADE BY CANCER CAREGIVERS

*Angela E. Usher; Charlie Dharmasukrit, Emma J. Blackmon,*

*Victoria Ngo, Janice F. Bell*

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### PARENTING DIFFICULTIES EXPERIENCED BY CANCER SURVIVORS WITH YOUNG CHILDREN

*Robin L. Whitney, Janice F. Bell, Sarah C. Reed*

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### FEAR OF CANCER RECURRENCE IN SURVIVORSHIP

*Sarah C. Reed, Janice F. Bell, Jill G. Joseph*

# UNDERSTANDING HEALTH CARE & FAMILY EXPERIENCES OF CANCER SURVIVORS & THEIR CAREGIVERS: MAKING USE OF EXISTING NATIONAL SURVEYS

## Using Existing National Health Surveys to Study Experiences of Cancer Survivors

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This symposium session highlights research focused on the growing population of US cancer survivors which, by 2020, is expected to exceed 20 million. Along with this population growth, demand for survivorship care and related expenditures have increased dramatically. At the same time, national reports have declared cancer survivorship care a crisis—drawing attention to unmet healthcare needs; inattention to health behaviors, health promotion and psychosocial issues; inadequate patient-provider communication; problems with care coordination and transition management between oncology and primary care providers after cancer treatment has ended; patient-provider differences in follow-up care expectations; and the implications of these issues for survivor's family members and other caregivers. Despite new efforts to address survivorship concerns in oncology care, research lags behind, often relying on small-scale studies and qualitative analyses.

Recognizing the public health magnitude of cancer survivorship and the myriad problems facing survivors, recent national surveillance efforts have yielded several large datasets related research including: 1) the Experiences of Cancer Survivors Supplement, a survey in the 2011 Medical Expenditures Panel Survey field among respondents reporting a history of a cancer diagnosis; and 2) the LIVESTRONG 2012 Survey for People Affected by Cancer, an online survey developed by the National Cancer Institute, Centers for Disease Control and Prevention, American Cancer Society, and the Agency for Healthcare Research and Quality.

The researchers presenting in the four presentations in the symposium used these large datasets to study cancer survivorship issues important to nurses including care planning, psychosocial outcomes, caregivers' experiences, and outcomes of the children of survivors. Two of the presentations also serve to highlight work from an innovative research methodology course designed to introduce doctoral nursing students to data management and analysis as part of their training in quantitative research methods. In this course, students at the Betty Irene Moore School of Nursing work in groups with faculty mentors to analyze health survey data and prepare co-authored manuscripts for publication. The course supports the rapid trajectory required for future academic success by assisting students to: develop proficiency in data management and analysis; understand the peer review and publication process; gain experience working collaboratively in teams; and build their CVs through development of presentations and papers for publication.

This session will be useful to health professionals and researchers interested in broad issues related to cancer care and survivorship. It will also be of interest to faculty interested in developing quantitative methodology courses with similar aims.

# UNDERSTANDING HEALTH CARE & FAMILY EXPERIENCES OF CANCER SURVIVORS & THEIR CAREGIVERS: MAKING USE OF EXISTING NATIONAL SURVEYS

## Examining the Role of Treatment Complexity in Survivorship Care Planning

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**Purposes/Aims:** This purpose of this study was to examine treatment-related and socio-demographic factors associated with survivor-reported receipt of SCPs and their individual components, treatment summary and follow-up care instructions. Specifically, this study aimed to define the relationship between care complexity, operationalized as having multiple cancers or cancer treatments, and receipt of survivorship care plans (SCPs).

**Rationale/Conceptual Basis/Background:** The population of cancer survivors is estimated to reach 19 million by 2025, causing increased demand on primary care providers to manage late and long-term effects of cancer treatment. The Institute of Medicine (IOM) recommends organized SCPs to improve care quality. SCPs include two components: a treatment summary (TS) summarizing disease characteristics and treatment received; and follow-up care instructions (FCIs), a set of disease-specific evidence-based care guidelines intended to detect recurrence and meet survivors' long-term health needs. Use of SCPs is associated with enhanced patient-physician communication and collaboration, increased self-efficacy and improved health outcomes among cancer survivors. SCPs are underutilized despite IOM recommendations and empirical evidence supporting their use. Little is known about what factors place survivors at increased risk for insufficient follow-up care.

**Methods:** This was a secondary analysis of data collected in the 2012 LIVESTRONG™ Survey for People Affected by Cancer, an online survey in which participants self-selected their involvement. In addition to descriptive statistics, multivariate regression analyses were used to examine relationships between survivors' socio-demographic and treatment-related characteristics and their receipt of survivorship care planning among 3,599 cancer survivors who participated in the survey.

**Results:** Half (52%) of survivors received a complete SCP, with TS and FCI. Nearly all (92%) received FCI, while 48% received only TSs. Few (5.8%) participants reported no follow-up. In regression analyses, increased treatment complexity was significantly associated with lower odds of SCP receipt. For each additional treatment modality used during care, participants had 8% lower odds of receiving a complete SCP (CI 0.86-0.99). Survivors with multiple cancer diagnoses had 19% lower odds of receipt than those with single diagnoses (CI 0.68-0.95). Other significant predictors of SCP receipt were being female (OR 0.56; 95% CI 0.48-0.65), having bachelor's degree or higher education (OR 0.77; 95% CI 0.60-0.99), age over 66 years (OR 1.38; 95% CI 1.01-1.89), and reported race of "other" (OR 1.56; CI 1.14-2.13). Similar results were found when examining TS alone. Having multiple treatments (OR 0.77; 95% CI 0.82-0.95) and diagnoses (OR 0.77; 95% CI 0.65-0.91) were both significantly associated with TS receipt.

**Implications:** Only 52% of survivors received recommended post-treatment coordination. Increased case complexity was associated with lower odds of receiving comprehensive survivorship care planning, suggesting that providers are less likely to deliver comprehensive SCP in the face of complex care. Results indicate the need to identify potential barriers to the implementation of recommended post-treatment care planning for cancer survivors. Nurses are often informally involved in care coordination, so nurses' roles in this process should also be explored. Future research should explore these findings in diverse populations and identify specific characteristics associated with patient receipt of survivorship care plans.



# UNDERSTANDING HEALTH CARE & FAMILY EXPERIENCES OF CANCER SURVIVORS & THEIR CAREGIVERS: MAKING USE OF EXISTING NATIONAL SURVEYS

## Associations of Relationship Ties and Work Modifications Made by Cancer Caregivers

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**Aim:** To characterize the relationship ties of caregivers to cancer survivors and examine associations between these ties and survivor-reported caregiver work modifications.

**Background:** Caregiving for a loved one with cancer can be complicated by competing demands including employment, childcare, and the caregiver's own health issues. While spouse/partners, family and friends make up the majority of informal caregivers, little is known about the specific work modifications made by each group. Considering the extent to which the relationship the caregiver has to the survivor might differentially influence the work modifications made by caregivers is an important contribution of this study.

**Methods:** This study used cross-sectional data collected from cancer survivors in the LiveStrong 2012 Survey for People Affected by Cancer (n=5560). Descriptive statistics were used to summarize the sample of survivors, their relationship ties with informal caregivers, and the work modifications made by their caregivers. Multivariable logistic regression was used to model caregiver work modifications as functions of survivor-caregiver relationship ties and important socio-demographic and health covariates.

**Results:** On average, survivors reported having 2.6 caregivers (SD=1.36; Range: 1.0 – 3.28). Survivors whose spouses/partners provided care in alliance with other family members or friends had significantly higher odds of reporting that their caregivers took time off from work (OR 1.37, CI 1.12-1.66), when compared to those who received caregiving from only their spouse/partner. Younger survivor age, annual household income between \$61K to \$100K (compared to less than \$61K and more than \$100K) and survivor unemployment were associated with higher odds of caregiver work modifications (ORs ranged from 1.20-1.59, CI 1.30-1.94). Survivors with higher education (college degree or more) reported fewer caregiver work modifications (OR 0.69, CI 0.56-0.83) than those with less education (OR 0.92, CI 0.74-1.15).

**Implications:** Taken together, our findings underscores the critical importance of informal caregivers in the current cancer care delivery system. Most cancer survivors report having more than one caregiver who made work modifications to care for them. Implications of these findings include identifying key components of informal caregiving, understanding the impact of caregiver employment changes, and the basis for developing nursing interventions to improve supportive resources for cancer survivors and their caregivers.

# UNDERSTANDING HEALTH CARE & FAMILY EXPERIENCES OF CANCER SURVIVORS & THEIR CAREGIVERS: MAKING USE OF EXISTING NATIONAL SURVEYS

## Parenting Difficulties Experienced by Cancer Survivors with Young Children

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**Purpose:** The purpose of this study was to examine the prevalence of parenting difficulties experienced by cancer survivors with young children at diagnosis, and to identify predictors of experiencing these outcomes.

**Background:** Nearly one in five individuals newly diagnosed with cancer is the parent or caregiver of a minor child. When a parent is diagnosed with cancer, normal family functioning is disrupted, creating stress for both children and parents. Parents affected by cancer may experience unique concerns and challenges, including impairment of their ability to perform daily parenting tasks, difficulty obtaining childcare, and worry over their children's wellbeing. However, very little research has examined the parenting difficulties experienced by cancer survivors in the United States.

**Methods:** Among cancer survivors in the United States who were parents of children age  $\leq 20$  years at diagnosis ( $n = 2,375$ ) in the 2012 LIVESTRONG Survey for People Affected by Cancer, we used logistic regression to model the odds of experiencing parenting difficulties, including report that 1) children were not fully emotionally supported or 2) cancer interfered with the ability to provide care for children. Odds ratios (OR) and 95% confidence intervals (CI) were calculated. Main predictors included age of youngest child at diagnosis ( $\leq 10$  years versus 11-20 years) and parent psychosocial measures, including self-reported distress and confidence obtaining emotional support. Models also controlled for important sociodemographic covariates, including: age, sex, race/ethnicity, annual income, employment status, and insurance status.

**Results:** Among parenting survivors, 50% reported that their children were not fully emotionally supported, and 58% reported that cancer affected their ability to provide care for their children. Significant predictors of children not being fully emotionally supported included: government insurance (OR 1.5; 95% CI 1.0-2.1); annual income  $\leq \$60,000$  (OR 1.6; 95% CI 1.3-2.1); being retired (OR 1.7; 95% CI 1.2-2.4); or female (OR 1.4; 95% CI 1.1-1.7). Significant predictors of cancer interfering with the ability to provide care for children included: female sex (OR 2.2; 95% CI 1.8-2.7), survivor report of high distress (OR 1.6, 95% CI 1.4-2.0), having a child  $\leq 10$  years (OR 2.5; 95% CI 2.0-3.2), or a child who was not fully emotionally supported (OR 1.5; 95% CI 1.3-1.9). Survivors with confidence in their ability to obtain emotional support were less likely to report that cancer interfered with their ability to provide care (OR 0.8; 95% CI 0.6-0.9).

**Implications:** A substantial proportion of cancer survivors who are parents of young children at diagnosis experience parenting difficulties, with many reporting that cancer or its treatment affected their ability to provide care, or that their children are not fully emotionally supported. Increased attention to the psychosocial needs of parenting cancer survivors is warranted, particularly among women, those with public insurance, lower incomes, children  $\leq 10$  years and survivors who report high distress levels or inadequate emotional support.

# UNDERSTANDING HEALTH CARE & FAMILY EXPERIENCES OF CANCER SURVIVORS & THEIR CAREGIVERS: MAKING USE OF EXISTING NATIONAL SURVEYS

## Fear of Cancer Recurrence in Survivorship

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**Background:** Throughout the cancer continuum, psychosocial concerns including depression, anxiety and fear of cancer recurrence (FCR) are common. FCR and related constructs such as cancer-specific worry are experienced by most cancer survivors and are consistently identified as important and often unmet areas of need. Prior work examining FCR has been limited by small and often disease-specific samples. This study is the first to our knowledge to describe FCR in a population-based sample of post-treatment cancer survivors.

**Methods:** Using the Medical Expenditure Panel Survey Experiences with Cancer Survivorship Supplement (n=1,360) we examined socio-demographic and health characteristics of cancer survivors, and their discussions of survivorship care (follow-up care and surveillance, late and long term effects, psychosocial needs and health promotion/behaviors) with providers by their level of fear of cancer recurrence (none, low, high). Survey-weighted population-based estimates describe the prevalence of key variables.

**Results:** The prevalence of high FCR among post-treatment cancer survivors was 12% with most being 40-64 years old, female, White non-Hispanic, married, unemployed or retired and having some college education. Additionally, the proportion of those with high FCR reporting healthy habits was 73.5%.

In survivor-provider survivorship care discussions, those having the most detailed discussion of follow-up care and surveillance (74.4%), late and long term effects (61.7%), psychosocial needs (42.3%) health promotion/behaviors (54.2%) had the highest prevalence of FCR compared to those reporting brief or no discussion, or not remembering.

**Implications:** In this population-based sample, our findings highlight the unmet psychosocial needs, particularly FCR, among cancer survivors and provide needed estimates to better understand this understudied population. These findings demonstrate the importance of targeted interventions, specifically on the occurrence and content of survivor-provider discussions, across the survivorship continuum.

## Abstracts of Symposium Presentations

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# VIOLENCE AMONG VULNERABLE POPULATIONS: A CALL FOR NURSE-LED LEADERSHIP

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*Moderator:*

*Benissa E. Salem, PhD, MSN, RN  
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## OVERVIEW: VIOLENCE AMONG VULNERABLE POPULATIONS: A CALL FOR NURSE-LED LEADERSHIP

*Benissa E. Salem, Adeline Nyamathi, Felicia Schanche Hodge, Lindsay Williams*

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## CORRELATES OF VIOLENT CRIME AMONG HOMELESS WOMEN WITH A HISTORY OF RECENT INCARCERATION

*Adeline Nyamathi, Mark Faucette, Benissa E. Salem*

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## IMPACT OF ABUSE AND VIOLENCE ON HEALTH OUTCOMES AMONG AMERICAN INDIANS

*Felicia Schanche Hodge*

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## CORRELATES OF PTSD SYMPTOMS AMONG FORMERLY INCARCERATED, CURRENTLY HOMELESS WOMEN

*Benissa E. Salem, Adeline Nyamathi, Joy Toyama*

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## RECLAIMING SENSE OF SELF: WOMEN VETERANS RECONSTRUCTING IDENTITY AFTER TRAUMA

*Lindsay A. Williams*

# VIOLENCE AMONG VULNERABLE POPULATIONS: A CALL FOR NURSE-LED LEADERSHIP

## Overview: Violence among Vulnerable Populations: A Call for Nurse-Led Leadership

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**Purpose:** The purpose of this symposium is to provide an overview of correlates and outcomes of violence among three vulnerable populations, namely 1) formerly incarcerated, currently homeless women; 2) rural American Indians (AI); and 3) women veterans (WV) in California. This discussion also highlights the leadership needed by nursing and public health scholars to address varied approaches to prevent violence and to work with groups that have experienced violence.

**Rationale:** Violence among vulnerable populations is pervasive across the life course, affecting physical and psychological health, and continued interaction with the criminal justice system. We sought to explore the intersection of individual factors and life events among three vulnerable populations.

**Methods:** Four papers presented in this symposium will utilize quantitative and qualitative methods to examine correlates and outcomes of violence among three vulnerable populations in rural and urban locales in California. The first study assesses violence among 130 homeless women with a history of incarceration in California (*Nyamathi*). The second study examines the impact of abuse and violence on health outcomes among rural AI (N=459) (*Hodge*). The third study examines post-traumatic stress disorder (PTSD) symptoms among formerly incarcerated, currently homeless women (N=130) (*Salem*). The fourth study describes how women veterans (WVs; N=14) reconstruct and reclaim their identity and sense of self when confronting combat trauma, intimate partner violence (IPV) and military sexual trauma (MST) (*Williams*).

**Results:** Among women with a history of incarceration, our data reveal that it is important to take into account housing, and coping behavior as it may affect increase in the likelihood of violent offences, while affectionate support and positive social interaction was related to less violent offences. Further, psychological frailty, anger scores, familial conflict, emotional support, and social interaction were associated with PTSD symptoms. Among rural AI, adverse experiences in childhood, adolescence and adult hood were significantly related to suicide ideation and poor cultural connectivity. Among WV, the process of reconstructing, reclaiming identity and sense of self was revealed.

**Implications:** Vulnerable populations are at continued risk for cyclical patterns of violence across the lifespan leading and contributing to health disparities and poor health outcomes. Nurse-led leadership and scholarship working with these vulnerable populations needs to take into account adverse life events in the development of culturally-sensitive and targeted programs.

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**Funding:** NIH/NINR T32 NR007077 Vulnerable Populations/Health Disparities; R01 NR04528; National Institute of Drug Abuse (NIDA) R34DA035409; UCLA Clinical and Translational Science Institute (CTSI) TL1 Summer Fellowship (UL1TR001881).

# VIOLENCE AMONG VULNERABLE POPULATIONS: A CALL FOR NURSE-LED LEADERSHIP

## Correlates of Violent Crime among Homeless Women with a History of Recent Incarceration

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**Purpose:** Using baseline data from a longitudinal study, the purpose was to assess correlates of violent crime among recently incarcerated homeless women.

**Background:** The cyclical pattern of violence in the lives of homeless women who were recently incarcerated in jails and prisons may precipitate ongoing substance use and recidivism - both of which are mounting public health issues affecting successful recovery. Violent crime is defined by the Federal Bureau of Investigation as murder, and non-negligent manslaughter, rape, robbery, and aggravated assault. Women accounted for 20% of violent crime among all arrestees. Recently incarcerated homeless women, in particular, face a constellation of socioeconomic disadvantages, including unstable housing, which make them three times more likely to commit a violent crime as compared to their counterparts with stable living arrangements. Further, women who committed violent crimes were more likely to have a significant history of physical and sexual abuse, drug dependence, and mental illness compared to women without these issues.

**Methods:** A cross-sectional study was conducted with baseline data from among 130 homeless women who were recently incarcerated and residing in one of two residential drug treatment programs or were seeking services in a women's facility in Skid Row. Similar women to the targeted sample guided the research design, assisted with revision and clarity of the questionnaires, and were actively involved in implementing and evaluating the program. Inclusion criteria for the women were: a) aged of 18-65; homeless when released from prisons or jails within the last six months; and b) reported a history of drug or alcohol use. Structured instruments were guided by the Comprehensive Health Seeking and Coping Paradigm which assessed sociodemographics, discriminatory beliefs, coping behaviors, social support, depressive symptoms, post-traumatic stress disorder, anger or hostility, drug and alcohol use, and violent crime.

**Results:** A multiple logistic regression analysis for violent offense for last conviction indicated that poor housing ( $p=.011$ ) and self-reported poor coping behaviors in the form of anger or hostility ( $p<.001$ ) were significant correlates. An ordinal regression model for the number of violent offenses also indicated that affectionate support was associated with committing fewer number of violent crimes ( $p=.001$ ). An ordinal regression model for the number of violent offenses also indicated that affectionate support was associated with committing fewer number of violent crimes ( $p=.001$ ), while positive social interactions ( $p=.007$ ) and anger/hostility ( $p=.015$ ) were associated with a greater number of violent crimes.

**Implications for Translation to Practice:** Due to the wide-ranging challenges of reintegration, it is critical that nurses take the leadership in developing a comprehensive array of strategies that can mitigate the pattern of violence often seen in the lives of homeless female who have recently exited jails and prisons. These strategies may aid in successful community reintegration.

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**Funding:** Support provided by National Institute on Drug Abuse, R34DA035409.

# VIOLENCE AMONG VULNERABLE POPULATIONS: A CALL FOR NURSE-LED LEADERSHIP

## Impact of Abuse and Violence on Health Outcomes among American Indians

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**Purpose:** To assess the relationship between adverse events in childhood, adolescence and adulthood as it relates to suicide ideation, cultural connectivity, and perception of wellness among adult American Indians (AI) in California.

**Background:** Across the lifespan, violence including and not limited to intentional injuries, homicide and suicide account for three quarters of death among AI youth. During adulthood, completed suicide is higher than any other ethnic group. Another critical issue is reported physical, sexual, verbal, and psychological abuse. Examining factors associated with abuse and suicide ideation among AIs, in addition to cultural connectivity, defined as connectedness within a cultural group is important, as it has been associated with health status. Likewise, perceptions of wellness, defined as mental, physical, emotional, and environmental balance provide valuable information for designing and implementing culturally sensitive interventions.

**Methods:** A cross-sectional survey of AI adults (N=459) was conducted in rural reservation sites in California (N=13). A structured instrument assessed socio-demographics, perceptions of wellness, health status/health conditions, suicide ideation, cultural connectivity (e.g. speaking tribal language, participating in AI practices, and feeling connected to community), and history of physical, sexual, verbal abuse and neglect. Chi Square and Fisher's Exact test examined bivariate, unadjusted correlations while multiple logistic regression analysis examined adjusted associations.

**Results:** Significant correlates of suicide ideation included adverse experiences in childhood, adolescence, and adulthood ( $p < 0.0001$ ). During childhood and adolescence, physical abuse and sexual abuse were significantly related to poor cultural connectivity (all  $p < .05$ ). Further, during adulthood, sexual abuse ( $p = .008$ ), verbal abuse ( $p = .02$ ) and neglect ( $p = .003$ ) were significantly related to poor cultural connectivity. Having poor perception of wellness was also correlated with suicide ideation ( $p = .007$ ).

**Implications for Translation to Practice/Further Research:** Across the lifespan, adverse childhood, adolescent and adult experiences influence physical and psychological health among AIs. Efforts to respond to suicide ideation should include cultural connectivity and poor perceptions of wellness as they both have the ability to influence outcomes. Nurse researchers and public health practitioners need to take a leadership role to develop an upstream approach to aid in targeted, culturally-sensitive interventions among this vulnerable population.

# VIOLENCE AMONG VULNERABLE POPULATIONS: A CALL FOR NURSE-LED LEADERSHIP

## Correlates of PTSD Symptoms among Formerly Incarcerated, Currently Homeless Women

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**Purpose:** The purpose of this descriptive, exploratory analysis was to gain a deeper understanding of correlates which may be associated with PTSD symptomology.

**Background:** Over the last decade, one of the most rapidly growing populations behind bars is women. Among justice-involved women, a history of violence and victimization (*e.g. abuse, witnessing violence, etc*) is frequently reported; in fact, some estimates report that over half of incarcerated women have experienced abuse. Given these experiences, incarcerated women can suffer from post-traumatic stress disorder (PTSD), related to prior and/or current events during reentry following incarceration.

**Methods:** A cross sectional analysis was conducted with baseline data from 130 formerly incarcerated, currently homeless women. Eligibility criteria included: 1) 18-65 years of age; 2) arrested within the last six months; 4) currently homeless; and 5) drug use in the past. A structured questionnaire assessed sociodemographics, incarceration history, witnessing trauma, alcohol and drug use history, social support, frailty, and PTSD symptoms.

**Results:** The sample (N=130) had an average age of 38.9 (SD 11.4), were homeless an average of 5.4 years (SD 6.0) and were in jail 12.9 times (SD 17.2); the majority (85%) self-reported witnessing violence and had an average PTSD score of 1.6 (SD 1.6, range 0-4). Multivariable logistic regression (comparing those with no PTSD symptoms vs. those with at least one symptom) revealed that higher levels of psychological frailty ( $p=0.013$ ), higher anger scores ( $p=0.005$ ), greater emotional support ( $p=0.007$ ), and lower positive social interaction score ( $p=0.005$ ) predicted greater odds of having at least one PTSD symptom. Those with past month use of alcohol, marijuana, cocaine/crack, heroin, and/or methamphetamine had lower odds of PTSD symptoms ( $p=0.005$ ). Those with only minor family conflicts ( $p=0.026$ ) had lower odds of having PTSD symptoms compared to those with conflict most of the time.

**Implications for Translation to Practice/Further Research:** These findings highlight the many vulnerabilities and further assessment needed among of PTSD among women exiting jail and prison. Nurse-led leadership and scholarship related to the importance of interventions which integrate and address PTSD, emotional support, social interaction and addressing family conflict among formerly incarcerated, currently homeless women during reentry are critical areas to explore as they may potentiate homelessness, rearrest and recidivism.

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**Funding:** This work was supported by National Institute on Drug Abuse R34DA035409.



# VIOLENCE AMONG VULNERABLE POPULATIONS: A CALL FOR NURSE-LED LEADERSHIP

## Reclaiming Sense of Self: Women Veterans Reconstructing Identity after Trauma

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**Purpose:** To describe how women veterans (WVs) reconstruct and reclaim their identity and sense of self when confronting combat trauma, intimate partner violence (IPV), and military sexual trauma (MST).

**Background:** WVs comprises approximately 10% of the Veteran population nationwide, and is the fastest growing Veteran population. Compared to their male Veteran and civilian women counterparts, WVs are more likely to experience post-traumatic stress disorder (PTSD) and depression, with a lifetime depression rate of approximately 29% for Veteran women, compared to 16% of Veteran men, and a post-traumatic stress disorder (PTSD) rate of 21% compared to 5% of civilian women. These experiences may be rooted in childhood, and continue throughout their military service as they reintegrate back in their communities. Use of mental health services by WVs varies by length of military service, period of military service, and linkage to Veterans Affairs (VA) healthcare benefits. Considering WVs mental health burden, traumatic histories, and variability in mental health service offerings, a qualitative exploration of decision-making and experiences related to mental health services is warranted.

**Methods:** Constructivist Grounded Theory methods were used to explore the experiences of WVs (N=12) when accessing mental health outpatient services, their decision-making process when to enter mental health services, and aspects of the experience that are important or meaningful to them. Participants eligible for this study were: 1) self-reported to be a woman, 2) 21-65 years of age, 3) served on duty in the regular armed forces (e.g. Army, Navy, and Air Force), or a member of the National Guard or Reserves that was called to duty, and 4) at least one mental health outpatient service visit in the past 12 months.

**Results:** Less than half (41%) of the WVs were 31-40 years of age and 66% used VA services, while 58% were mothers. From the in-depth interviews, the process of reconstructing, reclaiming identity and sense of self was revealed. This includes identifying and recognizing trauma, defining transitions as changes in the structure of the environment, understanding changes in the roles and notions of gender based, and military based identities, and actively seeking out the stability inherent within structures such as the military.

**Implications for Translation to Practice/Future Research:** These findings identify the need for nursing leadership in an interdisciplinary care team (e.g., *physicians, nurses, care managers, etc.*) in the design and implementation of community-based mental health and primary care programs for WVs. Considering nursing's holistic view of the person and health, nurses are uniquely poised to influence how and when WVs use mental health services and the nature of that experience; thus, this is a critical time to respond to the needs of this vulnerable population.

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**Funding:** Support for the research study was partially provided by UCLA Clinical and Translational Science Institute (CTSI) TL1 Summer Fellowship (UL1TR001881).

**Abstracts of Podium Presentations**

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**AMERICA'S YOUTH:  
BEHAVIOR CHALLENGES FOR NURSES**

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**EXAMINING INTERGENERATIONAL CONSEQUENCES  
OF ADVERSITY ON CHILD BEHAVIOR**

*Jonika Hash, Charles Fleming, Monica Oxford*

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**BROADENING OUR CLINICAL LENS  
OF INQUIRY IN CHILDREN WITH ADHD**

*Patricia Barfield*

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**HIGH RISK SEXUAL BEHAVIORS AND OUTCOMES  
AMONG UTAH'S INCARCERATED YOUTH**

*Jennifer M. Clifton, Leissa A. Roberts*

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**ALTERNATIVES TO SUSPENSION FOR YOUTH:  
PRINCIPALS' VIEWS**

*Celestina Barboasa-Leiker, Michele R. Shaw, Allison Matthews*

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**ALTERNATIVES TO SCHOOL SUSPENSION  
FOR YOUTH: THEMES OF STAKEHOLDER PERSPECTIVES**

*Michele R. Shaw, Celestina Barboasa-Leiker, Allison Matthews*

# AMERICA'S YOUTH: BEHAVIOR CHALLENGES FOR NURSES

## Examining Intergenerational Consequences of Adversity on Child Behavior

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**Purpose/Aims:** This study aimed to test a conditional latent growth curve model examining the trajectory of externalizing behavior among infants and toddlers under investigation for maltreatment. Specifically, our model hypothesized parents' own adverse childhood experiences would predict their children's externalizing behavior trajectory, as mediated by four factors: dysfunctional parent-child interaction, parent depression, difficult life circumstances, and parenting sensitivity.

**Rationale/Conceptual Basis/Background:** The intergenerational impact of parents' experiences of early adversity on the development of externalizing behaviors among vulnerable infants and toddlers is poorly understood.

**Methods:** We conducted a secondary analysis of a randomized comparative effectiveness trial of a parenting intervention among parents with a 10-to-24-month old child under investigation for maltreatment ( $N = 247$  dyads). At baseline, we assessed *parents' adverse childhood experiences* (retrospective self-report on early adverse events and the Childhood Trauma Questionnaire) and the four mediator variables. The four mediators included three self-report measures, *dysfunctional parent-child interaction* (Parenting Stress Index), *parent depression* (Center for Epidemiologic Studies Depression scale), and *difficult life circumstances* (Difficult Life Circumstances questionnaire), as well as one observed measure, *parenting sensitivity* (Nursing Child Assessment Teaching Scale). The outcome variable, *infant/toddler externalizing behavior*, was assessed longitudinally across four time points at approximately 3-month intervals by parent report (Infant Toddler Social Emotional Assessment). Structural equation modeling tested the hypothesized model. We first assessed an unconditional latent curve trajectory of externalizing behavior (intercept at baseline). We then assessed the latent factors conditioned on the mediators, parents' adverse childhood experiences, and covariates (baseline child age and treatment assignment). *Post hoc* analyses modeled the intercept at the remaining time points in the conditional model.

**Results:** An unconditional intercept and linear slope model indicated children's mean expected baseline value of externalizing behavior was 0.58 points, and their average rate of change was a 0.03 point increase every three months,  $ps < 0.05$ . The conditional model showed adequate fit statistics; RMSEA = 0.06; CFI/TLI = 0.96/0.92. Baseline levels of externalizing behavior were higher among children of parents who reported more adverse childhood experiences and greater dysfunctional interactions (standardized  $\beta s = 0.16$  and 0.31, respectively,  $ps < 0.05$ ). Externalizing behaviors increased less rapidly among children with more sensitive parents (standardized  $\beta = -0.19$ ,  $p < 0.05$ ). The hypothesized mediators failed to evidence significant mediation. *Post hoc* analyses showed persistently higher levels of externalizing behavior among children of parents reporting more adverse childhood experiences (standardized  $\beta s$  ranged from 0.16 to 0.18 across all time points, all  $ps < 0.05$ ). Lower levels of externalizing behavior were achieved by the third time point among children of more sensitive parents (standardized  $\beta s$  went from 0.06 to 0.20,  $ps < 0.05$  at the third and fourth time points).

**Implications:** Nurses play important roles assisting families at risk for child maltreatment. Findings from this study suggest parents' own early adverse experiences may have enduring consequences for their child's expression of externalizing behavior. Findings also demonstrate parental sensitivity may reduce children's externalizing behavior growth rates. Nursing interventions aimed at enhancing caregiver sensitivity could offset intergenerational transmission of risk for externalizing behavior.

**Funding:** Eunice Kennedy Shriver National Institute of Child Health and Human Development grants R01 HD061362 and U54HD083091.

# AMERICA'S YOUTH: BEHAVIOR CHALLENGES FOR NURSES

## Broadening Our Clinical Lens of Inquiry in Children with ADHD

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**Purpose:** To explore how children with ADHD evaluate and talk about their life satisfaction.

**Background:** Life satisfaction reflects what an individual thinks about her/his own life in terms of positivity, or what makes their life really good. There is no suitable proxy. To date, children with ADHD continue to be primarily assessed and understood through an adult proxy (parent/teacher/clinician) lens focused on ADHD symptoms and problems. Yet, the absence of ADHD-related symptoms/problems does not tell the whole story or necessarily equate with the child's view of life satisfaction. Children with higher levels of life satisfaction have better psychological outcomes and fewer psychological risks. Currently, little is known about how children with ADHD evaluate their life satisfaction or how broadening our clinical lens of inquiry to include the child's view of life satisfaction might enhance our understanding and change our approach to assessment and/or interventions.

**Methods:** A parallel convergent mixed-methods (QL/QN) design was used to collect data from a convenience sample of rural eastern Oregon children with ADHD ( $N=11$ ) age 7 to 11 years old. Semi-structured interviews were conducted with the children, to generate the children's narratives, using the child-centric, art-based technique of Draw-And-Tell Conversation (DTC) and the children's ratings on the Multidimensional Student Life Satisfaction Scale (MSLSS). The interviews were transcribed verbatim and analyzed using qualitative content analysis. This presentation focuses on emerging themes from the first round analysis of the children's DTC drawings and accompanying narratives, after being prompted to think about a time their life was "really good."

**Results:** Two themes emerged in first round analysis, "Connectedness and Nature." All of the children (100%) drew pictures of and talked about themselves engaged in some form of shared activity with a family member(s) and/or friend(s). Central to the described activities were stories about relational connections, supported in statements like, "Everybody was there" and "We are together." Nearly all of the children (90%) situated their depicted activity and narrative in nature, sharing outdoor stories, for example, of swimming, fishing, and boating, or symbolically depicting and incorporating nature into their narrative in the form of trees, streams, and mountains.

**Implications for Translation to Practice/Further Research:** Broadening our clinical lens of inquiry in children with ADHD beyond an adult proxy view of symptoms/problems, to include the child's view of life satisfaction, has the potential to improve psychological outcomes and reduce psychological risks, through: 1) increasing our contextualized understanding of children with ADHD, 2) identifying areas of innate strengths and/or resources that might be leveraged to enhance resilience, and 3) recognizing early indicators of psychological risk, such as low life satisfaction, that might aid early intervention efforts. In addition, incorporating the child's view of life satisfaction into the assessment process extends our scope of treatment options beyond pharmacological and/or behavioral interventions. In particular, prescribing, "green-play" or nature therapy has already been suggested as a third-line treatment option for children with ADHD.

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# AMERICA'S YOUTH: BEHAVIOR CHALLENGES FOR NURSES

## High Risk Sexual Behaviors and Outcomes among Utah's Incarcerated Youth

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**Purpose:** The purpose of this project was to determine the prevalence of high-risk sexual behaviors among Utah's incarcerated youth and to create a demographic profile to tailor interventions.

**Background:** Many adolescents participate in high-risk sexual behaviors that can result in unintended health consequences. High-risk sexual activities are among the top six behaviors which contribute to the leading cause of death and disease among adolescents (CDC, 2016). In Utah, chlamydia and gonorrhea (CT/GC) are the most commonly reported notifiable diseases with two-thirds of reported chlamydia cases being among persons 15-24 years of age (IBIS, 2016). Due to socio-economic factors such as educational failure, drug abuse, impoverished and / or abusive environments, youth in the correctional system are particularly vulnerable to sexual violence and exploitation. Sex trafficking and sexual violence are serious public health problems affecting individuals, families, and communities. (CDC, 2016 [3]). Before this study, no data on the high-risk sexual behaviors of adolescents within Utah's Juvenile Justice System had been gathered in a systematic manner.

**Methods:** Nurses in eighteen residential juvenile justice facilities in rural and urban areas throughout Utah verbally screened all youth admitted to their facilities for high risk sexual behavior. If the youth met CDC-established juvenile justice specific criteria during the verbal screening, urine screening for CT/GC was performed. Information gathered in these screening tools included youth demographics and questions about high-risk behaviors: "Have you ever 1. had forced or coerced sex, 2. had sex with someone you did not know well, 3. exchanged sex for drug, money or something you needed." Youth were also queried about the frequency of condom use ("never, sometimes or always").

**Results:** From July 1, 2015, to September 30, 2016, nurses have administered 1743 screening questionnaires and urine samples from youth in the JJS system. Samples demonstrated a CT/GC positivity rate of 11.7%. Similar to national data, female youth bear a disproportionate STI burden by a ratio of 2-3:1 (CDC, 2011). In Utah, females in corrections have a 22% positivity rate, while males average 8.1%. Regarding high-risk sexual behaviors, 27% of these youth had sex with someone they did not know well, 8.4% admitted to forced sex, and 4.3% exchanged sex for drugs, money or something they needed. Nationally, between 56-60% of general population youth report using condoms. Our data show youth who report "never" using a condom are 2.35 times more likely to acquire an STI than their "sometimes or always" peers.

**Implications:** This project substantiates the need for screening for high-risk sexual behaviors upon admission to the correctional system. Clinics performing screening for CT/GT, sexual trafficking and violence should continue this practice. Nurse researchers and clinicians should actively screen for other CDC-high risk established high-risk behaviors.

# AMERICA'S YOUTH: BEHAVIOR CHALLENGES FOR NURSES

## Alternatives to Suspension for Youth: Principals' Views

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**Purpose:** The purpose of this study was to quantify state-wide stakeholders' perspectives about developing and implementing an in-school, online, alternative to suspension (ATS) program throughout Washington State for middle school and high school students who have violated school substance use policies.

**Background:** There are numerous negative psychosocial long term consequences for students who are suspended from school after violating school policy. For example, students who are suspended are less likely to experience academic success, and students that are expelled are more likely to be held back a grade. Schools with higher suspension rates have lower levels of overall student academic achievement. In addition, racial and ethnic school disciplinary disparities have been found throughout national, state, and local level data, using a variety of measures and at all school levels and typologies. Alternatives to out-of-school suspensions have been shown to positively affect attendance rates, school involvement, and levels of community engagement. Exploring such alternatives is critical to improve the likelihood of positive behaviors in students.

**Methods:** Data was collected via administration of a cross-sectional, 16-item online survey. The survey was distributed through online survey links that were emailed to principals and vice-principals throughout Washington State. Qualtrics was used to deliver the survey, store responses, and analyze the data to produce descriptive statistics.

**Results:** Study participants included 201 stakeholders with 77% of the responses from principals (n=155) and 23% (n=46) from vice principals; 43% of all Washington State school districts responded to the statewide survey. Most of the school districts were rural (51%), with 34% classified as suburban and 15% as urban. The majority of stakeholders expressed interest in implementing an online alternative to out-of-school suspension option for first-time drug/alcohol/nicotine policy violators, with 29% stating they would "definitely" be interested and 51% answering "probably." When asked about specific substances and an online alternative to suspension, 70% were in favor (yes vs. no) for marijuana violations, 73% for alcohol, 98% for nicotine and 96% for E-cigarettes/vaping. 78% of all respondents stated that their school facility could accommodate a student who would need a space to independently work online in order to complete an online substance education module. Approximately 55% of participants described marijuana use as very problematic (10%) or somewhat problematic (45%) in their student population.

**Implications:** Washington state principals and vice-principals are generally in favor of implementing an online alternative to out-of-school suspension program for first-time tobacco, Ecig/vaping, alcohol, and marijuana policy violators. Developing and implementing an online ATS could reduce out of school suspensions for middle school and high school students. Keeping adolescents in school has the potential to improve academic success and decrease the likelihood of future negative behaviors among youth. Nurses in a variety of roles can take an active stance in supporting policy changes at local, state, and nationwide levels to facilitate in-school alternatives to suspensions. School nurses in particular are in settings to take active roles in advocating for our most vulnerable students so these youth can avoid the negative outcomes associated with suspension.

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*\*Funded by Washington State Office of Superintendent of Public Instruction (OSPI)*

# AMERICA'S YOUTH: BEHAVIOR CHALLENGES FOR NURSES

## Alternatives to School Suspension for Youth: Themes of Stakeholder Perspectives

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**Purpose:** The purpose of this study was to explore state-wide stakeholder perspectives about developing and implementing an online alternative to suspension (ATS) program throughout Washington State for youth (6th-12th graders) who have violated school substance use policies.

**Background:** Out-of-school suspensions are considered “exclusionary” discipline because students are removed from their educational environments. Suspension has been linked with negative school climates, increased rates of misconduct, and repeat offenders. Youth who are suspended are less likely to succeed academically. Racial and ethnic school disciplinary disparities have been demonstrated throughout the national and every type of school setting. Out-of-school suspension is often associated with increased student involvement with the juvenile justice system, often termed “school to prison pipeline.” There are numerous psychological and sociological impacts negatively affecting students who are suspended. Implementing disciplinary programs that engage students in an alternative to out-of-school suspension have been shown to positively affect attendance rates, school involvement, and feelings of community engagement. Exploring the unique perspectives of stakeholders (principals and vice principals) involved in middle school and high school disciplinary practices and policies is a necessary first step in developing and implementing an in-school alternative to suspension.

**Methods:** This part of a mixed methods study included qualitative description methodology with content analysis to analyze the data. The qualitative data included stakeholder responses to five open-ended questions that were gathered as a part of a cross-sectional 16-item online survey. The survey was administered through an anonymous online link that was emailed out to principals and vice principals throughout Washington State. The survey was sent via email along with several email reminders from 6/9/16 through 6/23/16.

**Results:** 43% of all Washington State school districts responded to the statewide survey. Participants included 201 stakeholders with most respondents being principals (77% n=155). Four general themes were identified that described stakeholders’ perspectives about the development and implementation of an ATS program. Themes includes, 1) *Stakeholders favor ATS options*, 2) *Marijuana’s negative impact*, 3) *Parent and student Engagement is required*, and 4) *Importance of substance use education and resources*.

**Implications:** Washington state principals and vice-principals are in favor of implementing an online alternative to out-of-school suspension option for first-time tobacco, Ecig/vaping, alcohol, and marijuana policy violators. The themes identified can be used to guide the development and implementation of an online ATS program. In collaboration with stakeholders, the initiation of an online ATS program could reduce out of school suspensions for middle high and high school age children. Nurses can work within interdisciplinary teams to advocate for changes in current school policy to push for alternatives to out-of-school suspension for substance use violators. Nurses can collaborate with stakeholders within schools, and at the local, state, and national level to support policy changes that can positively affect youth in middle school and high school settings. Alternatives to out-of-school suspension could assist in keeping youth in school, decrease recidivism, and increase the likelihood of academic and societal success.

## Abstracts of Podium Presentations

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### CARE IN THE COMMUNITY

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TOWARD A BETTER UNDERSTANDING  
OF DISEASE MANAGEMENT IN THE HOME

*Mustafa Ozkaynak, Rupa Valdez, Patrick Klem*

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BURDEN OF CAREGIVING TO CHRONICALLY  
AND TERMINALLY ILL FAMILY MEMBERS

*Muna Ezumah, Maisha Davette Parnell, Ebere Ume,  
Magda Shaheen, Senait Teklehaimanot*

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ENGAGING ADULTS WITH CHRONIC ILLNESS  
IN ONLINE DEPRESSIVE SYMPTOM SELF-MANAGEMENT

*Marian Wilson, Casey Hewes, Celestina Barboasa-Leiker, Anne Mason,  
Katherine A. Wuestney, Jessica A. Shuen, Michael P. Wilson*

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FACILITATING COMMUNITY-BASED PALLIATIVE  
CARE FOR OLDER ADULTS WITH ADVANCED ILLNESS

*Nancy Dudley, Margaret Wallhagen, Christine Ritchie,  
Roberta Rehm, Susan A. Chapman*



# CARE IN THE COMMUNITY

## Toward a Better Understanding of Disease Management in the Home

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**Aim:** The purpose of this study was to identify daily challenges of patients managing anticoagulation in their home environment and examine how clinicians' better understanding of patients' daily living routines and settings can support overcoming these challenges.

**Background:** From a patient's perspective—especially a patient with a chronic condition—health management is a continuous effort. Therefore, patient care activities that take place in formal care-delivery settings (e.g., clinics and hospitals) and informal settings (i.e., daily-living settings) should be linked and coordinated. A gap occurs if there is an inconsistency or disconnect between clinical care and self-management at home. Gaps have the potential to generate suboptimal patient outcomes. Clinicians' better understanding of patients' daily routines and patients' health management practices in daily living settings can potentially narrow the gap, allow for more individualized care and increase adherence.

**Methods:** A qualitative study was undertaken of 36 patients from an anticoagulation clinic, aged 26 to 83, receiving anticoagulation therapy for 2 weeks to 26 years. Initial patient interviews were conducted inquiring about general challenges they face with the therapy. Patients were then asked to use an online Tablet-based patient journal for a month, to document important activities and challenges related to anticoagulation. Finally, exit interviews validated journaling and clarified issues patients encountered managing their condition. We used patient-oriented workflow approach as the conceptual framework.

**Results:** Our preliminary analysis revealed the following characteristics of gaps: (1) Gaps are more obvious in hectic times (such as Christmas, birthdays, travels) than the regular times; however they may also be the result of conflict between requirements of therapy and daily routines; (2) Gaps are related to patient complexity which are beyond clinical complexity; (3) Gaps are results of multiple patient related and system related factors; (4) Gaps lead to poor patient satisfaction; (5) Gaps lead to additional cognitive and physical workload on patients; (6) Patient generated strategies (such as establishing routines) can help patients; (7) Social environment is an important contributor of narrowing or widening gaps.

**Implications:** Knowledge of the challenges patients face with a chronic condition has been a void in our understanding of patients after they leave the clinic/institution. We fill an important gap in the self-management and chronic disease literature by focusing on the "gaps" between therapy plans that was developed in clinical settings and health related activities in daily living settings. Gaps can lead to lack of adherence. A contextual understanding of individuals' daily living in the management of chronic disease, can help nurses better problem solve the barriers, or provide assistance to augment the patient's successful management. Moreover, collaborative health information technologies can link currently disconnected clinical and consumer technologies can potentially help clinicians' better understanding of daily routines and daily context of patients. This study was supported by AHRQ under award number R03HS024092 (PI: Ozkaynak).

# CARE IN THE COMMUNITY

## Burden of Caregiving to Chronically and Terminally Ill Family Members

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**Purposes/Aims:** The purpose of the study is to determine the level and predictors of burden in providing care to chronic and terminal ill family members.

**Background:** Caregivers (CGs) provide significant, intense and relentless care for their elderly loved ones. The burdens of caregiving are severe including physical, mental and psychosocial distress and challenges. These challenges are often debilitating to the caregivers, thus limiting their quality of life, quality of care provided and ability to maintain own health while caring for their sick loved ones. The intensity of caregiving has been incriminated as a major contributor to perceived poor health of caregivers. Family caregivers face time, emotional and physical burden caring for family with chronic and/or terminal illness. Limited studies are available comparing the burden of caregiving for terminally ill and chronic conditions.

**Methods:** We analyzed data from 1997, 2004 and 2009 Care Giving in U.S survey (cross sectional design using telephone interview of a random sample of family caregivers =>18 years and old). Caregiver was defined as those who provide unpaid care to a relative/friends with illness/disability in the past year. Burden was defined as the number of hours spent per week, delivering assistance with specific tasks as well as the number of activities of daily living and instrumental activities of daily living performed. The main illness/problem of recipient was categorized as: None, chronic, terminal and other. Variables included in the analysis were race, age, employment, education, marital status, health status of care givers, and illness of the recipient. Data were analyzed using SPSS V22.

**Results:** Of 3,981 participants, 68% were women, 78% were white, 46% were 50 years and older, 35% had high school education or less, 25% were unemployed, 10% reported fair/poor health status, 44% cared for a recipient with chronic condition, 9% cared for recipients with terminal illness, and 50% reported medium/high burden (56% for chronic condition, and 68% for terminal illness,  $p<0.05$ ).

Relative to care for family with no condition, those who care for family with chronic condition or terminal illness had 2 and 4 times higher adjusted odds to report medium/high burden respectively ( $p<0.05$ ). Predictors of reporting medium/high burden were race/ethnicity (Hispanic/Blacks), age ( $\geq 50$  years), education ( $\leq$  high school), unemployment, and health status (poor/fair) ( $p<0.05$ ).

**Implications:** Medium to high levels of burden was reported by Hispanics and African-Americans caregivers caring for a recipient with terminal or chronic illness who self-perceived their own health as fair/poor. Further research is needed to address cultural perspectives of caregiving, determine best practices of caregiving for chronic and terminal recipients. Specific guidelines are needed to help resolve problems that result from caregiver's strain and burden especially when they care for loved ones with terminal or chronic illness.

# CARE IN THE COMMUNITY

## Engaging Adults with Chronic Illness in Online Depressive Symptom Self-Management

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**Purpose:** This study evaluates participant engagement and effects of an internet-based, self-directed program for depressive symptoms piloted among adults with a chronic disease diagnosis. Specific aims were to (1) investigate potential efficacy related to depressive symptoms and self-efficacy of depressive symptom management, and (2) establish usability by evaluating program engagement and satisfaction.

**Background:** Deficiencies in access to care, mobility limitations, and cost prevent many adults from receiving appropriate evidence-based depression treatments, especially non-pharmacological options. Particularly amongst people with chronic diseases, untreated depression can add to the burden of health care costs and often assumes a chronic course of its own. Innovations are needed to improve access to effective psychological treatments. Ryan and Sawin's Individual and Family Self-Management Theory (2009) was used as our framework to test an online depressive symptom management intervention that is based on well-established cognitive behavioral therapy techniques.

**Methods:** A randomized controlled study was conducted and recruited adult outpatients from clinical sites in the western United States and via online advertisements. Eligible participants ( $N = 47$ ) were randomly assigned to either the "Think Clearly About Depression" online depression self-management program or the control group. Data were collected at baseline and after 8 weeks of program activity. Two validated instruments were used to collect data using online surveys on the primary outcomes: (1) The Patient Health Questionnaire-8 to measure depressive symptom burden, and (2) The Chronic Disease Self-Efficacy Scales to measure confidence in managing disease and symptoms.

**Results:** Number Needed to Treat analysis indicated that 1 in every 3 treatment group participants found clinically significant reductions in depressive symptoms by Week 8. Paired sample  $t$  tests (pretest/post-test) showed significant improvements on depressive symptoms ( $p < .05$ ) and self-efficacy in management of depressive symptoms ( $p < .05$ ) over time for those in the treatment group ( $n = 22$ ) and not for those in the control group ( $n = 25$ ). Participants' engagement and satisfaction with the online program were high, with an average score of 5.7 ( $SD = 1.5$ ) on a 1 to 7 satisfaction scale where 7 was the highest possible score.

**Implications:** The piloted online program was easy for participants to navigate and compares favorably to other non-pharmacological depression treatments. The greatest improvements within our study population were seen for those participants who engaged 100% in the program activity and had the highest depressive symptom burden at baseline. Self-management programs that aim to empower people with chronic illnesses may assist in reducing depressive symptom burdens. Future research can link improvements in depressive symptoms and self-efficacy to improvements in overall disease management and health outcomes.

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Funding: Inland Northwest Community Foundation.

# CARE IN THE COMMUNITY

## Facilitating Community-Based Palliative Care for Older Adults with Advanced Illness

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**Purpose:** We explored the facilitators and barriers to community-based palliative care (CBPC), and described the prevalence of visits for advanced illness and symptoms among older adults in primary care to identify who might benefit from palliative care.

**Background:** The delivery of (CBPC) has increased in the U.S. over the past decade, providing care for older adults living in the community with advanced illness and high symptom burden. However, we lack a description of older adults who might benefit from this model of care, and an understanding of the interdisciplinary processes essential to the delivery of CBPC.

**Methods:** To explore facilitators and barriers to the provision of CBPC, 20 semi-structured interviews were conducted with participants from the disciplines of nursing, medicine, social work, and chaplaincy in academic and community health systems with established CBPC programs recruited through snowball sampling. Interviews were audio recorded, transcribed verbatim and analyzed using Grounded Theory techniques. To provide a description of visits for advanced illness in primary care that might benefit from CBPC, a secondary analysis of the National Ambulatory and Hospital Medical Care Surveys 2009-2011 was done using ICD-9 codes from the National Committee for Quality Assurance Palliative and End of Life Care Physician Performance Measurement Set.

**Results:** Four major themes emerged from the qualitative data regarding the interdisciplinary processes that facilitated and impeded the delivery of CBPC: (1) clarity of roles (2) communication and feedback (3) workforce and time constraints (4) education. Interdisciplinary collaboration was facilitated by defining roles and responsibilities; frequent communication and feedback by meeting, EMR, or secured email; and education to define appropriate referral criteria to CBPC. Collaboration was negatively impacted by previous poor communication between primary and palliative care team members that prevented a shared understanding of patient needs and goals of care. Referrals to CBPC by specialists impeded involvement of primary care team members if they were not involved in ongoing care coordination. These qualitative findings formed the basis of a conceptual model that can be used to design and test interventions to facilitate the delivery of CBPC. The quantitative analysis found that from 2009-2011, of the 357,124 weighted visited to primary care among adults age 65+ over, 8% were due to advanced illness and related symptoms. Advanced illnesses included COPD (50.6%), CHF (25.1%), dementia (9.1%), cancer (8.4%), and Parkinson's disease (4.1%). Symptom diagnoses associated with advanced illness were pain (30.6%), depression (17.1%), anxiety (14.4%), fatigue (12.6%), insomnia (9.9%), dyspnea (8.8%), and constipation (4.5%).

**Implications:** We identified older adults in primary care with types of advanced illness and symptoms that could benefit from referral to palliative care. In addition, we provided a conceptual model that can serve as a guide for the development of interventions to address interdisciplinary roles and responsibilities to deliver care, modes of communication and feedback, education about palliative care, workforce training, and policy to provide reimbursement for palliative care delivery and care coordination.

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**Funding:** John A. Hartford Foundation Patricia Archbold Predoctoral Scholar Award.



**Abstracts of Podium Presentations**

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**CHALLENGES IN CHRONIC ILLNESS**

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**ORTHOREXIA NERVOSA AND OBSESSIVE COMPULSIVE  
SYMPTOMS AMONG UNIVERSITY STUDENTS**

*Kholoud Khalil, Christine Costa*

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**INCREASING HPV VACCINATION  
AMONG COLLEGE MALES**

*Suzanne Marie Martin, Deanna Kepka*

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**NEVADA NATURALLY-OCCURRING ASBESTOS  
COMMUNITY ENGAGEMENT STUDY**

*Sandra W. Kuntz, Charlene A. Winters, Tanis Hernandez*

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**FACTORS ASSOCIATED WITH RETENTION IN CARE  
FOR PERSONS LIVING WITH HIV IN RURAL COLORADO**

*Lucy J. Graham, Paul F. Cook, Paula Meek, Leli Pedro, Lucy Bradley-Springer*

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**THE DECISION-MAKING PROCESS FOR COMPLETING  
LATENT TB TREATMENT: A GROUNDED THEORY**

*Fayette Nguyen Truax*

# CHALLENGES IN CHRONIC ILLNESS

## Orthorexia Nervosa and Obsessive Compulsive Symptoms among University Students

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**Background:** Orthorexia Nervosa (ON) is a disordered eating pattern that focuses on an obsession with healthy eating. Although this is not currently considered a diagnostic category in the DSM-5, this behavior impacts quality of life and can result in distress.

**Purpose:** To establish preliminary demographic characteristics of Orthorexia Nervosa (ON) and to explore the relationship between orthorexia features and obsessive-compulsive pathology in male and female university students.

**Methods:** 217 undergraduate university students in Southern California completed a self-reported questionnaire. The paper survey included demographic items, ORTO-15, and OCI-R. The ORTO-15 is a valid and reliable instrument for the diagnosis of orthorexia to assess obsessive attitudes related to healthy eating and determines the prevalence of attitude and behavior related to the consumption of eating healthy food. OCI-R used to measure OCD symptom frequency, composed of 18 items in 6 subscales scored on a five- point scale.

**Analysis:** Descriptive and correlational analysis using independent t-test and ANOVA.

**Results:** The preliminary data analysis showed one third of the scored below the cutting score of 40 on ORTO-15. There was a statistically significant difference between male and female on ORTO-15 total score but not on OCI-R scale. A significant correlation between ORTO-15 total score and OCI-R total score. Orthorexia nervosa predicts only 10% of obsessive-compulsive disorder behaviors in the sample. Significant negative correlations were found between ORTO-15 total score and five out of six OCI-R subscales, the Pearson's correlations for (checking, Hoarding, neutralizing, obsessive behaviors, and ordering were -.271, -.291, -.276, -.300, and -.287 respectively. There was no significant correlation with the washing OCI-R subscale in this population.

**Implications:** Participants with less orthorexia nervosa related symptoms have fewer tendencies to show Obsessive behavior disorder behaviors. Further tool psychometric studies on ORTO-15 scale are needed to evaluate its validity, reliability, and scoring criteria in different populations.

**Keywords:** Orthorexia Nervosa, Obsessive-compulsive Disorder, Eating Disorders.

# CHALLENGES IN CHRONIC ILLNESS

## Increasing HPV Vaccination Rates among College Males

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**Background:** Human papilloma virus (HPV) affects 75% of sexually-active adults, most often adolescents and young adults. The HPV vaccine was recommended for all females, ages 11 to 26, in 2006, and for all males, ages 11-21, up to age 26 if at greater risk for HPV-related illnesses and cancers in 2009. Healthy People 2020 aims to achieve an 80% vaccination rate among all individuals, ages 13-15. Current rates of HPV vaccination, especially among adolescent and young adult males are significantly below this goal. The University of Utah Student Health Center (SHC) strives to maintain a strong pro-vaccine culture that encouraged optimal vaccine uptake, but suspected they were not meeting this goal when it came to vaccinating males against HPV.

**Aim:** The performance goal for this project was to achieve a 20% HPV vaccine initiation rate among male college students, ages 18 to 26 years, who are covered by the student health insurance plan (SHIP). This performance goal was based on the average of two external benchmarks: the 2014 HPV vaccination rate among males, ages 19-26 of 8.2% reported by the Centers for Disease Control, and the 2015 HPV vaccination rate among college males of 35% reported by the National College Health Assessment-II. Using the average of these two benchmarks offered a robust and realistic performance goal.

**Methods:** A focus group of the entire SHC staff was conducted by an independent researcher from the University of Utah College of Nursing. The aim of this focus group was assess educational needs related to HPV and the HPV vaccine, and to explore possible barriers to HPV vaccination among college males. Based on results of the focus group, an EMR alert was created to remind providers to discuss and offer the HPV vaccine to male participants at all scheduled office visits. Retrospective chart reviews were completed to measure HPV vaccine initiation rates 1 year before (baseline) and 8 months after (post-EMR) the EMR alert was implemented. Before and after HPV initiation rates were compared to each other, and also to the performance goal.

**Results:** The baseline HPV vaccine initiation rate was 5.2%, and the post-EMR alert HPV vaccine initiation rate was 25.1%, the later surpassing our performance goal of 20%.

**Conclusions:** This project demonstrated how a process change can improve patient care, and underscored the importance of including front line staff when designing qualify improvement initiatives.



# CHALLENGES IN CHRONIC ILLNESS

## Nevada Naturally-Occurring Asbestos Community Engagement Study

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**Purpose/Aims:** The purpose of this study was to establish a strong foundation for shared ownership and community engagement in a nationally-funded research effort. Work with our community partners addressed the following aims:

- Aim 1: Establish an understanding of the community and community member's primary concern(s) related to naturally-occurring (amphibole) asbestos (NOA).
- Aim 2: Develop guiding principles to support the community/researcher partnership and facilitate community engagement, consistent with community norms.

**Rationale/Conceptual Basis/Background:** Studies conducted in Southern Nevada (SN) by University of Nevada Las Vegas (UNLV) geologists and researchers from the Nevada Department of Transportation have confirmed the presence of NOA in areas frequented by recreationalists, tourists, and area workers. A community action group (CAG), formed in 2015 by concerned citizens of SN, created awareness of the presence of NOA among community members, scientists, and government officials at all levels. Exposure to low-levels of amphibole asbestos has been linked to malignant (cancers) and non-malignant disorders (pleural fibrosis, asbestosis, and autoimmune disease) as well as psychological distress and decreased quality of life. A model developed by the authors as a result of research in a community contaminated with amphibole asbestos identified respect, clear communication, mutual trust, integrity, and shared ownership as essential components of community-based participatory research (CBPR) and research engagement.

**Methods:** An exploratory, CBPR approach was used for this study. After consultation with the SN CAG and our community partners, a remote and an on-site community assessment of the area impacted by NOA was conducted. The assessment was documented via pictures and field notes (Aim 1). Next, public forums/listening sessions were employed using open ended questions to learn about the community and elicit community concerns around NOA (Aims 1 & 2). Focused interviews were conducted with community partners and researchers to identify guiding principles and strategies to support partnership and engagement (Aim 2).

**Results:** Deductive and inductive processes were used to analyze the qualitative data from focus groups, community forums/listening sessions, and interviews. Content analyses uncovered four primary themes and community health concerns regarding NOA: What are the exposure risks of adults and children? What precautionary measures should we take during outdoor activities? There are asbestos action levels for workers (OSHA)--what are the action levels for communities? What are the responsibilities of federal, state, and local officials to protect the public from exposure? Transparency, honesty, and open, consistent, and responsive communication are required for authentic partnerships and active community engagement.

**Implications for Translation to Practice/Further Research:** CBPR was successfully used to determine community member concerns about exposure to NOA and guiding principles to ensure best practices of community engagement in research. Community members clearly directed researchers to pursue research related to potential exposure of SN recreationalists, children, and community members to answer the question: Are we being exposed?

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**Funding:** Zeta Upsilon Chapter (MT) of Sigma Theta Tau, International.

# CHALLENGES IN CHRONIC ILLNESS

## Factors Associated with Retention in Care for Persons Living with HIV in Rural Colorado

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**Purpose:** The purpose was to explore the relationships among demographic, clinical, and psychological variables that affect retention in care for PLWH in rural western Colorado.

**Rationale:** The majority of people living with HIV (PLWH) are not retained in regular care. Retention in care is critical to reducing HIV-associated morbidity and mortality, is a national priority outlined in the United States National HIV/AIDS Strategy, and is particularly challenging in rural populations. However, current research is focused on urban populations.

**Methods:** Using logistic regression and mediation analysis, we explored predictors of retention in care among English- or Spanish-speaking PLWH in a predominately rural region of Colorado. We also examined coping as a potential mediator of other variables' effects on retention. Retention in care was defined as an absence of any missed visits ("no shows"). Through survey and electronic medical record data, we obtained information on distance from participant residence to clinic, rurality, age, gender, race/ethnicity, education, HIV risk factor, country of origin, years living with HIV, health literacy, substance abuse, depression, coping, health locus of control, and the patient relationship with the health care team.

**Results:** Among 127 participants (mean age = 49 years; 65% male; 70% White), 48% attended or canceled in advance all HIV visits; 52% missed greater than or equal to one visit since they first entered care at the clinic. Living farther from the clinic [ $OR = 0.991$ ,  $p = .007$ , 95% CI = .984-.997], inadequate health literacy [ $OR = 0.28$ ,  $p = .002$ , 95% CI = .13-.61], residing in a less rural area [ $OR = 0.74$ ,  $p = .009$ , 95% CI = .59-.93], screening positive for depression [ $OR = 0.35$ ,  $p = .01$ , 95% CI = .16-.79], HIV risk factors of heterosexual contact [ $OR = 0.43$ ,  $p = .03$ , 95% CI = .20-.91], and injection drug use versus men who have sex with men (MSM) [ $OR = 0.06$ ,  $p = .01$ , 95% CI = .007-.51] decreased the odds of being retained in care. Denial coping [ $OR = 1.41$ ,  $p = .003$ , 95% CI = 1.12-1.78] and substance abuse coping [ $OR = 1.26$ ,  $p = .035$ , 95% CI = 1.02-1.55] increased the odds of missing visits, but only denial coping mediated the effects of health literacy [Indirect Effect = -.325, 95% CI = -.826, -.035], depression [Indirect Effect = .204, 95% CI = .004, .61], and reporting heterosexual contact versus MSM as a risk factor [Indirect Effect = -.206, 95% CI = .012, .577] on retention in care. When all significant predictors from univariate analyses were combined in a multivariable logistic regression model, 36% of the variance in missed visits was explained by miles to care, health literacy, depression, and risk factor.

**Implications:** The results underscore the importance of routine health literacy and depression screenings. Nurses are ideally suited to address positive screens. The high percentage of PLWH with missed visits also suggests a need for innovative care access projects, such as virtual visits. Nurse scientists are needed to study and disseminate evidence on successful interventions to improve retention in care.

# CHALLENGES IN CHRONIC ILLNESS

## The Decision-Making Process for Latent TB Treatment: A Grounded Theory

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**Purpose:** The purpose of this constructivist grounded theory study was to generate a middle range theory to describe and explain the experiences of Vietnamese immigrants' decision to accept, initiate, and complete treatment for latent tuberculosis infection (LTBI).

**Description of Theory:** The grounded theory model entitled "The Decision-Making Model for Latent TB Infection Treatment and Completion" was developed from the testimonies of 17 Vietnamese immigrants who underwent LTBI treatment from the Orange County Pulmonary Health Department. Three primary decision-making points were identified that was critical to the development of the model and each point had its own set of categories/concepts influencing it. The first decision "treatment acceptance" was influenced by three categories: personal beliefs, TB awareness, and trust in healthcare system. The second decision "treatment initiation" was influenced only by personal barriers. Lastly, the decision to "complete treatment" was influenced by multiple categories that include: self-determination, medication side effects, self-management of symptoms, family support and self-efficacy.

**Internal Consistency of Theory:** According to Fawcett, internal consistency requires that all elements of the theory are congruent. The proposed model described a six-month process with three major decision points. All of the categories identified in the model fits well with each other and are grouped under one of the three major decision points as noted above. The individual categories identified help explained why some participants drop out at certain points in the treatment plan and why some continue on with the treatment prescribed by officials. The categories proposed are congruent to each other and consistent.

**Logic Linking Theory to Practice:** The proposed theory was developed to help understand the decision process of accepting, initiating and completing LTBI among a group of Vietnamese immigrants identified as having high rates of non-adherence. Qualitative data from the 17 participants identified reasons for their behaviors to end or continue treatment. Non-adherence behaviors are very difficult to understand from quantitative data alone, therefore testimonies from individual experiences can assist providers to have a better understanding of the challenges this population encounters. The model identified clear points in the treatment that are most challenging for participants to remain adherent. Clinicians can use the model to intervene appropriately.

**Conclusion:** Results from this study can assist providers caring for Vietnamese immigrants gain a better understanding of the barriers that effect each stage of the decision-making process related to LTBI treatment completion. Providers can develop interventions aimed at reducing the barriers identified by the participants at each of the three points identified. In addition, the model can aid in the design of a culturally-sensitive intervention aimed at improving LTBI treatment completion, thus reducing future active TB cases in the community.

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Funding: This work was supported by the National Institute of Health (NIH)/Nursing Research (NINR) T32 NR007077.

**Abstracts of Podium Presentations**

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**CULTURAL ISSUES IN RESEARCH AND  
PRACTICE**

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**BEST PRACTICE MODEL FOR RESEARCH  
APPROVAL WITH AMERICAN INDIAN TRIBES**

*Rebecca Carron, Sarah A. Kooienga, Judith Antell, Torivio Fodder,  
Esther Gilman-Kehrer, Ruben Alvero, Diane Boyle*

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**A CONCEPTUAL MODEL FOR HOME BASED  
PRIMARY CARE OF OLDER REFUGEES**

*Mary A. Nies, Carmen Febles, Kelly Colleen Fanning, Susan Tavernier*

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**A QUALITATIVE STUDY OF THE CHALLENGES  
FACING REFUGEES IN JORDAN & GREECE**

*Nicolette Broby, Jane H. Lassetter, Mary Williams, Blaine Winters*

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**ACCEPTABLE CULTURALLY RELEVANT  
LIFESTYLE INTERVENTION FOR FILIPINOS**

*Melinda S. Bender, Dale Dagar Maglalang, Grace J. Yoo, Carissa Villanueva,  
Rhodora A. Ursua, Catherine A. Chesla*

# CULTURAL ISSUES IN RESEARCH AND PRACTICE

## Best Practice Model for Research Approval with American Indian Tribes

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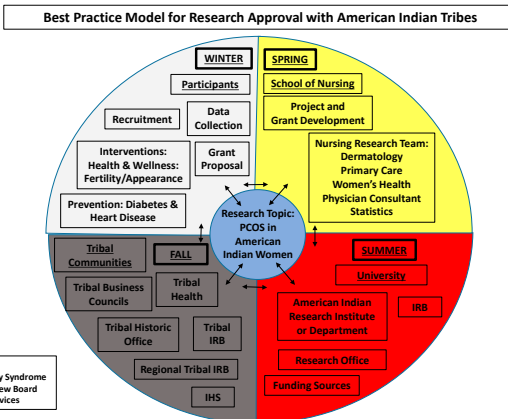
**Purpose:** We developed a descriptive model to guide nurse researchers through the complex academic and tribal approval process so they can initiate nursing research within American Indian tribes. The model is based on the American Indian medicine wheel which incorporates the four seasons of spring, summer, fall, and winter. Nurse researchers can follow the seasonal flow and steps outlined in the four sections to learn about the documentation that may be necessary to obtain academic and tribal institutional review board (IRB) approvals.

**Background:** Polycystic ovary syndrome (PCOS) is a common androgen-excess endocrine disorder and affects 6-15% of the female population. The PCOS symptoms and problems that matter most to American Indian women with PCOS are not known. Our best practice model is part of a larger project examining PCOS in American Indian women. Gaining access to American Indian tribes for our research project was not easy, because many past research projects have either not been beneficial to the tribes or violated tribal protocol. Trust with American Indian tribes had to be established and prescribed tribal protocols followed for research approval.

**Approach:** The approach described in our model involved establishing trust and relationships with key stakeholders in our school of nursing, university, and American Indian tribes. Members of the American Indian research institute at our university were key cultural navigators for the project. Beginning with the research question which is central to the model and informs activities in all seasonal quadrants, our model outlines relationships we established, and activities we undertook at the school of nursing (spring section of model), university (summer section), and tribal level (fall section) for the development, approval, and initiation of our project. The model concludes with the winter section where recruitment, data collection, and interventions for participants begin. The circular medicine wheel is appropriate for our model because the adjacent quadrants indicate the model is fluid and dynamic allowing for individual project variations. The central research question allows researchers to work on several quadrant activities simultaneously.

**Outcomes Achieved:** American Indian tribes want research projects that will benefit them. Our study will directly impact the health and well-being of women with PCOS in American Indian tribes. In particular, our model demonstrates that researchers may need additional IRB approval beyond their academic institution. American Indian tribes may have their own IRB process, or they may have delegated IRB oversight to a regional IRB board that may have its own IRB protocol for tribal research. If researchers want to use Indian Health Services in their project, this may require additional approval. Researchers may need the approval of tribal health departments and/or tribal historic preservation offices, particularly if the project collects culturally sensitive information. Ownership of data between tribe and researchers needs to be negotiated in the IRB process, as well as guidelines for dissemination of results.

**Conclusions:** Our model provides guidance for nurse researchers considering a research project with tribal communities. By following our medicine wheel approach, nurse researchers can successfully navigate the university and tribal approval process.



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# CULTURAL ISSUES IN RESEARCH AND PRACTICE

## A Conceptual Model for Home Based Primary Care of Older Refugees

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**Purpose:** Responding to a lack of literature addressing best practices in the provision of home based primary care (HBPC) for refugee communities, we developed a conceptual model for the provision of home based primary care of refugee that addresses the needs of both the refugee population and primary care providers.

**Background:** Healthcare providers face a host of challenges - political, religious, cultural and linguistic - when caring for refugee patients, each further complicated by the impacts of violence, trauma or torture, which care providers may not even be aware of at the initial contact with the individual. While a wealth of literature addresses clinical practices with refugees, very little is available regarding HBPC of refugees, an increasingly important aspect of care. This conceptual model provides a method to develop and test a best practice model and interventions for primary care of refugees.

**Method:** In order to develop the model, an extensive literature review was performed by searching nursing and cross-disciplinary databases including CINAHL, EBSCOHOST, and Pub Med, as well as Google Scholar. Peer-reviewed articles from other areas of study, such as political science and anthropology, were utilized to supplement health care literature when the studies provided depth of information regarding the sociological, anthropological and historical factors involved in the provision of home based primary care services to refugees.

**Overview of Model:** Our conceptual model of care is oriented to the most recent and effective primary care models for permanent resident refugees as articulated in the literature and based on our experience providing care to refugees. We have specifically focused on the aspects of HBPC for refugees as opposed to HBPC for the general surrounding population residing within their own cultural context, allowing a focus on the elements of care identified as most affecting health and quality of life outcomes for refugees receiving HBPC and, separately but relatedly, practitioner collaboration. The key inputs for improved health and quality of life outcomes identified are: 1) Linguistic communication; 2) Cultural safety; and 3) Interprofessional team. The model depicts the importance of trust in facilitating health outcomes and quality of life for refugees. The presentation will provide a detailed discussion of each of the components of the model and present a diagram of the model for nurses to use as a framework in providing health care interventions to refugees and for doing further research.

**Implications for Nursing Research and Practice:** This conceptual model is a starting point from which to develop and test a best practice model for the HBPC of refugees, which will lead to improved health outcomes and quality of life for refugees as well as improved practitioner collaboration through the implementation of interprofessional teams.

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**Funding:** Health Resources and Services Administration (HRSA) Grant No. 1 UD7HP28528 0100.

# CULTURAL ISSUES IN RESEARCH AND PRACTICE

## A Qualitative Study of the Challenges Facing Refugees in Jordan & Greece

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**Purpose/Aims:** Our qualitative descriptive study illustrates and summarizes the challenges families face in refugee camps in Jordan and Greece as well as important considerations for healthcare providers helping them.

**Rationale/Background:** Since the civil war began in Syria, approximately 4.8 million Syrians, about half of whom are children, have left their homeland seeking safety. Many of these people have relocated to refugee camps in Jordan and Greece. Their situation has focused attention to the plight of refugees worldwide. As the host countries and relief organizations struggle to meet the refugees' needs, there are many challenges to consider.

**Methods:** We gathered data using a qualitative descriptive design. The first author conducted 8 semi-structured interviews with 4 well-known international medical response organizations and informal interviews with 28 key personnel at 3 refugee camps and community outreach facilities in Jordan and Greece. Other data include fieldnotes of on-site observations. The semi-structured interviews were transcribed verbatim. We used content analysis to identify patterns in the interview transcripts and fieldnotes. In team meetings, we discussed and coded the data to identify categories and themes.

**Results:** Although host countries and refugee camps differ, refugees experience similar challenges. These include coping with the trauma and danger they have tried to leave behind, yet they continue to struggle to find safety and stability in their current circumstances. Baseline concerns include scarcity of nutritious food, poor sanitation, safety issues, and limited access to electricity, healthcare, and medications. Their well-established family dynamics shift in the refugee camps as their cultural norms collide with the host country's norms. In some cases, fathers suffer from PTSD and depression from their recent war traumas and lash out, becoming abusive. Some mothers experience similar mental health problems and face safety threats, lack of privacy, and scarce personal time. Among other challenges, children and adolescents face abuse, neglect, and limited opportunities for education. Their circumstances make them vulnerable to opportunistic predators such as sex traffickers and ISIS.

**Implications:** To begin addressing the needs of refugees, it is important to consider Maslow's hierarchy of needs. This perspective suggests a focus on providing safe living conditions, including sanitation and housing respectful of the refugees' cultural norms and healthcare that is culturally sensitive and recognizes gender-based needs. To improve the health and well-being of the refugees, a variety of nutritious foods that are familiar and simple to prepare are needed. Because there is so little for refugees to do while in these camps, providing meaningful activities for children and adults could help improve their well-being.

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Funding: (1) Elaine Dyer Award, Brigham Young University, College of Nursing (2) Graduate Research Fellowship Award, Brigham Young University, Office of Graduate Studies.

# CULTURAL ISSUES IN RESEARCH AND PRACTICE

## Acceptable Culturally Relevant Lifestyle Intervention for Filipinos

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**Background:** Filipinos have the highest prevalence for type 2 diabetes (T2D) among Asian American subgroups. Effective intervention strategies are needed to improve diabetes self-management, particularly for Filipinos with T2D. Mobile health weight loss lifestyle interventions can be effective in reducing chronic disease risks in some populations, but are untested in Filipinos. Moreover, culturally adapted lifestyle interventions have been more effective for weight loss in racial/ethnic groups than interventions that are not culturally adapted. Given their prolific use of digital technology, Filipinos are ideal candidates for mobile health weight loss lifestyle interventions to reduce diabetes and subsequent heart disease risks.

**Objective:** This qualitative descriptive study aimed to describe participants' perceptions about acceptability and cultural relevance of the PilAm Go4Health intervention – a culturally adapted weight loss lifestyle intervention using mobile technology to reduce cardio-metabolic risks for Filipino Americans living with T2D. This qualitative study was part of a larger 2-arm (intervention + wait-list control groups) randomized controlled trial of the 6-month intervention study (3-month intervention + 3-month maintenance). The control group received the intervention after the 3-month control period.

**Methods:** Semi-structured 1:1 interviews were conducted post-intervention and after the follow up period with 22 participants randomized to intervention, and post intervention only in 23 wait-list control participants. Filipino adults with T2D were recruited from Northern California communities. Participants mean age was 57.6 years (SD +10 years). Four separate reviewers conducted thematic analysis of interview data to identify participant responses to key elements of the intervention for Filipinos.

**Results:** Four major intervention themes were identified: 1) cultural tailoring and Filipino research staff enhanced engagement and promoted healthy behavior change; 2) using mobile technology stimulated personal agency and empowerment for achieving weight loss goals; 3) perception of diabetes self-management changed from despair to self-efficacy; and 4) suggested program improvements included enhanced support for: tracking diet, challenges with mobile technology, more Facebook social interaction, physical activity option for older adults, and greater geographic proximity of the research office to Filipino neighborhoods.

**Conclusion/Implications:** Overall, the PilAm Go4Health intervention was acceptable and culturally relevant for Filipino Americans with T2D. Findings will help inform health providers and researchers on developing and designing interventions to improve diabetes self-management, particularly with at-risk diverse populations. Results lay the foundation for a larger RCT to test the effectiveness of the PilAm Go4 Health intervention to reduce cardio-metabolic disease risks for Filipinos living with T2D.

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**Abstracts of Podium Presentations**

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**CULTURE OF NURSING PRACTICE**

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USING CISL TO FACILITATE CULTURAL  
CONSCIOUSNESS IN NURSING STUDENTS

*Julie H. Ruff*

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NURSE RESIDENT SOCIALIZATION AND  
ENCULTURATION TO THE PRACTICE ENVIRONMENT

*Kim Failla, Laurie Ecoff, Jaynelle F. Stichler*

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COMPASSION FATIGUE: REDUCING  
ATTRITION THROUGH EDUCATION

*Kate G. Sheppard*

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A PILOT PROJECT TO ENHANCE EMPLOYMENT  
OPPORTUNITIES AND DIVERSITY IN NURSING PRACTICE

*Judy Crewell, Amanda Quintana, Amy Mills, Sara L. Jarrett, Karen Pennington*

# CULTURE OF NURSING PRACTICE

## Using CISL to Facilitate Cultural Consciousness in Nursing Students

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**Purpose/Rationale:** Cultural consciousness is a central element of purposeful and appropriate health care delivery that integrates knowledge, sensitivity and understanding (Korton & Sahtouris, 2001). The preponderance of research across a variety of disciplines suggests that cultural consciousness and awareness is strengthened through self-reflection (Axtell, Avery & Westra, 2010; Danielewicz, 2001; Furlong & Wright, 2011; Gay & Kirkland, 2003; Rew, 2014), dialogue about race (Murray-Garcia, Harrell, Garcia, Gizzi, & Simms-Mackey, 2014), and experience within other cultures (Fredericks, 2006; Kozub, 2013; Peaz, Allen, Carson & Cooper, 2008; Stone, et.al., 2014). The purpose of this study was to examine nursing students' perceptions of cultural consciousness pertaining to American Indian culture developed during a one-week cultural immersion service learning (CISL) experience. Specifically, the overarching research question central to the focus of this study was: How do nursing students at this university describe their CISL experience? Three sub questions were posed to inform the main research question.

**Methods:** An intrinsic single case study design bounded by the students' perceptions of a cultural immersion service learning experience within an American Indian community was used to answer the research questions. Thirty participants were selected from two cohorts of nursing students enrolled in Nursing Care of Children and Family, a required junior-level course participated in a one-week CISL experience. Data included instructor observations and two sets of student reflections. The data were analyzed using the constant-comparative method (Strauss, 1987).

**Results:** Evidence from clinical reflections demonstrated most students wrestled a mismatch between their initial expectations and the reality of the situation, but several weeks afterward two-thirds of the students integrated the CISL experience into a coherent whole in which cultural consciousness emerged in their reflections.

**Implications:** The findings from this study suggest that incorporating CISL experiences into undergraduate nursing curricula may facilitate the development of cultural consciousness and the skills needed for culturally competent care in student nurses. Also, there appeared to be a link between students' ability to recognize their societal privilege, the close proximity of healthcare disparities, and cultural consciousness. Additionally, recommendations were provided for developing a CISL experience within an undergraduate nursing program.

# CULTURE OF NURSING PRACTICE

## Nurse Resident Socialization and Enculturation to the Practice Environment

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*San Diego State University*  
*San Diego, CA*

**Purposes/Aims:** The purpose of this study was to determine the effectiveness of a new graduate Nurse Residency Program (NRP) which provides social support and evidence-based program elements.

**Rationale/Conceptual Basis/Background:** New graduate nurses (NGNs) face many challenges as they transition from student to professional nurse. As many as 50% of NGNs leave their first position within 12 months of employment. The cost of turnover is over \$80,000 per nurse and turnover is disruptive to organizational culture and effectiveness, a threat to patient safety and a concern with the impending nursing shortage.

Social support is one of the most effective means to socialize NGNs to the practice environment. NGNs have difficulty integrating into existing social structures on their assigned units as well as learning new roles. To ease the process of professional socialization, the NRP used Boychuk Duchscher's Transition Stages Model to guide NGNs as they transition into the practice environment.

Professional socialization is the process of acquiring and internalizing knowledge skills, values, roles, attitudes, and norms associated with the practice of a profession. The Transitions Stages Model consists of three processes including "knowing," "becoming" and "doing." Knowing includes the academic stage, but more importantly, hiring the right NGN for the organization. The hiring process must focus on assessing NGN values, attitudes and fit with the organization. Becoming commences when the NGN is hired into the residency program, then given guided, supported and dependent role in the healthcare setting. Additionally, the NGN is guided through mastery of skills through repetition, reflective learning and looping opportunities that expose the full continuum of care.

**Methods:** After IRB approval, a quantitative time-sequenced design was used to survey NGNs hired into the NRP at year 1 and year 2. Participation was voluntary and completion of study instruments implied consent. Measures included the: 1) Survey of Perceived Organizational Support (Eisenberger et al.); 2) Person-Organization Fit Scale (Cable et al.); 3) Occupational Coping Self-Efficacy Scale for Nurses (Pisanti et al.). Actual turnover rates were determined through human resources data.

**Results:** One-year retention rate for the NRP is 97.2% (n=108) as compared to the national benchmark range of 63.2% to 93.6%. Significant differences ( $p < .05$ ) in mean scores for person-organization fit ( $M = 4.02$  to  $M = 4.31$ ), perceived organizational support ( $M = 3.09$  to  $M = 3.30$ ), and coping self-efficacy ( $M = 3.60$  to  $M = 3.87$ ) in year 1 versus year 2 demonstrate the importance of NGN professional socialization.

**Implications:** Doing, also known as integrating occurs after the becoming (orientation phase) and should include mentoring, peer-group activities and the advancement of the profession through evidence-based practice initiatives. NGNs should be encouraged in this stage to become involved with unit practice councils, projects and committees, and professional associations. Given the right amount of support, NGNs can successfully become enculturated into healthcare organizations. This enculturation creates an aligned workforce ready and willing to care for patients and improve health outcomes.

# CULTURE OF NURSING PRACTICE

## Compassion Fatigue: Reducing Attrition through Education

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**Purpose:** To describe a pilot program of education and self-care interventions to address compassion fatigue among registered nurses and nurse practitioner students.

**Background:** Compassion fatigue is defined as a distressing and potentially debilitating result of working in service-related professions such as nursing; it is frequently labeled as the cost of caring. The construct includes the concepts of burnout, which stems from the work environment, and secondary traumatic stress, which is the emotional response to witnessing the pain and suffering of others. As negative emotions build, many also experience physical symptoms such as fatigue, back pain, headaches, and a sense of depletion. Recent evidence points to outcomes of unresolved compassion fatigue, including self-medicating, increased absence from work, poor work performance, changing jobs, changing roles, and leaving the profession entirely.

**Method:** Participants were recruited from a graduate nursing program at a College of Nursing. Participation was voluntary and the researchers and college personnel were unaware of which students participated. Participants (N=59) began the education and intervention program by taking the ProQOL-5 (Professional Quality of Life) Questionnaire, a brief instrument that describes risk of compassion fatigue. 10 modules were presented over 12 weeks, and participants were asked to write 2-3 paragraphs about their reflections of the module content. The modules described compassion fatigue, burnout, secondary traumatic stress, and means to reduce risk through activities such as mindfulness, healthy boundaries, and self-care. Participants journaled emotional triggers, physical and mental symptoms of distress, and efforts to incorporate mindfulness and boundary-setting into their nursing practice. After completing the program, participants took the ProQOL-5 again and submitted the journals. The contents of the journals were thematically analyzed.

**Results:** The pre-intervention ProQOL-5 results indicated that most had minimal risk of compassion fatigue; post-interventions indicated moderate to high risk. Experiences of burnout were seen as “a normal part of the job”. The contents of the first two journals typically consisted of 2-3 brief paragraphs. The third module addressed healthy and blurred boundaries; most of the participants wrote at least one page in their journal that week. Universally, the participants wrote more each week so that by the last module most participants wrote at least two pages of self-reflection. Commonalities included: 1) seeking advanced practice to escape the bedside, 2) hypervigilance, 3) life is unfair – why do bad things happen to good people, 4) tired of feeling caught in the middle [between the patient, family, and doctor], and 5) I have compassion fatigue but that doesn’t mean I don’t care.

**Implications:** Burnout does not appear to be a significant risk factor to compassion fatigue. The emotions associated with secondary traumatic stress were strong predictors of compassion fatigue. Findings from this pilot program suggest that some may consider graduate nursing education as a means to escape symptoms of compassion fatigue. However, a change of role may not be sufficient to reduce the emotional distress and additional interventions may be of benefit. The term compassion fatigue was perceived as stigmatizing and shameful, and an unfitting label for nurses who care.

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Funding: Foundation of the American Association of Nurse Practitioners.

# CULTURE OF NURSING PRACTICE

## A Pilot Project to Enhance Employment Opportunities and Diversity in Nursing Practice

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**Background:** “Minorities, now 37 percent of the U.S. population, are projected to comprise 57 percent of the population in 2060. The total minority population would more than double, from 116.2 million to 241.3 million over the period (U.S. Census Bureau, 2012). So it is essential to have a nursing workforce that will reflect the population of the United States so as to deliver cost-effective, quality care and improve patients’ satisfaction and health outcomes, especially among ethnic and racial minorities” (Adejoke, 2013). However, trends in the nursing workforce may impede the needs of lower-income diverse students. The growing Bachelor’s degree (BSN) expectations of many employers create a dilemma for many diverse and low-income Associate degree (ADN) nursing students who have few financial resources, pressing family income needs, and a limited capacity for another two years of college. Thus, ADN graduates may have significant challenges securing RN positions, particularly in hospitals (HRSA grant). As a result, the Colorado Center for Nursing Excellence partnered with St. Anthony Hospital and Regis University Loretto Heights School of Nursing to offer a Transition to Practice in Critical Care Course for diverse (ADN) new graduates. The project was part of the Health Resources and Services Administration (HRSA) Nursing Workforce Diversity initiative to increase nursing diversity in the state of Colorado.

**Purpose:** The purpose of the project was to provide the opportunity for diverse new ADN graduates to gain additional skills to increase their marketability to enter the nursing workforce, particularly in a specialty area. This critical care skill set may assist the new graduate to be a more viable candidate for employment and to secure a position in a critical care unit, which can be difficult to achieve for a new graduate. A dual purpose was to offer college credits and enrollment in the University to provide an opportunity to complete a BSN degree.

**Methods:** A collaborative partnership was formed to determine best strategies to create the course, to determine the most effective marketing venues and to select the target audience. Interviews were conducted and applicants were selected based on the HRSA grant eligibility criteria. Pre and post course surveys were conducted with a follow up of employment and specialty placement data analysis at 3 month, 6 month, and 12 months post course.

**Results:** Twelve new graduates were accepted into the project based on the grant criteria. Three nurses withdrew due to financial reasons or job acquisition; one did not pass NCLEX. Eight students completed the course. Course evaluations were very positive. All were enrolled in an RN-BSN program by the end of the project. Initial data indicated employment in ICU, high-acuity areas and medical/surgical units. Data collected at the time of abstract submission will be presented.

**Implications for Education and Practice:** The evidence demonstrates the need to enhance diversity in the nursing workforce. This project provided one creative method to enhance marketability for diverse new ADN graduates to increase their employment opportunities, to encourage completion of a BSN degree and to provide diversity in nursing practice.

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Funding: Project Supported by Health Resources and Services Administration (HRSA) Nursing Workforce Diversity Program: # D19HP28485.



**Abstracts of Podium Presentations**

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**DIET AND PHYSICAL ACTIVITY THROUGH  
THE LIFESPAN**

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**DO PRODUCE PRESCRIPTIONS INCREASE  
CHILDREN'S FRUIT AND VEGETABLE CONSUMPTION?**

*Ronit Ridberg, Janice Bell, Alan R. Hunt, Catherine Luu, Kathryn E. Merritt*

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**ROLE OF SUPPORT AND PERCEIVED BARRIERS AND  
BENEFITS IN PHYSICAL ACTIVITY OF ADOLESCENTS**

*Deborah Koniak-Griffin, Sarah Roth, Alec Chan-Golston, Michael Prelip*

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**THE EFFECT OF KINESIOLOGY TAPE  
FOLLOWING ROTATOR CUFF STRESS**

*Robert Topp, Andre Labbe*



# DIET AND PHYSICAL ACTIVITY THROUGH THE LIFESPAN

## Do Produce Prescriptions Increase Children's Fruit and Vegetable Consumption?

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**Purpose:** The purpose of this study is to examine the health outcomes of a fruit and vegetable prescription program for participating children and their families.

**Background:** Almost 17% of American households with children experienced food insecurity at some point during 2015, meaning all household members did not have access to enough food for an active, healthy life. The CDC reports that despite their contribution to a healthy diet and the prevention of chronic disease, only 40% of children age 1-18 consume the federally recommended daily quantity of fruit, and only 7% meet the recommendations for vegetables. Fruit and vegetable (FV) prescription programs combine financial incentives with nutrition education to increase FV consumption in low-income families at risk for diet-related disease. Early research demonstrates that nutrition incentive programs can impact purchasing and consumption; however, few studies have assessed FV prescription programs and none measure pediatric outcomes.

**Methods:** We examined change in FV consumption and BMI z-score among obese and overweight participants ages 2-18 years (n=718) in multiple sites of a clinic-based FV prescription program (2012-2014). Paired t-tests and chi-square tests were used to assess change in FV consumption and BMI z-score from first to last clinical visit. Multiple regression was used to model these outcomes as functions of program specific variables (e.g., # clinical visits, voucher redemption values) and important socio demographic covariates.

**Results:** More than half of participants increased FV consumption (54%; p<0.01) and decreased their BMI z-score (55%; p<0.05) from initial to last visits in the 4-6 month program. Those meeting federal dietary guidelines according to age and sex increased significantly (p<0.01) for consumption of fruits (58% to 71%), vegetables (26% to 37%) and combined FV (24% to 34%). In fully adjusted models, higher prescription redemption values and greater numbers of clinical visits positively and independently were associated with increased odds of increased FV consumption (ORs from 2-3) in an approximate dose-response relationship. The highest redemption values also increased the odds of decreasing BMI z-score from first to last visit (OR 1.4; 95% CI 1.1-1.7, p<0.05).

**Implications:** The clinical intervention of FV prescription programming can promote healthy dietary behavior change for children, an effect that is independent of the number of clinical visits. Specifically, additional clinical visits and higher financial incentives to purchase FV increased the odds of children meeting USDA dietary guidelines for FV consumption. The prescription program studied succeeds in its short-term mission of improving availability, access and consumption of FV, alongside an associated reduction in BMI z-scores – two important indicators for most policy makers. Further research is warranted to study the impact of prescription programs on household-level food security.

# DIET AND PHYSICAL ACTIVITY THROUGH THE LIFESPAN

## Role of Support and Perceived Barriers and Benefits in Physical Activity of Adolescents

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**Purpose:** This study examines factors influencing regular physical activity (PA) among a sample of predominantly Latino middle school students in a large school district in Southern, California.

**Background:** Regular PA provides numerous physical and mental health benefits to adolescents by contributing to healthy growth and development, chronic disease prevention, and weight maintenance. However, few adolescents meet the US Department of Health of Human Services PA recommendations and disparities in PA persist among youth. Younger, white, and male youth engage in more PA than older, Latino, and female adolescents. Social support and perceived benefits and barriers have been identified as two important correlates of PA among youth. A better understanding of the correlates is essential to developing effective interventions to increase rates of PA and reduce disparities for vulnerable groups of young adolescents, particularly those from ethnic minority groups.

**Methods:** Data were collected in a cross-sectional survey of 4,773 seventh-grade students recruited from 16 middle schools. Participants completed an instrument packet that asked questions about social support for PA and perceived benefits and barriers to PA. Anthropometric data were obtained from FITNESSGRAM testing conducted by physical education teachers. Hierarchical logistical regression models tested the determinants of high family support, high friend support, high perceived barriers, and high perceived benefits as well as the association between these correlates and self-reported PA. The three primary outcomes were: 1) exercising every day during the past week for at least 60 minutes, 2) performing exercises to strengthen muscles at least three days in the past week, and 3) participating in at least one sports team in the past year.

**Results:** Half of students (49.7%) identified as female and 69.5% as Hispanic or Latino. The mean age of students was 12.6 years. Only 25.3% reported engaging in PA for at least 60 minutes a day. Females ( $p < 0.001$ ), students with obesity ( $p < 0.05$ ), and students trying to lose weight ( $p < 0.01$ ) have lower odds of reporting an hour of daily PA. No difference in PA outcomes by race/ethnicity were observed; however, speaking Spanish at home ( $p < 0.01$ ) or with friends ( $p < 0.05$ ) was associated with higher support for PA from family and friends, respectively. Support from family and friends were both associated with increased odds of being active ( $p < 0.001$ ,  $p < 0.001$ ). Perceiving more barriers was associated with lower odds of all three outcomes ( $p < 0.001$ ,  $p < 0.001$ ,  $p < 0.001$ ) and Latinos were less likely to report high barriers ( $p < 0.05$ ). Students who reported more perceived benefits to PA had higher odds of exercising daily ( $p < 0.05$ ).

**Implications:** Findings suggest that interventions to promote PA in young adolescents should incorporate strategies to enhance their perception of beneficial effects of PA and address potential barriers, as well as increase social support for PA from friends and family. Further exploration is needed to determine the best approaches for engaging adolescent girls, overweight and obese students and those trying to lose weight in varying types of PA.

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# DIET AND PHYSICAL ACTIVITY THROUGH THE LIFESPAN

## The Effect of Kinesiology Tape Following Rotator Cuff Stress

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**Background:** Most rotator cuff problems are over-use syndromes when the rotator cuff doesn't recover after being stressed. Rotator cuff over-use syndromes result in inflammation of the cuff presenting as pain, diminished performance and reduced shoulder range of motion (ROM). Kinesiology tape has been used in the clinical environment to functionally "unload" a joint which is believed to minimize inflammation of the treated area. Overhead throwing sports, particularly baseball, have been demonstrated to invoke rotator cuff stress and is hypothesized to be minimized by the application of kinesiology tape immediately following the rotator cuff stress.

**Purpose:** The purpose of this study was to determine the effectiveness of kinesiology taping the dominant shoulder on shoulder pain, functioning (pitching velocity & throwing distance), and range of motion, 48 hours following stressing the rotator cuff.

**Methods:** A repeated measures cross over design in which all subjects completed the same protocol twice separated by at least 2 weeks addressed the purpose. Only measures of ROM were measured at baseline ( $B$ ) prior to the subjects engaging in any rotator cuff stress. Each protocol involved stressing the subject's rotator cuff by requesting they throw a baseball "as hard as they could" 30 times. 48 hours following this rotator cuff stress the subject's pain rating, maximum pitching velocity, maximum throwing distance and four measures of shoulder ROM were collected. The only difference between these two protocols was that kinesiology tape ( $T$ ) was and was not ( $NT$ ) randomly applied to the dominant (throwing) shoulder for 48 hours following one of the throwing sessions to invoke rotator cuff stress. Every subject completing two data collection protocols, each 48 hours after being exposed to the rotator cuff stress one with and one without the application of kinesiotape.

**Results:** A sample of 12 volunteers completed the study (Age=21.11±1.97, BMI=26.31±4.09). Paired ttests indicated that the average velocity of the 30 baseball throws to induce rotator stress was similar ( $p>.05$ ) prior to the kinesiotaping (M $\mu$ H=59.77±5.05) and no taping (M $\mu$ H=59.92±5.10) conditions. Paired ttests also indicated that shoulder pain was significantly lower 48 hours after rotator cuff stress with kinesiology tape versus the no tape condition (1.42 $T$  vs 2.08 $NT$ ,  $p<.02$ ). Functioning including maximum pitching velocity (67.41 $T$  vs. 66.25 $NT$  M $\mu$ H) and maximum throwing distance (68.53 $T$  vs. 76.50 $NT$  Ft) 48 hours following rotator cuff stress was similar ( $p>.05$ ) following kinesiology taping versus the no tape condition. Repeated measures ANOVA indicated that shoulder extension (65.50 $B$  vs. 50.33 $T$  vs. 48.08 $NT$  degrees) and medial rotation (75.42 $B$  vs. 62.83 $T$  vs. 63.33 $NT$  degrees) following kinesiology taping and the no tape condition will similar ( $p>.05$ ) although both measures of flexibility were significantly less than baseline measures ( $p>.05$ ). Shoulder lateral rotation (78.42 $B$  vs. 95.83 $T$  vs. 81.33 $NT$ ) and flexion (183.33 $B$  vs. 171.96 $T$  vs. 166.50 $NT$  degrees) were significantly greater ( $p<.05$ ) following kinesiotaping.

**Implications:** The application of kinesiotape following rotator cuff stress appears to result in less pain and greater ROM with no effect on functioning. These benefits of applying kinesiotape following rotator cuff stress support the proposed mechanism of action that kinesiotape "unloads" the affected joint resulting in less inflammation.

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**Funding:** This project was partially supported by a grant from Performance Health Inc.



**Abstracts of Podium Presentations**

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**EXAMINING AND IMPROVING  
RURAL HEALTH**

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**CREATING A RURAL NURSING WORKFORCE**

*Heidi Johnston*

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**REGISTERED NURSES' COMMUTING:  
AN UPDATE ON THE IMPACT OF RURALITY**

*Bronwyn Fields, Janice F. Bell, Jeri Bigbee*

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**PSYCHOMETRIC EVALUATION OF AN INSTRUMENT  
TO MEASURE CAM HEALTH LITERACY**

*Clarann Weinert, Elizabeth Nichols, Jean Shreffler-Grant*

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**TRANSFORMATIONAL NURSING EDUCATION:  
PREPARING LEADERS IN POPULATION HEALTH**

*Margaret Beaman, Teresa Dodd-Butera,  
Paul Sokoloff, Lenah Kebaso, Damaris Lizarraga,  
Nelly Utebor-Abude, Evelyne Atiabet-Kabundie*

# EXAMINING AND IMPROVING RURAL HEALTH

## Creating a Rural Nursing Workforce

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**Purposes/Aims:** The overarching purpose of this project is to increase the nursing workforce in rural Nevada leading to increased access to quality healthcare. The aim is a program evaluation of a rural Associate of Applied Science (AAS) nursing program that recently implemented synchronized distance education (SDE) to rural areas to ensure quality.

**Rationale/Background:** Healthy People 2020 focuses on access to healthcare with the goal of improving access to comprehensive, quality healthcare services. This begins with providing educational opportunities for students in rural locations to become nurses, thus creating a rural nursing workforce to meet the demand for increased access to quality healthcare.

Nursing students living in rural areas often encounter barriers, real or perceived, to receiving education. These students may be unable to leave home to obtain higher education due to expectations, financial issues, and geography (Robert Wood Foundation, 2010), which contributes to a shortage of qualified nurses in rural communities, such as in rural Nevada. One community college recently implemented SDE for the AAS nursing program, but there needed to be a program evaluation in order to ensure program quality. Literature in both nursing and non-nursing disciplines has reported the success of students using distance education technologies.

**Description:** A program evaluation of a rural AAS nursing program using SDE for quality improvement utilizing the Context, Input, Process, Produce (CIPP) Model and the Evolving Model. The six domains evaluated were technology, faculty and student perceptions of benefits, problems, and effectiveness of SDE, faculty training for SDE, student academics, and stakeholders.

**Outcomes Achieved/Documented:** The results were (1) Effective technology in SDE classroom 100% of time, (2) Students and faculty were satisfied with SDE in the classroom, (3) One hundred percent of AAS nursing faculty attending training specific for SDE, (4) Standardized testing analysis revealed that while there was up to a 10.2% difference of group mean scores on exams, the location of students did not appear to be a factor for this difference, scores were higher on two exams than previous year and (5) Information was shared with advisory board members.

**Conclusions:** Many states experience a shortage of nurses to care for the rural population, including a limited number of nursing schools to serve rural areas. Providing nursing education to students who live in rural communities can lead to an increased nursing workforce to care for rural populations and the unique challenges of this population. This scholarly project details recommendations, based on data collected and best practices, for rural nursing schools to integrate SDE into their program successfully to better serve rural locations within their state. New models of educational delivery practices in nursing is a step towards creating healthy communities and improving the nation's health.

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### References:

Robert Wood Foundation (2010). *Efforts to train rural nurses face the difficulties found in cities and suburbs, and more*. Retrieved from <http://www.rwjf.org/en/about-rwjf/newsroom/newsroom-content/2010/09/rural-nursing-facing-unique-workforce-challenges.html>.

# EXAMINING AND IMPROVING RURAL HEALTH

## Registered Nurses' Commuting: An Update on the Impact of Rurality

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**Aim:** To examine associations of rurality and commuting behaviors of registered nurses in California.

**Background:** Recruiting and retaining an adequate nursing workforce remains one of the most serious challenges to providing high quality rural health care. Between 1980 and 2004, the percentage of RNs living in rural areas commuting to work in less rural areas increased from 14% to 37%, with commuting most likely for RNs living in the most rural and isolated areas. Rural hospitals in California have greater difficulty filling RN vacancies compared with urban hospitals, particularly small hospitals seeking to hire experienced RNs. There has been no recent national analysis regarding this alarming trend, and the applicability of national data to the California setting has not been tested.

**Methods:** Individual RNs with current licenses residing in California were identified from the California Board of Registered Nurses database, stratified into 4 rural / urban categories based on home zip-codes using Rural Urban Commuting Areas (RUCA). One thousand RNs were randomly sampled from urban (40%), large rural (20%), small rural (20%) and isolated (20%) rural categories to receive a mailed survey. A total of 184 eligible RNs (currently working or intending to return to work in nursing) responded. Their work zip-codes were stratified using the same 4 RUCA categories. Logistic regression was used to model commuting behavior using the rurality categories.

**Results:** While 31% of all respondents lived in an urban area, 46% of respondents worked in an urban area. More than one-third of respondents living in rural areas commuted to different RUCA area types to work. Overall, commuting behavior increased as rurality increased. 2% of urban RNs, 11% of RNs living in large rural areas, 34% of RNs living in small rural areas, and 75% of RNs living in isolated rural areas commuted to different RUCA area types from that of their residence, with most commuting to urban areas. RNs living in small rural areas (OR=12.62 [CI 9.96, 15.98]) or isolated rural areas (OR=73.5 [CI 56.59, 95.46]) were significantly more likely than RNs living urban areas to commute to different RUCA area types to work.

**Implications:** The results of this study suggest that the national trend identified more than a decade ago has persisted in California, with rural nurses continuing to commute to more urban areas to work. Rural hospitals and other health services with RN vacancies face ongoing competition from urban facilities. Further investigation of influences on RN job choice is warranted, including examination of differences between rural and urban nurses, if effective strategies to address rural RN vacancies are to be identified.



# EXAMINING AND IMPROVING RURAL HEALTH

## Psychometric Evaluation of an Instrument to Measure CAM Health Literacy

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**Purpose:** The purpose of this presentation is to report the results of further psychometric evaluation of the MSU CAM Health Literacy Scale. This evaluation consisted of an assessment of convergent validity and several forms of reliability evaluation, e.g., alpha, test retest, split half.

**Background:** Through a series of studies on the use of CAM among older adults living in sparsely populated rural areas, the need for education to improve CAM health literacy was identified. However, essential to developing a CAM health literacy skill building intervention was the capability of adequately measuring CAM health literacy. A strong, theoretically grounded measure was essential. The MSU CAM Health Literacy model formed the structure for the development and initial testing of the MSU CAM Health Literacy Scale.

**Methods:** Data from a test retest instrument evaluation research project with 251 participants at T1 and 189 at T2 were used in the analysis. To assess convergent validity the CAM Health Literacy Scale scores were compared to two general health literacy indicators: Newest Vital Sign and a single question health literacy measure. Reliability indicators included Chronbach's alpha, test retest correlations, and the use of two forms of item splitting for split half analysis.

**Results:** There were significant correlations between the CAM Health Literacy Scale and the Newest Vital Sign ( $r=0.300$ ,  $p=.000$ ) and with a single question measure ( $r=.255$ ,  $p=.000$ ). Cronbach's alphas were adequate (T1=.784 and T2=.754). On the test retest evaluation the correlation of scores for T1 with T2 was  $r=.696$  ( $p=.000$ ). Split half reliability was evaluated using two forms of splitting the items - first half vs second half and odd vs even. The alphas for the four groups (two methods of splitting of T1 scores and two methods for T2) were fairly consistent ranging from .541 to .719. The correlations between forms were stronger for the odd/even split (T1  $r=.652$  and T2  $r=.691$ ).

**Implications:** This psychometric evaluation provides confirmation of convergent validity and stable reliability. The scale can be used in future research and clinical endeavors.

# EXAMINING AND IMPROVING RURAL HEALTH

## Transformational Nursing Education: Preparing Leaders in Population Health

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*Paul Sokoloff, MSN/MBA, RN, Assistant Director, Case Management<sup>1</sup>*  
*Lenah Kebaso, PhD, RN, Oncology Nurse<sup>1</sup>*  
*Damaris Lizarraga, MSN/MPH, RN, Assistant BSN Program Director<sup>2</sup>*  
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**Purpose/Aims:** The Coachella Valley in California is a medically underserved area with multiple public health challenges. The purpose of this project was to prepare the nursing workforce for population health by examining risk factors for hospital readmission rates in the elderly, and promote a campus-community partnership with a graduate nursing program.

**Rationale/Background:** One of the three core functions of public health includes “Assurance,” which addresses a “competent public and personal health care workforce (IOM, 1988).” Focusing on linkages between academic institutions and community capacity- building is a related essential service that provides an opportunity for educational innovation. In order to assure a nursing workforce with competence in population-based care, a graduate nursing program at a public university partnered with a local community medical center to offer a practicum experience advocating for continuity of patient care, prevention of hospital readmission, and educating nurses in population health.

**Methods:** An Elderly Readmission Assessment Team was formed, and created the objectives of the graduate practicum, in order to address readmission issues. The Team completed a review of the evidence and developed a two-phase study to determine factors related to elderly hospital readmissions. Initial phase included chart reviews to identify leading medical diagnoses of individuals age 70 and older who were readmitted within 30 days; and included interviews of 25 new hospitalized elderly persons readmitted with the same diagnoses.

**Outcomes:** The Team reviewed the list of all hospital admissions in 2014; and filtered the admissions for patients age  $\geq 70$  years who were readmitted within 30-days of a hospitalization for the same medical diagnoses. The top five diagnostic categories were sepsis, heart failure, GI hemorrhage, chest pain, and cancer. A review of 40 of these patient charts, revealed the following common risk factors: multiple co-morbidities, poly-pharmacy usage, permanent (vs seasonal) resident, targeted length of stay, and living alone. The Team designed a 20-30-minute interview for new patients  $\geq 70$  years old, readmitted with one of the top five diagnoses.

**Conclusions:** The results reveal a critical role for nursing education and population health, focusing on inpatient and outpatient factors, to prevent readmission rates in the elderly. Recommendations include: improvement of pharmacy management prior to discharge, with in-home follow up; establishing a follow-up appointment with a provider, prior to discharge; assessment of co-morbidities beyond admitting diagnosis; expansion of evaluation of the home setting; and increased patient-centered quality of life interventions and palliative care. The response from MSN students to the practicum experience was positive. Half of the participating MSN student projects addressed the community and home-based needs of the elderly, and the other half focused on the hospital discharge experience. The innovation and initiative of the Team of graduate nursing students has sparked inter-professional interest, specifically working with medical residents from the community hospital on collaborative home visits. This was a nursing led educational endeavor that strengthened the workforce on population health issues, and created an opportunity for collaboration and improved patient care.

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Reference:

Naccarella L, Butterworth I, Moore T. (2016). Transforming Health Professionals into Population Health Change Agents. *J Public Health Res.* 26;5(1):643. doi: 10.4081/jphr.2016.643. eCollection.



## Abstracts of Podium Presentations

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### FACULTY AND STUDENT RETENTION

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#### BLACK/AFRICAN AMERICAN BSN STUDENTS' LIVED EXPERIENCES OF RETENTION AND PROGRESSION

*India Mylon Medley, Iris Mamier, Zand Yi*

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#### STUDENT AND FACULTY COLLABORATION: UPDATE OF A MENTORSHIP MODEL FOR ONLINE STUDENTS

*Marilyn Klakovich*

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#### PREDICTORS OF INTENT-TO-LEAVE IN A NATIONAL SAMPLE OF NURSING FACULTY

*Linda Flynn*

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#### RETENTION OF FACULTY OF COLOR IN ACADEMIC NURSING

*Nalo Hamilton, Emily A. Haozous*

## FACULTY AND STUDENT RETENTION

### Black/African American BSN Students' Lived Experiences of Retention and Progression

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*Zane Yi, PhD  
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**Purpose/Aims:** To identify the unique experiences, common meanings, and shared practices of Black/African American senior nursing students' regarding their retention and progression in a baccalaureate nursing program at a Historically Black University (HBCU) in the mid-Atlantic region of the US.

**Rationale/Background:** In the United States, the Affordable Care Act provides access and equity to groups historically underserved and disproportionately affected by disease. Thus, recent policy changes have addressed longstanding health disparities— at least partially. To further improve the health of underserved communities, more culturally congruent care and more nurses from Black/African American communities are warranted. However, data show a different trend: Minority nursing students, specifically of Black/African American descent, have less access to nursing education, poorer retention and progression rates in nursing programs, and are more likely to withdraw from programs. While HBCUs are committed to providing a culturally supportive learning environment and their mission is geared at the higher education needs of Blacks/African Americans, little is known how Black/African American nursing students experience baccalaureate nursing at HBCUs. Thus, there is a need to listen to the voices of Black/African American nursing students pertaining to retention and progression in academic nursing programs to better understand what factors contributed to their successful program completion.

**Methods:** Thirteen Black/African American senior nursing students individually and electronically responded to classroom announcements made by the researcher and distributed flyers. The students were interviewed on two separate occasions: At the beginning and towards the end of their final semester before graduating from a baccalaureate nursing program at a HBCU. A total of 26 in depth qualitative interviews were conducted, analyzed, and interpreted using hermeneutic interpretive phenomenology.

**Results:** The meaning of students' lived experiences reflected five emerging themes: Development of resilience in response to overwhelming stress, unrealistic expectations of nursing education, self-reliance, renewed sense of cultural identity, and a sense of purpose in nursing.

**Implications:** This study allows nurse faculty to better understand empowering and resiliency factors as well as barriers that Black/African American baccalaureate nursing students might experience. This understanding may be helpful in carefully reviewing how nursing programs are administered and develop proactive approaches and policies that are conducive to minority nursing students' wholistic learning experience which may actually increase their number in the nursing workforce.

# FACULTY AND STUDENT RETENTION

## Student and Faculty Collaboration: Update of a Mentorship Model for Online Students

Marilyn Klakovich, DNSc, RN, NEA-BC  
Online Faculty  
College of Nursing and Health Sciences  
University of Phoenix

**Purposes:** To describe the collaborative process used to develop and revise a practicum mentoring model including associated outcomes. A secondary purpose is to share strategies for online instructors to implement using similar collaborative processes.

**Background:** Students completing a master's in nursing online program complete a scholarly project working with a master's prepared mentor to meet an educational or administrative need in a workplace or community. Students have no face-to-face contact with faculty who supervise the capstone practicum course, thus, effective mentors are critical to student success. The two-part practicum course is "A" where students develop a self-directed learning agreement and "B" where students submit all evidence of project fulfillment.

**Process:** The model was developed through a qualitative study that included content analysis of student reports (n=263 representing 28 "A" classes) of characteristics of effective mentors and then "B" student confirmation of the identified categories. The major categories were organized into a pyramid-shaped mentorship model for online practicum experiences. The foundation of the pyramid was comprised of characteristics including background, experience, and education. The central core of the pyramid was formed by qualities and ways the mentor interacts with the mentee (resourceful, inspires, caring). I presented this model at an international conference and dialogue with the audience suggested the need to refine the model. To allow for student collaboration in model refinement, I posted the model in 5 (n=65) "B" classes for input. Based on their recommendations, the mentor characteristics were reorganized within the pyramid. They believed that foundation of the model should be the two cornerstones (*Nursing Knowledge, Nursing Experience*) interconnected with *Caring*. The central core became *Resourceful* with the apex being *Inspire and Challenge*. Professional ladder categories (*Educator, Clinician, Researcher, Manager*) support the base and the core of the model. Once these changes were made, I posted the model in 4 (n = 52) «B» classes and students confirmed that this model represented their positive mentor experience. The model was again shared at an international conference two years after the first presentation. Student quotes indicated that the pyramid structure was too rigid to capture the essence of mentorship. Other images shared and discussed were a tree, lighthouse, and rainbow. I have continued to gather information (17 «A» n=221; 21 «B» n=207). The tree model is the one that most students connect with although there is interest in further exploring the lighthouse image.

**Outcomes Achieved:** Students have used the model to help them select an appropriate mentor. Additionally, they share the model with their mentors to establish a relationship and determine ways that they can collaborate. Students and mentors report this provides clarity on how to collaborate, and gives them ideas for creative approaches. Since using this model, I have had fewer students report negative mentoring experiences in "B".

**Conclusions:** Mentors play a critical role in guiding, supporting and challenging students to grow throughout the practicum experience. This refined online mentorship model facilitates appropriate selection of mentors and suggests ways that mentors and mentees can work effectively together. Furthermore, students get a basic experience with theory development.

# FACULTY AND STUDENT RETENTION

## Predictors of Intent-to-Leave in a National Sample of Nursing Faculty

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**Purposes/Aims:** Faculty shortages and high faculty attrition rates are threatening the adequacy of the nursing workforce. Evidence-based leadership in schools of nursing is needed to enhance faculty retention. The aims of this funded study were to (1) Quantify the individual and cumulative effects of modifiable, system-level predictors on faculty attrition; and (2) Leverage study findings to make evidence-based recommendations for enhancing faculty retention in schools of nursing.

**Rationale/Theory/Background:** The IOM report, *The Future of Nursing: Leading Change, Advancing Health* (2011), called for a transformation of nursing education in order to meet the public demands of a reformed health care system. Yet, the transformation of nursing education is hampered by a severe, nationwide shortage of faculty, high faculty attrition rates, and persistently high faculty vacancy rates in schools of nursing (AACN, 2015). Importantly, recent studies indicate that a total of 68,938 qualified applicants to schools of nursing were denied admission due to faculty shortages (AACN, 2015). Theories of organizations and professions propose that modifiable, system-level factors are frequently associated with decisions to leave a position (Adler & Kwon, 2006). Academic nurse leaders need sound evidence on which to base evidence-based strategies to enhance faculty retention.

**Methods:** Following IRB approval, Dillman (2014) survey methods were used to recruit faculty from a nationally representative sample of 28 schools of nursing. Faculty holding an academic leadership position were excluded from this analysis, resulting in an analytic sample of 1,017 faculty members representing all 28 participating schools. A series of 27 survey items were derived from theory and previous research to measure faculty satisfaction with various modifiable aspects of work life. Descriptive and bivariate analyses were conducted prior to dichotomization. To adjust for the clustering of faculty within schools, Generalized Estimating Equations were used to produce prediction models with robust standard errors.

**Results:** A total of 31% of faculty indicated they planned to leave their position within the next year for reasons other than retirement. Five predictors were significantly associated with faculty member's intentions to leave their position, resulting in a Nagelkerke R Square of .41 explaining 41% of the variance in intent-to-leave. The Hosmer and Lemeshow test indicated a good fit of the model to the data. Importantly, faculty who reported a lack of recognition for their contributions were over twice as likely to be planning to leave, and faculty who were dissatisfied with their relationship with administration were more than three times more likely to be planning to leave.

**Implications:** In contradiction to popular claims that low salaries are responsible for faculty attrition, findings from this study indicate that system-level relationships have the largest impact on nursing faculty intentions to leave their jobs. Academic leaders' recognition of faculty accomplishments and contributions, as well the purposeful establishment of good faculty-administration relationships are fair, low cost, and effective strategies for enhancing faculty retention. Leadership training for academic administrators may go a long way in improving faculty relationships and retention.

# FACULTY AND STUDENT RETENTION

## Retention of Faculty of Color in Academic Nursing

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**Purpose:** The aims of this systematic literature review were to summarize the literature and propose strategies for retention and advancement of faculty of color (FOC) in academic nursing.

**Rationale:** Diversity (e.g racial/ethnic, gender) amongst nursing faculty is low, preventing schools of nursing (SON) from reflecting the populations that they serve academically and clinically. Few studies address the experience and success of FOC in nursing.

**Methods:** Using the PRISMA guidelines for systematic reviews we analyzed the literature on attrition and retention of FOC in academic nursing. Based on this analysis we identified dominant themes and best practices for SON wishing to retain and support FOC.

**Results:** We identified benefits, barriers, promoters of retention, and specific examples of institutional policies and practices that have improved retention of FOC in SON. Benefits included increased potential for diverse faculty and student mentoring, FOC contribute to culturally congruent education, and increased diversity of thought in SON. Barriers were low cultural awareness, racism and microaggressions in the workplace, poor job satisfaction, few mentors, and normative whiteness in SON. Retention was promoted by mentoring, staff development, and building community in SON.

**Implications:** Nurses are key contributors to the success of healthcare team, a team that is strengthened by the diversity of the participating members. The results of this research can be used to inform institutional policies regarding retention of FOC, improving the quality of nursing education nationwide.

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**Funding:** This work was funded by the Robert Wood Johnson Foundation Nurse Faculty Scholar Award #69352 (Hamilton) and the Robert Wood Johnson Foundation Nurse Faculty Scholar Award #69347 (Haozous).





**Abstracts of Podium Presentations**

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**GRADUATE STUDENT EDUCATION ISSUES**

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**GAUGING GRADUATE STUDENT BASELINE  
KNOWLEDGE IN PATHOPHYSIOLOGY**

*Marylou V. Robinson*

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**GROWING A DUAL DEGREE PHD/DNP  
PROGRAM IN NURSING**

*Rene Love, Anne G. Rosenfeld, Terry A. Badger, Amanda Gluski*

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**BRINGING RESEARCH ETHICS TO LIFE FOR PHD STUDENTS**

*Anne G. Rosenfeld, Christina Wyles*

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**YOU LEARN WHEN YOU TEACH: FACULTY AND  
GRADUATE ASSISTANT NARRATIVE PEDAGOGY**

*Penny Morgan Overgaard, Susan M. Renz, Lauren A. Acosta, Natalie M. Pool,  
Janice D. Crist*

# GRADUATE STUDENT EDUCATION ISSUES

## Gauging Graduate Student Baseline Knowledge in Pathophysiology

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**Purpose:** To evaluate a software platform to facilitate graduate student learning in Advanced Pathophysiology.

**Background:** Advanced Practice students entering graduate study must take an Advanced Pathophysiology course. Most find the content challenging and bemoan the necessary self-review of previous knowledge that could be years or even decades old. Our program has no established method to gauge retention of BSN level pathophysiology content.

A new online program designed to facilitate student engagement with pathophysiology content (Davis Edge, 2016) on the undergraduate level was found to be a popular study modality among the BSN students at the same university. This software platform uses pre-tests, short videos, games and post-tests to monitor student mastery of major concepts. This enables faculty to focus class time on troublesome subjects and facilitates faster introduction of cases where foundational knowledge is more evident.

**Method:** The software platform was piloted as a self-diagnostic system for graduate students taking an online, compressed 10 week summer course. Most students (N = 20) were not matriculated at this university, but were pending admission decisions at several universities across the country. Emphasis that the platform gauged comprehension on the undergraduate level helped reinforce that this was pre-requisite content that would not be reviewed to any depth. The course was supplemented with multiple video lectures for each body system that students would access at their own pace and then take advanced content quizzes. Weekly online meetings helped clarify questions, provided application discussions and maintained a sense of a cohort of scholars. Evaluation of pilot success was monitored by an overview of trends in student performance (80% to pass) and comments.

**Outcomes:** Most students (19 of 20) passed the course with scores higher than previous semesters. Because mastery could be demonstrated by passing only the pre-test, the students engaged the content as a welcome method to review prior knowledge. One student gained passing scores with only the pre-test for over half of the systems. Most students required completion of all the activities in order to pass the modules. A quarter of the class required multiple attempts to achieve passing scores in at least half of the systems. One course failure was predictable at midterm by issues of poor achievement in these undergraduate modules. Employment in a specialty site (i.e. cardiology) did not always confer an advantage for that content area. Final course grades reflected the expected finding that those who struggled with the BSN content had more difficulty mastering the advanced concepts.

**Conclusion:** Students endorsed the platform as a helpful method to review prior knowledge. They were humbled by the expected level of pre-requisite knowledge which may have reduced the previously encountered numerous complaints about the depth of content in the course. Continued use of the platform is suggested to facilitate graduate student learning.

# GRADUATE STUDENT EDUCATION ISSUES

## Growing a Dual Degree PhD/DNP Program in Nursing

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**Purposes/Aims:** To describe the inception and growth of one of the few dual degree programs (PhD/DNP) in nursing in the U.S.

**Rationale/Background:** Advanced practice nurses are well positioned to identify researchable issues. Nurses with both a research degree (PhD) and advanced practice degree (DNP) are well prepared to lead practice relevant programs of research. Obtaining both preparations simultaneously should help nurses to meld the 2 roles. Further, such a program can help meet the IOM/RWJF goal of increasing the number of doctorally prepared nurses.

**Description:** The University of Arizona (UA) College of Nursing (CON) dual degree program, initiated in 2010, was designed so that students complete requirements for both degrees concurrently. The program is offered online, facilitating students from all states with authorized designation. Applicants must meet both programs' requirements for admission. Pathways are available for students entering with a BSN or MSN with or without prior advanced practice nursing (APN) preparation. Plans of study are highly individualized based on the student's APN specialty, PhD substantive focus, and minor. Students may take 17 credits in common between the 2 degrees. One doctoral product, a dissertation, is completed. The UA Graduate College sets standards for awarding dual degrees.

**Outcomes:** To date, 4 dual degree students have graduated, 13 are in program, and 5 are planning to apply for the coming year. Graduates are employed in practice, research, and academic settings. Issues identified while in the program include balancing demanding coursework, clarifying expectations, and career planning. A major issue close to graduation is balancing the need to begin 2 new roles and how to approach both, or whether to focus on one and delay the other. Faculty identify challenges in selecting and guiding students.

**Conclusions:** A dual degree program is possible for highly motivated students who choose to pursue preparation as both an advanced practice nurse and a nurse scientist. The profession is challenged to help such graduates maximize their transition to a combined role.

# GRADUATE STUDENT EDUCATION ISSUES

## Bringing Research Ethics to Life for PhD Students

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**Purposes/Aims:** To describe a research ethics assignment designed to engage PhD students in analysis of research ethics dilemmas.

**Rationale/Background:** Standard research ethics training involves several required elements. However, application of research ethics principles goes beyond basic content. An ethics dilemma is defined as a situation in which there are 2 or more possible alternative choices or decisions that could be considered ethical.

**Approach:** First year PhD students are given a real research ethics case dilemma from the literature, along with published dialogue regarding the ethical situation. Examples include a study using delayed consent and a class action concern about inadequate explanation of risk in the consent. First, students write a letter to the editor taking a position on the dilemma. Next, students share their letters with the group online, each as a new discussion thread, and engage in asynchronous discussion of their colleagues' perspectives.

**Outcomes Achieved:** Students' letters demonstrate thoughtful analysis of the principles and context involved. Not all students agree; i.e., not all take the same position on the case. In their discussions, they demonstrate respect, reflection, and scholarly analyses of each other's conclusions. The faculty member monitors the discussions for misunderstanding of research methods and principles, but avoids taking positions and thus biasing the unfolding debate. By the end of the discussions, most groups reach consensus. Students consistently praise the assignments as informative, enlightening, and broadening, and recommend that the assignment be retained for future classes. Student comments suggest that the small group size and the "slow thinking" method of thought the asynchronous platform affords offers a more memorable learning experience.

**Conclusions:** Educators can develop case-based assignments to combine both research ethics learning as well as scholarly dialogue and writing. The slow, methodical process of scholarship encouraged a written discussion between students and expanded their scope of insight and analysis. Educators should consider the online case-based ethics assignments for humanistic development and deeper understanding.

# GRADUATE STUDENT EDUCATION ISSUES

## You Learn When You Teach: Faculty and Graduate Assistant Narrative Pedagogy

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**Purpose:** The purpose of this study was to understand the meaning of co-teaching for PhD faculty and PhD mentees in an online PhD program. Narrative pedagogy underpinned the inquiry, which was designed to continue the discourse on mentorship of PhD future faculty. The question for this inquiry was, “What is the meaning of faculty’s and teaching assistants’ experiences in co-teaching online PhD nursing research courses?”

**Rationale/Conceptual Basis:** There is a current effort to increase the number of graduate prepared nurses to fill faculty vacancies. Graduate students should be prepared to enter a faculty role upon graduation. Many graduate programs do not adequately prepare students for a teaching role (Aldebron & Allan, 2010; Hinshaw, 2001); thus, it is important to explore the experiences of graduate students and faculty in programs currently in place to determine what preparation is most effective. Narrative pedagogy was used to frame this inquiry, emphasizing open dialogue and listening to others’ perspectives to allow new learning and improved practices to emerge.

**Methods:** A faculty mentor (FM) and four current or past graduate teaching assistants (TAs) participated in the inquiry. The FM’s and last two TAs’ weekly journals and telephone conferences partially constituted the data. Halfway through the semester, two previous TAs joined the endeavor and wrote reflexive accounts based on memories of their teaching experiences. At the end of the semester, the authors utilized the journals and reflexive accounts to explore their teaching experiences. Data were analyzed as a team using a five-phase interpretive phenomenological analysis process. The authors: reflected on individual journal entries and/or course experiences to identify issues requiring further exploration or team discussion; identified central concerns from their respective reflective activities; reviewed all central concerns and any exemplars that emerged individually and as a team to identify shared meanings; discussed and finalized the final interpretation through an iterative process supported by the shared meanings and demonstrated by exemplars; during interpretive writing confirmed paradigm cases, stories representing the whole interpretation.

**Results:** Analysis identified three shared meanings, as well as exemplars and paradigm cases, supporting the interpretation, “You Learn as you Teach.” Mentored teaching experiences were helpful in developing the TAs as future nursing faculty. The FM also gained insight and growth from the mentored experiences.

**Implications:** The mentored experience should be structured and include reflective activities and regular meetings. Six recommendations for graduate programs engaged in faculty preparation were: (1) keep a weekly journal as a requirement for TAs and FMs to ensure reflexivity in the teaching process; (2) FMs and TAs grade the same papers to gain reciprocal insight from shared feedback; (3) schedule regular FM-TA meetings to facilitate team engagement and collaboration; (4) design reflective questions about group dynamics prior to the formation of discussion groups and as part of the FM-student mid-semester meetings; (5) require a mentored teaching experience for all PhD students; (6) identify a focused pedagogy as a framework for mentored teaching experiences. The authors call for continued discourse about how to develop existing and future educational scholar leaders.



## Abstracts of Podium Presentations

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### HEALTH ISSUES FOR MID-LIFE WOMEN

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CULTURAL MODELS OF PELVIC FLOOR  
DEFECTS AMONG MEXICAN AMERICAN  
AND EURO-AMERICAN WOMEN

*Lauren Clark, Ana C. Sanchez Birkhead, Marlene J. Egger, Cecilia I. Fernandez*

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LONG-TERM HT USERS' PERCEPTIONS OF RISK

*Mary M. Hunter*

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THE INFLUENCE OF MENOPAUSAL STATUS ON SYMPTOM  
EXPERIENCE AFTER BREAST CANCER SURGERY

*Melissa Mazor, Christine Miaskowski*

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BREAST CANCER SURVIVORSHIP IN RURAL  
COLORADO: CONTEXT AND INNOVATION IN CARE

*Terry Schumaker, Leli Pedro, Heather Hageman*

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EFFECT OF INSOMNIA THERAPY ON MENOPAUSE  
SYMPTOMS IN BREAST CANCER SURVIVORS

*Michaela S. McCarthy, Elyn E. Matthews*

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A WOMEN'S HEALTH PROMOTION PROGRAM  
FOR AUSTERE ENVIRONMENTS

*Lori L. Trego, Nancy Steele, Laureen Otto, Shawana Taylor, Joyce Craig,  
Linda Jenkins, Patricia Jordan, William Brown, Susan Hopkinson,  
Joseph Pina, Paul Estabrooks*



# HEALTH ISSUES FOR MID-LIFE WOMEN

## Cultural Models of Pelvic Floor Defects among Mexican American and Euro-American Women

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**Purpose:** The goal of this phase of a comparative focused ethnographic study of multiparous women was to understand Mexican American and Euro-American cultural beliefs about pelvic floor changes post-partum.

**Background:** Changes in pelvic floor support increase with age, parity, and body weight. After one vaginal delivery, one-quarter to one-half of women demonstrate urinary incontinence, fecal incontinence, and/or pelvic organ prolapse in the first year postpartum. Even subtle pelvic floor support changes affect quality of life and sexual activity. Cultural models offer women resources about post-partum practices. Beliefs about postpartum changes and embodied pelvic floor variations are not well understood.

**Methods:** Individual ethnographic interviews were conducted with 17 midlife women (35-73 y.o., n=8 emigrated from Mexico, first-generation US residents, interviewed in Spanish; n=9 non-Hispanic white European descent [ $\geq 3^{\text{rd}}$  generation]). Interviews were recorded, transcribed, verified, anonymized, and analyzed by a multidisciplinary research team with expertise in Latino women's health, some of whom were bicultural and fluent in Spanish. We coded interview transcripts to identify beliefs and practices about post-partum recovery and the emic causes of pelvic floor support changes. We constructed explanatory models (Kleinman, 1978), which are a particular kind of cultural model describing how women make sense of or "explain" pelvic floor changes, cause, and consequences.

**Results:** Cultural models about how women's bodies recover from childbirth and corresponding culturally-patterned post-partum behaviors emphasize a balance of rest and activity. The ideal balance of rest-activity for these two groups differed. For women with Mexican heritage, the emphasis was on securing adequate rest during the 40-day post-partum period known as *la cuarentena*. Daily housework, childcare, and movement were ideally suspended during this time, with women kin assuming these responsibilities and allowing the mother to recuperate. Euro-American women referenced a 6-8 week period of recovery during which time they "listened to their body" in pacing physical activity. A competing value of "getting going" post-birth was also invoked. For both, activity and rest, Mexican American and Euro-American women explained their behavior and situated it in a social landscape of expectations and experience. In the contemporary U.S. setting, the political economy of family life compromised the opportunity to fully adhere to the injunction to rest during *la cuarentena* or stage a planned resumption of physical activity by responding to bodily cues.

**Implications:** Cultural models of the body and post-partum recovery vary in emphasis among women of Mexican and European heritage. Limited practical support for women post-partum was similar in both groups and incommensurate with their expectations. Culturally appropriate resources are needed for women concerned about early changes in pelvic floor support, their families, and healthcare professionals.

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**Funding:** NIH P01 HD080629.

# HEALTH ISSUES FOR MID-LIFE WOMEN

## Long-Term HT Users' Perceptions of Risk

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**Purposes/Aims:** This study employed a qualitative design to examine the hormone therapy (HT) decision-making processes of women 60 years and older. The research question (paraphrased) was “*Why do women decide to continue use of HT indefinitely despite the risks?*”

**Background:** Use of HT, systemic estrogen with or without a progestin, for more than three to five years after the cessation of menses puts women at increased risk for breast, ovarian, and endometrial cancer, cardiovascular disease, gallbladder disease, incontinence, and dementia. For this reason, it is not recommended (in evidence-based clinical guidelines that are not industry-sponsored, such as UpToDate) beyond this therapeutic window except in rare circumstances. Nevertheless, data on filled prescriptions indicate that more than a quarter of prescriptions for HT are written for women over the age of 60, and this raised the research question. No studies on HT decision making specific to long-term users or women 60 years or older were found in the literature.

**Methods:** Traditional grounded theory methodology involving interviews of 20 women explored the questions: “What factors influence older women to use HT beyond the menopause transition?” and “How do older women weigh the risks and benefits of HT?”

**Results:** Risk perception is the focus of this presentation. Surveys of women approaching menopause have found that HT decisions are strongly influenced by health care providers. This study supports that observation and adds the observation that the decision to continue HT beyond five years is also strongly influenced by providers. Analysis showed that risk information was generally disregarded by the participants and not taken into account in the decision-making process. Three key concepts from the literature on decision making that help explain disregard of risk information are identified and explained. Interview quotes are used to illustrate the observed disregard of risk information and the application of these concepts.

**Implications:** Arguing that the science behind the quantification of HT risks is faulty, some pharmaceutical companies continue to promote HT for long-term use. This promotion is directed at gynecology specialists through strategies such as ghost-writing, and many providers remain skeptical of prescribing guidelines that recommend limiting duration of use. This fact, combined with patient demand for HT, results in the prescription of HT long past menopause. Understanding the reasons women decide to use HT beyond the menopause transition can inform strategies to promote informed decision making. These efforts may result in a reduction in HT use and associated disease. Theory generated from this study will be tested in future research and used to guide development of an intervention, such as a decision tool to effectively convey evidence-based risk information to prescribers and consumers.

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# HEALTH ISSUES FOR MID-LIFE WOMEN

## The Influence of Menopausal Status on Symptom Experience after Breast Cancer Surgery

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**Purposes:** The purpose of this study was to evaluate for an association between menopausal symptom experience and menopausal status in survivors one year after breast cancer surgery.

**Background:** Breast cancer treatments can change women's hormonal milieu and alter their symptom experience. Approximately 60%-100% of breast cancer survivors experience at least one treatment-induced symptom. These often co-occurring symptoms can be acute or chronic. They can negatively impact quality of life, relationships, and work. Little is known about associations between menopausal status and various dimensions of the menopausal symptom experience (i.e., occurrence, severity, distress) one year after surgery and adjuvant therapy.

**Methods:** This cross-sectional study used the Theory of Symptom Management. One year after surgery, 327 women completed the Menopausal Symptoms Scale, a self-report measure that evaluates the occurrence, severity, and distress of 46 common symptoms associated with menopause. Self-reported menopausal status, demographic and clinical characteristics and functional status were assessed with valid and reliable questionnaires. Medical records were reviewed for treatment history. Descriptive statistics and logistic and linear regression analyses were performed to answer the research questions.

**Results:** Of the 327 patients enrolled, 34.7% (n=116) were premenopausal with a mean age of 46.9±6.9 and 63.2% (n=211) were postmenopausal with a mean age of 61.9±10.3. No differences were found in the total number of symptoms reported between premenopausal ( $\bar{x}$  = 11.9±8.7) and postmenopausal ( $\bar{x}$  = 10.3±87.9;  $t$  = 1.70,  $p$ =.089) patients. Across the sample, the five symptoms with the highest occurrence rates were: wake during the night (63%), fatigue (52%), hot flashes (50%), joint pain (48%), and difficulty falling asleep (43%). The most severe symptoms reported were lost sexual interest, cramps, vaginal dryness, hot flashes, daytime sweats. The mean severity scores ranged from 4.3±2.1 (daytime sweats) to 5.5±2.7 (lost sexual interest). The most distressing symptoms reported were lost sexual interest, weight gain, cramps, abdominal bloating, and anger. The mean distress scores ranged from 4.1±2.9 (anger) to 4.8±3.3 (lost sexual interest). In the bivariate model, premenopausal patients reported higher occurrence rates for daytime sweats, eating more than usual, hot flashes, hostility, irritability, skin changes, and weight gain (all  $p$ <.05); and lower occurrence rates for joint pain/stiffness ( $p$ =.011). Premenopausal patients reported higher severity ratings for impatience, irritability, and mood swings; and lower severity ratings for lost sexual interest shortness of breath (all  $p$ <.05). Premenopausal patients reported higher distress ratings for hostility, impatience, mood swings, and swollen hands (all  $p$ <.05).

**Implications for Translation into Practice:** Findings from this study suggest that regardless of menopausal status, breast cancer patients report a high occurrence of several moderately severe and distressing menopausal symptoms 12 months after surgery. Given the extent of persistent symptoms after treatment, pre- and post-menopausal cancer survivors warrant ongoing assessments and management of symptoms. Longitudinal studies are needed that evaluate for differences in symptom burden over time between pre- and post-menopausal cancer survivors.

# HEALTH ISSUES FOR MID-LIFE WOMEN

## Breast Cancer Survivorship in Rural Colorado: Context and Innovation in Care

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Long term cancer survivorship is understudied. Rural long term cancer survivors face additional challenges to survivorship and health-related quality of life (HRQOL). Understanding the dynamic influence of micro-macro level rural contexts experienced by survivors and providers of care in the rural setting allows opportunities for innovation and improvements in care for long term survivors of breast cancer (LTBCS). The embedded factors described in this qualitative study offer direction to strengthen interprofessional collaboration and navigation efforts in addressing complex needs of LTBCS.

**Purpose:** The aim of the study was to clarify the micro (individual-LTBCS) and macro (key informant provider-KIP's) dimensions of HRQOL for rural LTBCS, (minimum five years beyond treatment) and their providers (KIP's). A more precise characterization and understanding of LTBCS (micro) and their health care system providers (macro) is foundational to understanding interactions as it defines LTBCS and HRQOL in the rural setting. Understanding of the micro-macro themes reveals contextual knowledge of rural culture and associated HRQOL. This in turn, suggests guidance for nursing innovation and collaboration for LTBCS and KIP's in various rural settings.

**Methods:** Two semi-structured audio taped focus group interviews were organized with eight LTBCS in each group. Eight interviews were conducted with individual key informants (KIP's) representing selected rural health providers and health care entities. All participants were recruited from rural codes 7-9 on the Rural Urban Continuum Codes using a snowball, purposive, convenience sampling method. The research investigators individually and then collectively coded and analyzed all participant transcripts using qualitative content analysis methods and Atlas ti software.

**Results:** Nine themes emerged from the analysis. The themes drew upon the context of both groups' (LTBCS & KIP's) rural lives, circumstances, resources and roles. The micro-LTBCS themes included; guarded optimism, "we do for each other", choice to live in the rural setting, and acceptance of the unexpected. The macro-KIP themes included: provider scarcity, isolation, navigation, community and rural quality of life.

**Implications:** The themes of this study suggest the importance of context as embedded factors influencing the healthcare environment of LTBCS, KIPS and HRQOL. Understanding of KIP and LTBCS perspectives allows a new approach to comprehensive survivorship care to evolve. This study provides a framework of knowledge for developing diverse navigation models needed for LTBCS and HRQOL. Nursing leadership is essential to develop robust implementation of standardized recommended care for long term survivorship. Care must not only meet standards, but be accessible and adapted for use by LTBCS and KIP's within communities. Understanding of micro-macro knowledge may address not only rural context for care, but may potentially mitigate health disparities due to unique challenges found in other populations and settings.

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# HEALTH ISSUES FOR MID-LIFE WOMEN

## Effect of Insomnia Therapy on Menopause Symptoms in Breast Cancer Survivors

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**Purpose:** The purpose of this study was to explore the use of a Cognitive Behavioral Therapy for Insomnia intervention on rural breast cancer survivors. The change in menopause symptoms before and after insomnia therapy are examined here.

**Background:** Breast cancer is a common cancer in women, affecting one in eight in the United States. Breast cancer treatments can induce medical menopause in younger women and worsen menopause-like symptoms in women who are post-menopausal when diagnosed. This persistent symptom burden can negatively impact quality of life for years after cancer treatment is completed. Cognitive Behavioral Therapy for Insomnia is an effective therapy to treat insomnia, but an outstanding question is whether treating insomnia can impact the menopause-like symptoms associated with breast cancer survivorship.

**Methods:** Rural breast cancer survivors (n=18) were enrolled into the study and underwent six weeks of individualized therapy to improve insomnia. The therapy was delivered over an internet based videoconference platform by a nurse trained in Cognitive Behavioral Therapy for Insomnia. Participants kept daily sleep diaries and completed the Menopause Rating Scale before and after the six weeks of therapy. Dependent t-tests were used to evaluate pre/post differences in menopause symptoms.

**Results:** Menopause symptoms improved significantly on the psychological ( $p < .001$ ) and somatic ( $p < .001$ ) subscales and approached significance on the urogenital ( $p = .011$ ) subscale of the Menopause Rating Scale. The global Menopause Rating Scale score also showed significant improvement ( $p < .001$ ).

**Implications for Translation to Practice:** Cognitive Behavioral Therapy for Insomnia could provide an effective way to lessen menopause-like symptoms and decrease the long-term symptom burden in breast cancer survivors. Menopause and menopause-like symptoms are implicated in sleep disturbances. It may be that the relationship is bi-directional, and that regulating sleep can impact the severity of menopause-like symptoms. This could also have implications for prostate cancer survivors, who suffer from menopause-like symptoms during androgen suppression therapy.

# HEALTH ISSUES FOR MID-LIFE WOMEN

## A Women's Health Promotion Program for Austere Environments

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**Purpose:** The purpose of this study is to evaluate the characteristics and effectiveness of a nurse directed Women's Health Promotion Program (WHPP) for Austere Environments in the military community setting.

**Background:** Military women who serve in austere environments are at risk for urinary tract infections, vaginal infections, and menstrual disorders. It has been recommended that women receive education prior to military deployments on gynecologic symptoms, behaviors that decrease risks for genitourinary infections, and maintaining feminine hygiene in austere environments. The WHPP, a self-care gynecologic health promotion class, was designed to fill this need for military women. In a previous study, the class content was pilot-tested in a military sample and found to be effective in changing individual women's hygiene habits. Subsequently, this study was planned according to **REAIM**, a framework that guides investigators to measure individual outcomes, or the efficacy, as well as the organizational outcomes, or the effectiveness, of a health promotion program that is implemented in the community.

**Methods:** This is a longitudinal study that measures the **Reach**, **Efficacy/effectiveness**, **Adoption**, **Implementation**, and **Maintenance** of a health promotion program according to the **REAIM** framework. Organizational data were collected by the study team and individual data were collected via e-survey at baseline, 6 months, and a year after the implementation of the WHPP. **Reach** was measured by the percentage of at-risk women in the military unit who attended the WHPP. **Efficacy** was measured by genitourinary symptoms and effectiveness, by the population prevalence according to ICD-9 codes in the target population prior to and one year following the start of the WHPP. **Adoption** was measured by percentage of eligible units that accepted the WHPP. **Implementation** was measured by fidelity of the WHPP. **Maintenance** was measured by the percentage of units that had continued the WHPP one year after implementation.

**Results:** Findings are reported by the **REAIM** framework. **Reach:** The class was provided to women in 54 military units. Of the 348 women enrolled, 116 and 64 completed the 6 and 12 month follow-up surveys, respectively. **Efficacy/effectiveness:** The self-reported incidence of UTI decreased from 13.1% at baseline to 4.9% one year later ( $p < .05$ ), and the use of the female urinary diversion device increased from 2.9% to 28.6% one year later ( $p < .05$ ). The prevalence for candida, vaginitis, UTI, pyelonephritis, and menstrual disorders all significantly decreased. **Adoption:** 100% of units contacted accepted the WHPP. **Implementation:** The intervention fidelity checklists and audit tools indicate that the classes were taught according to the planned curriculum. **Maintenance:** Ten units incorporated the WHPP into routine training. **Implications:** The decreased prevalence of gynecologic disorders in the population indicates that a gynecologic health promotion program in the community setting may have widespread effects on women throughout the entire target population. Additionally, the findings indicate the potential to decrease individuals' genitourinary health problems and impact hygiene behaviors while in austere environments. The WHPP has been tested and found to be both an effective program, and efficacious for improving military women's health and should be adopted into routine practice.

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**Abstracts of Podium Presentations**

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**HOSPITAL CULTURE AND ENVIRONMENT**

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EXPLORING SAFETY CULTURE IN THE  
JORDANIAN HOSPITALS: A BASELINE STUDY

*Mohammad M. Suliman*

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TAMING THE BEAST: A LEAN PROJECT FOR  
EXAMINING MEETING EFFICIENCY AND EFFICACY

*Patricia Frohock Hanes*

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THE RELATIONSHIP BETWEEN BURNOUT  
AND A HEALTHY WORK ENVIRONMENT

*Lesly Kelly*

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GEMBA: GROWING A PRACTICE-BASED NURSING  
RESEARCH PROGRAM IN A LEAN CULTURE

*Karen A. Thomas, Debra Ridling*



# HOSPITAL CULTURE AND ENVIRONMENT

## Exploring Safety Culture in the Jordanian Hospitals: A Baseline Study

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Safety culture is a group of shared values, attitudes, perceptions, and behaviors that determine the commitment of the healthcare organizations to safe practice. Understanding health care workers' perceptions of safety culture is essential for maintaining a safe medical practice and decrease medical errors. The aim of this study is Assess the Jordanian nurses' perception of safety culture in hospitals. A descriptive, cross sectional design was used. The Arabic translated version of Hospital Survey of Patient Safety Culture was administered to a convenient sample of nurses from seven hospitals located in north and middle of Jordan. Out of 1000 nurses who received the questionnaire, 391 nurses completed it, with a response rate of 39.1%. The mean age of nurses was 29 years (SD = 5). The majority were females (n= 232, 59.6%). The average positive response rate to the 12 dimension of safety culture ranged from 20.0% to 74.6%. The average positive response rates of the 12 composites are lower than the benchmarks of Agency of Health Research and Quality (AHRQ) in 2014. Further analysis reveals significant differences in the many dimensions among the public, private, and university hospitals. This study provides evidence on nurse's perceptions of patient safety culture in Jordan. Jordanian nurses perceive their hospitals as places that need more efforts to improve safety culture.

# HOSPITAL CULTURE AND ENVIRONMENT

## Taming the Beast: A Lean Project for Examining Meeting Efficiency and Efficacy

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**Background:** Meetings are a necessary part of institutional functioning.

Members of a hospital governance board expressed frustration with various aspects of meetings including length, adherence to stated rules of order, civil discourse, content, and physical elements related to the meeting place. Perceptions included “hijacking” of meetings by outspoken individuals and resultant reluctance to speak/participate by other members.

**Purpose:** The purposes of this study were to understand the Lean process and examine the efficacy and effectiveness of meetings using Lean principles.

**Methods:** Issues around meeting efficiency and effectiveness were identified as problematic and were researched using a Lean approach. While numerous books and articles have been written on meetings, it was important to understand perceptions and processes relative to specific meetings, here, board meetings for a hospital system. Lean principles allow for flexible research methods. Qualitative and quantitative data were obtained through GEMBA walks, online surveys, and personal interviews with members, ex-officio members, administrators, and other stakeholders. Members of outside boards were interviewed for contrast with other facilities’ meeting standards. As part of the lean process, a fishbone diagram was constructed to identify major categories of issues related to meetings. GEMBA walks were conducted to obtain firsthand visual data. Based on these interviews, the fishbone categories were further refined. A survey was constructed based on those categories and specific issues that were identified.

**Results:** Members expressed frustration with conduct and content of meetings. Frequent hostile or uncivil exchanges during and between meetings caused stress and resentment among board members. Respondents felt that guidelines were needed for speaking and time limits needed to be set for agenda items and responses as well as limiting sidebar conversations. Other concerns included physical health due to long meetings lasting 3-4 hours into the evening, uncomfortable physical environment, unhealthy food choices, board orientation, accuracy of board minutes, adherence to stated rules of order, and discipline of unruly/uncivil members. Wastes were identified. Bylaws were changed to reflect clearer integrity and civility requirements resulting in a change in board membership. Limits were set and enforced by the chair on the amount and number of times a person could speak. Agenda items were more closely timed with better adherence to bylaws on submitting voting items. Food issues were addressed by changing chefs. Physical issue concerns resulted in a change to a larger venue closer to the parking lot with easier access. Better board orientation is being addressed.

**Implications:** Meetings are necessary but are often long and unproductive or are disrupted by members. People may be unprepared, disengaged, or unwilling to speak. Unproductive meetings are a waste of time, assets, and human capital. Lean principles and strategies can be applied to meetings in any setting to make them more efficient and effective, which can have enormous financial impact on the institution. Further research can include flipping meetings as an organizational strategy.

# HOSPITAL CULTURE AND ENVIRONMENT

## The Relationship between Burnout and a Healthy Work Environment

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**Purpose:** The purpose of this study was to examine associations between work environment characteristics and burnout in critical care nurses in three intensive care units (ICU) at a large hospital in the southwest United States.

**Background:** Compassion fatigue (CF) is described as the combination of burnout and secondary traumatic stress (STS) and is balanced by the compassion satisfaction (CS) one derives from their work.<sup>1</sup> Recognizing the detrimental consequences for both the individual and organizations, studies have indicated meaningful recognition, one component of the American Association of Critical Care Nurses (AACN) model of a healthy work environment (HWE)<sup>2</sup>, is an important contributor to decreasing nurses' burnout.<sup>3-4</sup> As nurse and patient outcomes have been clearly linked to HWEs,<sup>5-8</sup> this study proposed testing the entire AACN model to compassion fatigue (burnout, secondary trauma) and compassion satisfaction.

**Methods:** Full and part time nurses in ICUs at the study hospital were invited to participate in a survey that asked demographics, the Professional Quality of Life (ProQOL) instrument<sup>1</sup> and the AACN HWE assessment<sup>2</sup>. The three outcome variables of the ProQOL (burnout, secondary trauma, and compassion satisfaction) were each individually assessed in separate models with the six standards for a HWE (skilled communication, true collaboration, effective decision making, appropriate staffing, and authentic leadership), while controlling for demographic variables.

**Results:** Nurses ( $N = 110$ ) were primarily bachelors prepared (71.6%) with an average of 7.2 years of experiences. Approximately 80.7% of the sample were female and 50.2% were certified. Significant negative correlations were demonstrated between burnout and all six HWE standards ( $p < .01$ ) and positive correlations were shown between compassion satisfaction and four HWE standards ( $p < .05$ ). Compassion satisfaction was significantly predicted by authentic leadership ( $B = 2.89, p = .003$ ) and neared significant prediction with the meaningful recognition HWE standard ( $B = 1.52, p = .055$ ). Secondary trauma was not significantly predicted by any of the HWE standards. Five of the HWE standards predicted burnout (skilled communication  $B = -2.36, p = .009$ ; true collaboration  $B = -1.95, p = .053$ ; effective decision making  $B = -2.74, p = .012$ ; appropriate staffing  $B = -2.94, p = .001$ ; meaningful recognition  $B = -.239, p = .002$ ; authentic leadership  $B = -3.25, p = .001$ ). Thus, nurses describing working in healthy work environments reported significantly lower burnout.

**Implications:** The findings of this single site sample demonstrate how HWE standards are clearly associated to burnout. The data is useful in guiding clinical nurses and nursing leadership in implementing the AACN HWE standards as a mechanism for decreasing burnout. Future proposed research focuses on larger, multisite research that explores the potential linkages between burnout, the work environment, and nurse and patient outcomes, with significant implications for nurse retention, nurse and patient satisfaction, and quality of care.

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# HOSPITAL CULTURE AND ENVIRONMENT

## Gemba: Growing a Practice-Based Nursing Research Program in a Lean Culture

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**Purposes/Aims:** *Gemba* is a Japanese term referring to the place where value is created. In organizations practicing lean production, *Gemba* is where the organization's production occurs. In nursing *Gemba* is at the level of care delivery. The purpose of this project was to develop a practice-based nursing research program within a regional pediatric hospital where a lean culture is organic.

**Rationale/Background:** Clinically relevant nursing research evolves from practice-based questions derived within the context of continuous performance improvement (CPI). Using the Plan-Do-Check-Adjust (PDCA) cycle, evidence-based practice and quality improvement are integral to performance improvement; however research is essential when there is a gap in existing knowledge. Practice-based nursing research questions generate knowledge contributing to improved patient care, thus adding value.

**Approach:** In order to obtain institutional buy-in for a nursing research program, the program had to both demonstrate value and align with the Toyota 4P model. Philosophy. Organization wide the hospital is deeply centered in lean perspective. Transformational nursing leadership was key in initiating the nursing research program within this context and committing financial resources with the long term goal of growing into a center for pediatric nursing research. The program had to demonstrate value beyond nursing engagement, but as a means of improving patient care. Process. A competitive intramural nursing grant system was established. Procedures for grant submission, review, and oversight were created. Resources and support for unfunded research were also developed. A nursing research web site containing information and linkages to resources was launched. People and Partners. Continuing development of research capacity among nurses focuses on a mentoring model that emphasizes "just in time" learning with an experienced nurse researcher working directly with nurses. Networking with nurse researchers from academic partners is enhancing collaboration and expansion. The nursing research program functions within both the department of nursing within the medical center and the Research Institute. The Research Steering Committee, which meets monthly, is composed of nurses broadly representing care areas and nursing roles, CCTR personnel, and affiliated nurse researchers. Problem Solving. CPI is utilized to improve nursing research program processes. The conduct of research is viewed from the eyes of the novice researcher, assisting in development of user-friendly guides to address sticking points. Systematic evaluation of grant recipient experiences is used to improve use of resources, and increase efficiency.

**Outcomes:** The first nursing grants were awarded in January 2014. At this time there are 16 funded projects representing 24 nurses as principle and co-investigators. Eight projects have completed data collection and manuscripts are in preparation. Hesitancy to publish has been identified as a sticking point and writing workshops are being implemented to increase dissemination efforts. Eight pediatric nurse researchers from academic settings are now affiliated with the research program.

**Conclusions:** The nursing research program is demonstrating early success and continued growth evidenced by increased visibility of nursing research and heightened research interests among nurses. Emphasis on *Gemba* and practice-based research questions, as well as supporting novice researchers, is effective in increasing integration of nursing practice and research.



**Abstracts of Podium Presentations**

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**HOSPITAL WORK ENVIRONMENT**

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**CONTINUING NURSING EDUCATION NEEDS AND  
WORK-RELATED FACTORS OF REGISTERED NURSES**

*Nuhad Yazbik Dumit, Suzanne R. Dhaini, Suha Fares*

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**EXPLORING COMPASSION FATIGUE  
IN EMERGENCY NURSES**

*Lindsay Bouchard, Kate G. Sheppard*

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**ED STAFF TRAINING IN WORKING EFFECTIVELY  
WITH BEHAVIORAL HEALTH PATIENTS**

*Marysol Cacciata, Mary Wickman*

# HOSPITAL WORK ENVIRONMENT

## Continuing Nursing Education Needs and Work-Related Factors of Registered Nurses

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*Suha Fares, PhD<sup>1</sup>*

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**Background:** Nurses need to demonstrate high levels of competencies when they enter the hospital. A competency-based approach (knowledge and skills) to their education is recommended to ensure patients' safety and needs are met.

**Objectives:** 1) Identify the areas of knowledge and skills in need for improvement among registered nurses in Lebanon; 2) determine the socio-demographic (i.e. region of work; nursing education; nursing experience) and work related factors (i.e. service unit), associated with their areas of interest for continuing education sessions (e.g. Technical skills; disaster management).

**Methods:** A cross-sectional study utilizing survey data of 3,900 registered nurses out of 5000 distributed questionnaires in a national sample of 150 Lebanese hospitals. Contingency tables and Chi square test were used to explore the association between socio-demographic, work related factors and areas of registered nurses 'interest to receive continuing education sessions.

**Results:** Updates about treatments of patients with various diseases (42%), infection control (41%), technical procedures (31%), and disaster management (32%) were the most frequent self-reported areas of interest for continuing education sessions. Nursing education background ( $p=0.0$ ) and unit of service ( $p=0.006$ ) were associated with training needs in organization and management of caseload; Lebanese region of work was associated with nurses interests in updates related to patients treatments ( $p=0.029$ ), and infection control ( $p=0.003$ ).

**Conclusions:** Research is needed to inform what are barriers and facilitators to continuing education and address the specific learning needs of this population.

**Implications for Practice:** Nursing staff development and nurse educators should offer continuing nursing education training tailored to the nurses' s needs to ensure adequate provision of care to patients. Longitudinal studies are needed to conduct targeted assessment of nursing training, taking onto account patient safety.

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**Funding:** This study was supported by the Order of Nurses in Lebanon.

# HOSPITAL WORK ENVIRONMENT

## Exploring Compassion Fatigue in Emergency Nurses

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**Purpose:** To describe the experiences, symptoms, and effects of compassion fatigue among emergency nurses, and to identify potentially effective interventions.

**Background:** Compassion fatigue is of growing concern within the profession of nursing due to its negative impact on nurses' mental and physical health, productivity, and patient care. There is a notable paucity of available qualitative research related to compassion fatigue in nursing, but available quantitative data indicates that emergency nurses could be especially at risk for developing compassion fatigue. Compassion fatigue is commonly conceptualized as being composed of burnout and secondary traumatic stress; however, previous exploratory research indicated that this definition might not adequately fit the experiences of compassion fatigue within the profession of nursing or in the specific setting of the emergency department.

**Methods:** Focus group interviews were conducted with emergency department nurses from four local hospitals. The participants were asked about their experiences, symptoms, and perceptions of the effects of compassion fatigue. Additionally, they were asked about potentially effective interventions to address compassion fatigue within their work setting. A content analysis of the interview data was performed to identify categories, common threads and patterns, and related themes.

**Results:** Although the participants' average length of time working in the emergency setting was less than two years, they all reported having intense experiences related to professional burnout, secondary traumatic stress, and the negative effects of compassion fatigue. The symptoms of compassion fatigue affected them both at work and at home. The contributing factors were viewed as clinical uncertainty, time constraints, dealing with patients at their worst, difficulty performing self-care activities, witnessing others' grief, and lack of resources and perceived leadership support. Symptoms of compassion fatigue included mental, physical, and emotional exhaustion, poor professional and personal communication, coping with dark humor, less emotional tolerance for loved ones, and detachment/dissociation. The suggested potential interventions comprised of self-care activities, debriefing with clinical staff, continuing education opportunities, and increasing awareness about compassion fatigue in the work setting.

**Implications:** The data from this qualitative descriptive study expands our knowledge of the concept and ramifications of compassion fatigue in nursing, specifically in the emergency setting. It also offers potentially effective interventions to prevent and address the negative effects of compassion fatigue. These suggested interventions could be used by nursing leaders to improve nurses' quality of life and patient care.



# HOSPITAL WORK ENVIRONMENT

## ED Staff Training in Working Effectively with Behavioral Health Patients

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**Purposes/Aims:** The purpose of this study was to determine the effectiveness of a staff educational intervention for Emergency Department (ED) nurses titled “Management of the Behavioral Health Patients in the Acute Care Setting and Crisis Prevention.”

**Rationale/Conceptual Basis/Background:** Approximately 20% of the adults living in the United States are diagnosed with mental health disorders. Psychiatric disorders are common among hospitalized patients and these patients, when admitted to the acute care setting, have a higher acuity level and subsequently are at risk for adverse outcomes related to prolonged length of stay and re-hospitalization. Patients admitted to non-psychiatric settings may be at risk for displaying aggressive behaviors and disruptive and verbal aggressions. Nurses working in such settings need to have competency in assessing and intervening with the patients’ psychiatric symptoms in addition to their medical diagnosis. Nurses working on non-psychiatric units, however, may lack competencies and feel unprepared to care for patients with such behaviors.

**Methods:** This study used a longitudinal survey design. The study setting was a community hospital with a high volume of behavioral health patients seen in the ED. Nursing leadership identified a need for further staff education in effectively dealing with the management of behavioral health patients. A convenience sample of nurses attending this educational intervention was utilized for subject recruitment. The class was facilitated by a content expert in mental and behavioral health nursing. While all staff was required to attend the class, participation in the study was voluntary. The Behavioral Health Care Competency Survey (BHCC), a previously validated tool, was designed to measure hospital nurses’ perceptions of their individual behavioral healthcare competencies and assesses four primary nurse competencies (subscales): assessment, interventions, ability to recommend psycho-tropics, and adequacy of resources. The survey was administered before the class session, immediately after the class session, and again in 6 months.

**Results:** The sample size was 44 experienced ED nurses with a mean score of 8.30 years of work experience in the ED (SD=6.34) and longevity at the Medical Center (M=8.01, SD=6.30). While the total number of code gray calls decreased hospital wide since an overall high in 2011, there was an increase in numbers from 2012-13 (33) to 2013-14 (85) and an increase in the number of patients with psychiatric or chemical dependency diagnoses. The number of ED code gray calls over the last three years ranged from 8 to 17. ED code gray calls following the staff training was 3 with 42 code gray calls hospital wide. BHCC scale findings demonstrated a significant increase in nurse competency from pre-test to post-test BHCC scores. These changes were sustained at the 6-month survey.

**Implications:** Nurses demonstrated increased competency in the areas of assessment, interventions, ability to recommend psycho-tropics, and adequacy of resources following a behavioral health education intervention. Notably, these changes and perceived participant effectiveness in working with the behavioral health client were sustained 6 months after the intervention. The educational intervention was effective in increasing behavioral health competency and was associated with decreased ED code gray calls.

## Abstracts of Podium Presentations

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### INFORMATICS AND BIG DATA

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EXPLORING NURSES' PERCEPTIONS OF THE EHR  
USING QUALITATIVE DATA TRIANGULATION

*Susan M. Renz, Jane M. Carrington*

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TO SHARE OR NOT TO SHARE?  
A QUALITATIVE ANALYSIS OF RT-CGM  
DATA SHARING WITH CARE PARTNERS

*Michelle Litchman, Nancy Allen, Cindy Berg*

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A NOVEL STAKEHOLDER ENGAGEMENT APPROACH  
FOR PATIENT-CENTERED OUTCOMES RESEARCH

*Katherine K. Kim*

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COMMON DATA ELEMENTS:  
ON THE ROAD TO BIG DATA?

*Hilaire J. Thompson*

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PRACTICAL APPLICATIONS OF VALUE-BASED  
NURSING CARE USING BIG DATA

*John M. Welton, Bonnie Adrian, Catherine Kleiner*

# INFORMATICS AND BIG DATA

## Exploring Nurses' Perceptions of the EHR Using Qualitative Data Triangulation

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**Purpose:** The electronic health record (EHR) was considered the solution to address the nearly 100,000 patient deaths each year in hospitals in the United States due to medical errors involving ineffective communication among healthcare providers. Unfortunately, unintended consequences while using the EHR have limited the achievement of this goal. Research that seeks to examine nurses' perspectives of using the electronic health record (EHR) can inform our understanding of the unintended consequences navigated by nurses using the current EHR. The purpose of this research is to test a novel method for analyzing qualitative data from a study that sought to understand unintended consequences experienced by nurses using the EHR. Here we will present a description of the innovative method of analysis and results from this research.

**Method:** A dataset consisting of nurses' perceptions of the unintended consequences while using the electronic health record (EHR) was obtained and, after human subjects approval, was analyzed using conventional content analysis to identify categories and themes. This same data was then analyzed using natural language processing (NLP) software (Linguistic Inquiry Word Count or LIWC<sup>□</sup>) to further explore meanings derived from text and increase understanding of the perspectives of the nurse participants. Results of both analyses were compared and contrasted.

**Results:** Conventional content analysis yielded 5 categories and 16 themes. LIWC analysis yielded 14 dictionaries with numerous sub-categories within each dictionary. These two methods triangulated illustrated by the following example. The category "Need for Streamlined Systems" was identified through conventional content analysis, wherein nurses described frustration with the use of the EHR, doubt that clinical data is captured accurately and conveyed appropriately during nurse hand-off, and that the system was cumbersome and challenging to use. LIWC<sup>□</sup> analysis identified two sub-categories within the summary variable dimension, "clout" and "tone", wherein this same data revealed both negativity and lack of confidence in the utility of the EHR.

**Implications to Nursing:** Conventional content analysis is a widely accepted method of data analysis for qualitative and mixed-methods research. Using LIWC as an additional method of analysis for within method triangulation has the potential to explore a broader view of the nature of language or linguistic patterns used by study participants. These methods have application in nursing research, including research in populations that are significantly influenced by context and diverse, intrinsic characteristics such as older adults residing in nursing homes.

**Conclusions:** The impact of ineffective communication in healthcare and impact on patient safety is significant. Increasing our understanding of how nurses perceive unintended consequences while using the EHR has important implications for re-design.

# INFORMATICS AND BIG DATA

## To Share or Not to Share?

### A Qualitative Analysis of RT-CGM Data Sharing with Care Partners

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**Aims:** The purpose of this paper is to: 1) identify the types of relationships individuals have who share and follow real-time continuous glucose monitor (RT-CGM) data and 2) examine the benefits and challenges related to RT-CGM data sharing from the patient and care partner perspective.

**Background:** Management of type 1 diabetes occurs in the social context. New technologies such as RT-CGM now have the option to share glucose data via mobile smartphone technology with care partners. There is a lack of understanding how RT-CGM data sharing plays a role in the relationship between patients and their care partners.

**Methods:** This qualitative descriptive study was conducted by examining publicly available blogs focused on RT-CGM and data sharing. A qualitative content analysis of blogs and associated comments was conducted.

**Results:** This study examined 11 blogs with 45 corresponding comments. Blog length, without comments, averaged 1457 words (range 205-1608). Nine of the 11 blogs were authored by individuals living with diabetes while two were authored by care partners. Comments were authored by patients (n=19), parents (n=6), a physician (n=1), unknown (n=14) and included author replies (n=5). RT-CGM data sharing occurred within six different types of dyads (n=15), two categories (follow and share) of five different types of triads (n=10), and a physician following multiple patients. Three “follow” triad cases identified care partners who were following two people in the family with type 1 diabetes, while seven “share” triad cases identified patients who were sharing RT-CGM data with two care partners. The results of the study provided insight about the benefits and challenges related to individuals with diabetes sharing their RT-CGM data with a care partner(s). The analysis resulted in three themes: 1) RT-CGM data sharing enhances feelings of safety, 2) the need to communicate boundaries to avoid judgement, and 3) patient choice about when and when not to share RT-CGM data with their care partner.

**Implications:** Patients with type 1 diabetes and parents of children with type 1 diabetes are empowered by the ability to share and follow RT-CGM data. Our findings suggest that RT-CGM data sharing among adults with type 1 diabetes can complicate relationships with care partners. Health care providers need to engage patients and care partners in discussions about the proper etiquette related to RT-CGM sharing and following to avoid frustrations within the relationship.

# INFORMATICS AND BIG DATA

## A Novel Stakeholder Engagement Approach for Patient-Centered Outcomes Research

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**Background:** The engagement of patients and others stakeholders is a critical element in the design of patient-centered outcomes research (PCOR) studies. The Patient-Centered Outcomes Research Institute (PCORI) puts forth four principles of patient and stakeholder engagement: 1) reciprocal relationships—clear roles and decision making; 2) co-learning—understanding by researchers and stakeholders of research process and patient-centeredness; 3) trust, transparency, and honesty—inclusive and honest communication; and 4) partnership—valued time and contributions. However, methodology for patient and stakeholder engagement in research governance is in a nascent stage of development. Research governance includes both the operationalization of network policies and the determination of research priorities. The objective of this study was to develop a methodology for a PCOR-based, purposefully-designed, research governance approach which was demonstrated in pSCANNER: patient-centered SCALable National Network for Effectiveness Research, a stakeholder-governed, distributed clinical data research network of 21 million patients.

**Methods:** PCORI engagement principles were applied to the development of network policies and determination of research priorities. Stakeholders were engaged in groups via conference calls and online focus groups, as well as one-on-one follow up calls. Three primary venues for engagement were developed: 1) stakeholder advisory boards (SABs) that were involved in planning and development the governance activities and refining policies; 2) stakeholder research prioritization expert panels that set research priorities using an online, modified Delphi method, a deliberative and iterative approach to attaining consensus with discussion and statistical feedback. The panels consisted of patients, clinicians and researchers in three conditions: weight management/obesity (WMO), heart failure (HF), and Kawasaki disease (KD); and 3) a stakeholder engagement team of staff who implemented the activities.

**Results:** 46 unique stakeholders comprised of 20 patients/patient advocates and 26 clinicians were engaged in the SABs, supported by a stakeholder engagement team of 11 PIs and staff at varying times during the study. Each principle was manifested in several ways including policy documents, flexible logistical arrangements, educational materials, open decision-making processes, rigorous and transparent determination of research priorities, and equitable compensation for participation.

**Implications:** Advantages of designing research governance activities with attention to PCOR principles include potential for meaningful participation of patients, and interaction among diverse stakeholders who might not typically work together. This study represents one of the first to demonstrate PCOR-principled, purposefully-designed, approach for research governance that may serve as a model for other researchers interested in research networks and patient-centered outcomes research.

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**Funding:** pSCANNER is supported by the Patient-Centered Outcomes Research Institute (PCORI), Contract CDRN-1306-04819.

# INFORMATICS AND BIG DATA

## Common Data Elements: On the Road to Big Data?

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**Purpose:** This session will discuss the goals, development, issues and current state of the concept of common data elements (CDEs) and data harmonization to support nursing research.

**Background:** The overarching purpose of CDE Projects such as the NINDS Common Data Elements ([www.commondataelements.ninds.nih.gov](http://www.commondataelements.ninds.nih.gov)) and the new NINR CDE Data Repository Pilot (<https://cde.nlm.nih.gov/form/search?selectedOrg=NINR>) is to standardize data acquisition so that it is collected similarly across studies for the same constructs. CDEs are then harmonized across multiple studies in a large repository, which can be accessed through data sharing agreements. This can foster the movement of data into “big data” by enabling comparison across multiple studies, at a much greater rate than any investigator could collect independently.

**Methods:** We designed and implemented studies using CDEs for 1) traumatic brain injury and 2) sleep self-management. Process, data, outcomes and lessons learned from working with CDEs and Federal data repositories were evaluated.

**Outcomes:** We were able to easily integrate CDEs in place of elements used in prior studies study to allow for the improved harmonization with those of other researchers. To enrich the assessment in some areas, we chose to add supplemental and unique measures to the study protocol without negatively impacting subject recruitment or burden. The use of CDEs and data sharing requirements necessitated additional human resources with informatics expertise for data management and sharing.

**Conclusions:** Integration of CDEs into nursing research activities is possible, but requires prior planning and thought. Investigators need to have the necessary resources, both human and financial, to support data management associated with meeting data-sharing requirements. Once data repositories are populated, they will have the potential to unleash the power of big data for nurse scientists.

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# INFORMATICS AND BIG DATA

## Practical Applications of Value-Based Nursing Care Using Big Data

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**Purpose:** There is a continuous stream of high volume and high velocity clinical and operational data collected and used by nurses. The key question is how can these data be used to improve quality, safety, performance, costs, outcomes and ultimately the value of nursing care? In this paper, we propose a new approach and method to measure nursing care quality and value using time-referenced data linked to individual nurses and patients.

**Background:** Traditional methods of measuring nursing care quality, safety, and costs typically use aggregate data collected over time, for example, the number of medication errors, falls or infections per quarter or nursing hours per patient day by month. With the advent of electronic health records (EHR), new methods to extract near real-time data are emerging and allow simultaneous measurement of both performance, quality and costs.

**Conceptual Foundation:** The value-based nursing care model is a product of a national expert panel made up of nurses and other healthcare and informatics professionals to address the emerging big data capability in nursing and healthcare. The focus of this work is to identify ways to improve and optimize nursing care, improve outcomes, and decrease costs. The premise of this model is: 1. All nurses are viewed as providers of care; 2. Nursing care is defined as the encounter between a nurse and patient, family, or community; 3. Data from clinical and operational records are extracted into a common data model using unique patient and nurse identifiers; 4. Based on these data, analysis is conducted at the individual patient-nurse encounter; 5. These data can be aggregated across many settings to compare and share information about nursing care and build nursing business intelligence and data visualization products for clinicians, nurse leaders, policy makers, and payers.

**Exemplar:** Using the nursing value data model, nurses in an inpatient setting are linked to each patient through the shift assignment. Direct care time and direct nursing costs using the nurse's wage are allocated to each patient. These data are linked to an acuity instrument based on Nursing Outcomes Classification (NOC) to identify the trajectory of outcomes on a daily basis associated with patient and nurse demographics and characteristics. Nurses staffing trends are monitored using real-time analysis of medication administration delays and timely administration of PRN opioid and non-opioid analgesics to manage pain. Trends are noted for patient care outliers and patient level nursing costs and are continuously monitored by Diagnosis Related Group (DRG) within each bundled payment diagnosis. New predictive analytic models are produced to identify the best nursing skill and experience mix that produce the lowest rates of adverse events and optimum cost per patient.

**Conclusions:** The value-based nursing care model provides an emerging capability to measure and benchmark nursing care and performance in ways that have not been possible at the individual nurse-patient level across many different settings using time-referenced big data analytics to measure the quality, costs and outcomes of nursing care.

**Abstracts of Podium Presentations**

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**ISSUES IN ACUTE CARE**

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**PUMP INTEGRATION: CLINICAL NURSE RESPONSES  
TO ADVANCES IN INFUSION TECHNOLOGY**

*Bonnie Adrian, Deborah G. Bonnes*

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**MONITOR ALARM FATIGUE**

*Robin White*

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**COMPASSION FATIGUE & COMPASSION  
SATISFACTION AMONG ONCOLOGY  
AND CRITICAL CARE NURSES**

*Sadeeka Al-Majid, Nika Carlson, Merideth Faith, Cyril Rakovski*



# ISSUES IN ACUTE CARE

## Pump Integration: Clinical Nurse Responses to Advances in Infusion Technology

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**Background:** The role of the nurse changes with every new advance in technology to minimize medication error. Approximately 80% of hospitals across the United States use smart infusion pump technology to identify and prevent medication errors, yet few facilities have technologically integrated infusion pumps with barcode medication administration, computerized prescriber order entry, and electronic health records for full interoperability. Barcode scanning triggers the transmission of physician-ordered, pharmacist-verified infusion parameters from the patient's electronic health record to pre-populate the infusion pump, minimizing the potential for manual programming errors. Pump data for rate/dose changes and infusion volumes flow back into the electronic health record for accurate documentation. Of the small number of institutions that have fully implemented infusion pump integration, none has published research examining the impact on nurses of this major change in practice.

**Purpose:** Describe nurse perceptions of and satisfaction with infusion pump integration across four nursing specialties in a health system with five diverse hospitals inclusive of an academic medical center, community hospitals, and a safety net hospital.

**Method:** After obtaining Institutional Review Board approval, the investigator invited nurses working on 20 select units across five hospitals to participate in a survey using the Clinical Information System Implementation Evaluation Scale 2.0, a published, validated instrument of 31 questions evaluating the impact of new healthcare technology with subscales focused on patient care, workload, dependability, and more. Questions to collect nurse demographic, experience, and education were also included. Pre and post-implementation surveys were administered anonymously, with respondent-generated "code words" facilitating 61 matched pre/post survey pairs completed by the same nurse. A total of 347 nurses completed a survey (33.5% response rate) at three months post-implementation. One-year post-implementation survey administration will soon commence. Analysis included standardized Cronbach's alphas, descriptive statistics and t-tests for comparisons, and linear regression. Free-text response items offer qualitative data from the anonymous survey, triangulated via in-person, qualitative mini-interviews (<5 minutes) conducted on additional nursing units.

**Results:** Three month post-implementation findings include modest overall satisfaction, with strong satisfaction with training, modest satisfaction with impact on patient care, and significant dissatisfaction with workload impact. Statistically significant differences among groups was found for years of experience and nursing specialty on patient care and workload measures, with no statistically significant differences associated with education level or region within the system. Qualitative findings triangulate survey results and elaborate on quantitative results. The presentation will also highlight quality improvement process and outcomes measures beyond the scope of the research. Example outcomes to date include a 65% decrease in mean number of technology-preventable medication errors. Staff compliance with utilizing the technology is averaging 89%.

**Implications:** Improved intravenous medication administration safety can be achieved through integrated technology. This research points to opportunities to improve efficiency that will be required to win higher nursing satisfaction with pump integration.

# ISSUES IN ACUTE CARE

## Monitor Alarm Fatigue

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**Purpose/Aims:** The purpose of this study was to determine if nurses in critical care areas are at risk for developing alarm fatigue.

**Rationale/Background:** This study provided educational information and useful skills in decreasing alarm fatigue in nurses working in the Emergency Department (ED), critical care, and step-down units. Previous studies showed that although devices monitor various aspects of a patient in the hospital setting are intended to improve safety, sometimes they actually cause harm. When alarm frequency is high, nurses can become desensitized and develop alarm fatigue, where a large number of alarms as well as a lack of nurses' knowledge on ways to properly set alarms creates fatigue. In April 2013, JCAHO issued a sentinel event alert for 98 alarm-related incidents that occurred between 2009 and 2012 that led to 80 patient deaths, 13 patients with a permanent loss of function, and five patients requiring extended care. Sensory overload from monitor alarms can make it difficult for staff to distinguish the urgency of an alarm and identify its source since alarms blend into background noise. Improving monitor alarm management requires a proactive, systematic approach.

**Undertaking/Best Practice/Approach/Methods/Process:** This mixed methods, descriptive study was to determine if nurses working in the critical care areas are at risk for developing alarm fatigue. Nurse managers were approached to request participation of their unit in the study. All nurses in the study will be provided with training on the organization's process for safe monitor alarm management. Nurses were surveyed to determine baseline knowledge of monitor alarm management. Observation of nurses responding to monitor alarm was performed. Education was conducted with nurses on methods to decrease alarm fatigue. A post-education survey was administered to determine any change in alarm knowledge and of methods to reduce alarm fatigue. A task force was created to make recommendations to the Critical Care Committee to set guidelines for initially setting patients' monitor alarms as well as alarm management.

**Outcomes Achieved/Documented:** This study was performed from September, 2015 through May 2016. In the past year, 46% of nurses witnessed a delay in response to an urgent situation due to nurse over-stimulation from constant alarms. In the past year, 12% witnessed patient harm as a result of nurse over-stimulation from constant alarms on the unit. After staff nurses were educated on the concept of alarm fatigue and monitor alarms adjusted, nurses rated alarm disruption as significantly decreased. In addition, nurses rated a 10% improvement in floor nurses' responses to monitor alarms. Conversely, nurses reported a slight increase in patient harm due to nurse over-stimulation from constant alarms. Due to alarm fatigue education, nurses may have a greater awareness of the concept of alarm fatigue, making them more aware of potential complications posed from alarms not attended to promptly. The health care facility is installing new cardiac monitors in October, 2016 which will allow for better monitoring techniques. An additional study is planned to follow-up after the new monitors are in place.

**Conclusions:** Alarm fatigue can cause nurse burnout and interfere with high level patient outcomes.

# ISSUES IN ACUTE CARE

## Compassion Fatigue & Compassion Satisfaction among Oncology and Critical Care Nurses

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**Purpose/Aim:** To assess the prevalence of compassion fatigue and compassion satisfaction among oncology and critical care nurses in a Magnet designated community hospital. Specific aim was to identify demographic factors associated with compassion fatigue and compassion satisfaction.

**Rationale/Conceptual Basis/Background:** Cumulative grief and loss experienced by nurses who take care of patients with critical or terminal illness may contribute to the development of compassion fatigue. This phenomenon is described as physical, emotional, and spiritual exhaustion. Exhaustion related to compassion fatigue is often associated with inability to provide compassionate care, decreased quality of patient care, and decisions to leave the workplace or the profession. It is imperative for organizations to assess nurses for compassion fatigue and recognize it as a phenomenon that needs to be appropriately addressed. Decreasing compassion fatigue can increase nurses' satisfaction and retention and improve quality of patient care and patient safety.

**Methods:** A cross sectional survey design was used to collect data from direct care nurses and clinical supervisors working on oncology and critical care units in a non-profit community Magnet designated hospital in Southern California. A total of 38 nurses and 10 clinical supervisors completed the Professional Quality of Life (ProQOL) survey. The ProQOL consists of three subscales of 10 items each: Compassion Satisfaction, Burnout, and Secondary traumatic stress. Burnout and Secondary Traumatic Stress scales measure compassion fatigue. We implemented univariate linear regression models to assess the associations between the outcome variables of interest: compassion fatigue, compassion satisfaction and the demographic characteristics of the sample.

**Results:** There was a significant relationship between burnout and job title ( $p = 0.03$ ) with clinical supervisors having significantly higher levels of burnout compared to direct care nurses. Additionally, clinical supervisors had significantly higher levels of secondary traumatic stress compared to direct care nurses ( $p = 0.01$ ). A significant relationship also existed between burnout and years of experience; nurses who had less than one-year experience in nursing had significantly higher levels of burnout compared to nurses who had more years of experience in nursing. Although compassion satisfaction among clinical supervisors was slightly higher than that in direct care nurses, this difference did not approach statistical significance.

**Implications for Practice and Research:** Our results demonstrate that nurses who are within the first year of practice experience burnout at a significantly greater level compared to more experienced nurses. This finding may partially explain the high attrition rate, reported in the literature, among new nurses. Strategies to support new nurses and socialize them into the profession are warranted. Additionally, previous studies on compassion fatigue focused on direct care nurses. However, our findings suggest that clinical supervisors are at risk of compassion fatigue and thus, might also benefit from strategies designed to alleviate compassion fatigue.

**Abstracts of Podium Presentations**

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**ISSUES IN CARDIAC CARE**

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**CONFRONTING CARDIOVASCULAR HEALTH  
DISPARITIES AMONG FILIPINO-AMERICANS**

*Jacqueline Anh Nguyen, Lorraine S. Evangelista, Janett Hildebrand*

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**MEDICATION ADHERENCE/UNPLANNED 30-DAY  
HEALTHCARE IN ELDERLY HEART FAILURE PATIENTS**

*Cheryl Westlake, Kristen Sethares*

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**OPTIMIZING SELF-MANAGEMENT IN OLDER ADULTS  
WITH HEART FAILURE: A FEASIBILITY STUDY**

*Ramesh Thakur, Julie Fleury, Nelma Shearer, Michael Belyea*

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**COGNITIVE IMPAIRMENT AND HEART FAILURE:  
IDENTIFYING FACTORS THAT DIMINISH SELF-CARE**

*Daniel David*

# ISSUES IN CARDIAC CARE

## Confronting Cardiovascular Health Disparities among Filipino-Americans

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**Purpose:** This descriptive, cross-sectional study was conducted to 1) describe cardiovascular disease (CVD) risk factors -- obesity, blood pressure (BP), waist circumference, and presence of hypercholesterolemia -- in Filipino-Americans; 2) examine relationships between CVD risk factors and quality of life (QOL); and 3) assess independent predictors of CVD risk and QOL.

**Background:** Heart disease is the leading cause of death for all Americans, including the Filipino population. However, Filipinos are rarely studied even though they represent the second largest Asian American and Pacific Islander subgroup, with a population estimate of 3.4 million by 2060. Differences in cardiovascular risk factors as a function of ethnicity is substantial, but research in CVD health disparities in this population is limited.

**Methods:** Filipino-Americans were asked to participate in the study during health fairs at a local Asian market. Eighty-eight participants (mean age  $54 \pm 16$ , range 18-80, 46% male, 88% married) completed health surveys.

**Results:** Data showed that 48.9% and 36% were overweight or obese or had hypercholesterolemia compared to 70% and 28% in the general adult population in the United States (US). Twenty-six percent had a systolic BP  $\geq 140$  while 22% had diastolic BP  $\geq 90$  compared to 30% hypertensive adults in the US. The mean systolic and diastolic BP, body mass index, and waist circumference were ,  $130 \pm 18$ ,  $81 \pm 13$ ,  $26 \pm 4$ , and  $36 \pm 4$ , respectively. Associations between key variables are listed on Table; physical QOL was associated systolic BP, waist circumference, and hypercholesterolemia. After controlling for age and gender, CVD risk factors accounted for 13.2% of the variance in physical QOL.

Variables	1	2	3	4	5	6	7
QOL (mental)	1.00						
QOL (phys)	.278	1.00					
BMI	.799	.058	1.00				
Systolic BP	.064	.048*	.108	1.00			
Diastolic BP	.354	.352	.029*	.000**	1.00		
Waist Circumference	.211	.005**	.000**	.013*	.071	1.00	
Hypercholesterolemia	.957	.031*	.789	.119	.376	.177	1.00

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

**Implications:** Additional research is needed to better understand CVD risks and health disparities in Filipino-Americans. Further studies are also needed to inform the development of culturally tailored programs to enhance lifestyle behaviors and reduce CVD risks in this population.

## ISSUES IN CARDIAC CARE

### Medication Adherence/Unplanned 30-Day Healthcare in Elderly Heart Failure Patients

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**Purposes:** To describe verbal/recognition recall, health literacy, learning style, medication adherence, and unplanned 30-day healthcare (interface number and days since discharge) and the determinants of medication adherence and unplanned 30-day healthcare in HF patients.

**Conceptual Basis/Background:** The health literacy causal model by Paasche-Orlow and Wolf (2007) guided the study and describes health literacy as both a patient and system phenomenon that is linked to health outcomes through self-care, patient-provider interaction, and access/utilization of healthcare factors. Unplanned 30-day healthcare [emergency room (ER), outpatient-clinic (OP) visits, rehospitalizations] is an important outcome of heart failure (HF) care with higher than expected Centers for Medicare and Medicaid Services 30-day rehospitalization rates subject to penalty. Further, patients' medication nonadherence is a common precursor to unplanned 30-day healthcare associated with poor outcomes. Ejection fraction (EF) has been reported to be related to cognitive deficits, namely verbal/recognition recall particularly in elderly patients that may relate to health literacy, learning style, and medication adherence. However, few studies have described learning style and none have linked learning style to medication adherence in HF patients. Therefore, in HF patients, we described ejection fraction as a surrogate for verbal/recognition recall, health literacy, learning style, medication adherence, and unplanned 30-day healthcare (number and days since discharge) and the determinants of medication adherence and unplanned 30-day healthcare.

**Methods:** Verbal/recognition recall memory [EF (%)], health literacy (TOFHLA), learning style [VARK (Visual, Auditory, Read/write, Kinesthetic) questionnaire], and medication adherence [Self-Care HF Index – forget to take one of your medications item (1 – never/rarely to 4 – always/daily)] were collected in hospital from a convenience sample (n=95) of HF patients admitted to a community hospital. Patients were followed/data extracted from the medical record for unplanned 30-day healthcare.

**Results:** The majority were 75.9+11.9 years old, Caucasian (n=90, 94.7%), male (n=57, 60%), married (54, 56.8%), and retired (n=68, 71.6%) with an average of 11.85±4.2 years of education. Subjects had inadequate health-literacy (n=58, 61.1%), unimodal learning style (n=56, 58.9%) of which kinesthetic was the most frequently occurring (25, 44.6%). Most reported never/rarely forgetting to take a medication (n=51, 53.7%) and 55 (57.9%) experienced no unplanned healthcare within 30-days although the remaining 40 experienced one to five healthcare interfaces that occurred at 11.0 + 14.6 days post hospital discharge. A contrary finding was that those with worse verbal/recognition recall had better health literacy. Medication adherence determinants were better HF severity, non-kinesthetic learning style, and health literacy while better medication adherence was a determinant of fewer unplanned 30-day healthcare events.

**Implications:** In elderly, Caucasian HF patients with less a high school education and inadequate health literacy, consideration of health literacy and learning style, especially kinesthetic, in tailoring patient education may improve medication adherence and unplanned 30-day healthcare. Future research needs to address verbal/recognition recall memory and alternative patient education that reflects the needs of HF patients with inadequate health literacy and kinesthetic learning styles to improve medication adherence and ultimately, unplanned 30-day healthcare

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# ISSUES IN CARDIAC CARE

## Optimizing Self-Management in Older Adults with Heart Failure: A Feasibility Study

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**Purpose:** The purpose of this study was to examine the feasibility of the Health Empowerment Intervention (HEI) and to evaluate the effect of the HEI on theoretical mechanisms of health empowerment and purposeful participation, and outcome variables of self-management, functional health and well-being in older adults with heart failure.

**Background:** The population of older adults in the United States is growing disproportionately, with corresponding medical, social and economic implications. According to the Centers for Disease Control and Prevention, 5.7 million Americans have heart failure, and almost 80% of these are 65 years and above. Being a chronic condition, the responsibility of day to day management of heart failure principally rests with patient. Approaches to improve self-management are targeted at adherence, compliance, and physiologic variables, little attention has been paid to personal and social contextual resources of older adults, crucial for decision making, and purposeful participation in goal attainment, representing a critical area for intervention.

**Methods:** The study was a randomized controlled trial. Twenty older adults 65 years and above with heart failure were randomly assigned to the HEI and Attention Control groups. Intervention was delivered in 6 weekly sessions, each of one hour, to identify and build personal and social contextual resources of older adults with heart failure to optimize self-management, functional health, and well-being. Attention Control group received one-hour weekly sessions for six weeks on general health topics adapted from the healthy aging publications of National Institute on Aging. Data was collected at baseline (T1) and at six-week (T2) post intervention. Data was analyzed using descriptive statistics, t-test, correlations, and analysis of covariance.

**Results:** The participants in the HEI group found the sessions useful in identifying resources for enhancing purposeful participation in goal attainment. Analysis of covariance to evaluate changes over time resulted with significantly higher personal growth reflecting health empowerment ( $F = 5.51, df = 1, p = .03$ ), purposeful participation ( $F = 6.209, df = 1, p = .023$ ), and attainment of personal health goals ( $F = 8.030, df = 1, p = .00$ ) in the HEI as compared to Attention Control group. Significant effect of baseline scores was observed on six weeks' scores for self-management, functional health and well-being by explaining 34%, 30% and 54% of variance respectively. The mean scores for self-management, functional health and well-being were higher for the HEI ( $M = 14.90, SD = 4.38; M = 35.10, SD = 20.84$  &  $M = 61.43, SD = 8.94$  respectively) as compared to Attention Control group ( $M = 12.85, SD = 4.27; M = 28.99, SD = 21.78$  &  $M = 58.43, SD = 11.71$  respectively).

**Implications:** The findings supported the feasibility of a strength based approach to facilitate health empowerment in older adults with heart failure as well as the hypothesis that older adults receiving the HEI would have significantly better health empowerment, purposeful participation in goal attainment, self-management, functional health and well-being as compared to Attention Control group.

**Key Words:** Older adults, Heart failure, Self-management, Empowerment

## ISSUES IN CARDIAC CARE

### Cognitive Impairment and Heart Failure: Identifying Factors That Diminish Self-Care

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**Purposes/Aims:** The purpose of this study was to examine clinical, behavioral, and cognitive factors associated with self-care behaviors in heart failure (HF) outpatients.

**Rationale/Conceptual Basis/Background:** Heart failure patients are susceptible to unrecognized cognitive impairment (CI). Individuals with mild CI in the presence of HF are at increased risk for frequent hospitalization and death. In the outpatient clinic, patients are instructed to perform self-care behaviors which promote wellness and allow them to recognize early warning signs of cardiac decompensation. However, CI is rarely assessed. This deficit may contribute to incomplete understanding and diminished self-care behaviors that result to poor outcomes. This study investigates the impact of CI on factors associated with HF disease management and knowledge. The Integrated Theory of Health Behavior Change provided a framework for this study. The theory identifies three constructs (i.e., knowledge & beliefs, self-efficacy, and social support) in the presence of contextual factors (i.e., clinical, demographic, and personal factors) that influence the adoption of health behavior.

**Methods:** In this cross-sectional study, a convenience sample of one hundred and fifty one (n=151) outpatients was recruited from a HF clinic. Participants were assessed for mild CI with the Montreal Cognitive Assessment. Self-care behavior (maintenance, management, and confidence) was measured with the Self-Care of Heart Failure Index, version 6.2. Validated questionnaires were also used to measure patient activation, HF knowledge, illness beliefs, health beliefs, and social support. Demographics and past medical history were collected from a medical records review. Descriptive statistics and comparative analyses (t-test and chi-square) were used to describe the sample and identify differences between cognitively intact and impaired participants. Linear regression was used to identify factors associated with self-care behaviors.

**Results:** Thirty percent of the sample had mild CI that was previously unrecognized. Individuals with CI were significantly more likely to be hospitalized within the past six-months (69.8% vs. 49.5%,  $p = 0.025$ ). Cognitively impaired participants had significantly lower HF knowledge scores (73.16% vs. 83.93%,  $p < 0.001$ ). There were no significant differences in the mean scores of self-reported HF self-care maintenance or management in those with and without cognitive impairment. However, the cognitively impaired group reported significantly lower HF self-care confidence scores (56.92 vs. 68.98,  $p = 0.001$ ). Multiple regression was used to describe the variance in self-care behavior. Patient activation, illness perception, HF knowledge, social support, and hospitalization history explained 31.9%, 29.2% and 32.4% of the variance in HF self-care maintenance, management, and confidence, respectively. Furthermore, the interaction of CI and hospitalization history had a significant negative effect on the ability of patients to recognize and respond to HF symptoms ( $F(1,87) = 4.152, p < .05$ ).

**Implications:** Cognitive impairment is prevalent in HF outpatients and impacts important aspects of self-care. Routine screening for CI is needed in the outpatient setting. Patients with CI may benefit from interventions that support deficits in knowledge, social support, and self-efficacy. Prospective studies that evaluate the predictive ability of these variables on rehospitalization and mortality may permit enhanced assessment of patients that are vulnerable for poor outcomes.





**Abstracts of Podium Presentations**

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**LEADERSHIP STRATEGIES IN THE  
HEALTHCARE ARENA**

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**ADVANCE CARE PLANNING: HOSPITAL  
NURSES' ROLES AND PERCEPTIONS**

*Shigeko (Seiko) Izumi, Lauren Hoppert, Malinda Burt, Dana Bjarnason*

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**KNOWING WHAT MATTERS:  
RETHINKING CONTINUITY OF NURSING CARE**

*Jennifer Baird, Brenda Brawn, Sandra Mott, Emily Bergling, Jean Connor*

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**LEADING CHANGE AND KEEPING PACE  
WITH THE EVOLUTION OF PAYMENT MODELS**

*Sandra M. Maddux, Mary J. Waldo, Salomeja Garolis*

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**DEVELOPMENT AND TESTING OF DELEGATION GUIDELINES  
FOR NURSING HOME DIRECTORS OF NURSING**

*Elena O. Siegel, Kristen Bettega, Debra Bakerjian, Suzanne K. Sikma*

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**THE EFFECTS OF A NURSE LEADER  
STRESS MASTERY PROGRAM**

*Ellen Nadeau-Lefebvre, Margaret L. Beaman*

# LEADERSHIP STRATEGIES IN THE HEALTHCARE ARENA

## Advance Care Planning: Hospital Nurses' Roles and Perceptions

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**Purpose:** To describe nurses' current practice, confidence and perceptions about their roles in advance care planning (ACP).

**Background:** Despite increasing awareness about the importance of ACP in public and among healthcare providers, broad implementation of ACP as routine practice remains challenging. Misconception associating ACP with immediate death and dying, lack of clarity regarding who should take responsibility for ACP, and lack of training among healthcare providers to assist patients in ACP are some of the barriers identified in the literature and observed in clinical settings. Although facilitating and advocating for patients and families in their decision-making are within nurses' scope of practice, specific roles of nurses and their practice in ACP are not clearly described. As part of an organization-wide effort to increase ACP conversations with our patients, we have been assessing the healthcare provider needs in ACP practice, and then providing customized ACP education and training to various disciplines and departments in the organization. We are going to present our findings of nursing practice and their perceptions about ACP before and after the education.

**Methods:** Nurses on a hematological malignancies unit in a medical center were surveyed before, immediately after, and 3 months after a 1-hour educational session about ACP. The paper-and-pencil survey included 10 questions in which the nurses were asked to rate their confidence in performing various ACP practices. They were also asked how often they assisted patients with ACP, and what they perceived as barriers in assisting patients with ACP. Survey responses were analyzed using a paired *t-test* to show changes in confidence and practice, and commonly perceived ACP barriers before and after the educational session.

**Results:** 42 out of 60 nurses (70%) on the unit completed all three surveys. Subjects were 87% white, 98% female, and mean years of nursing experience was 9.8 years. Before the educational session, nurses were least confident in performing 1) documenting ACP conversations in the electronic health record, 2) providing ACP information to patients, and 3) discussing how to complete an advance directive (AD). The educational session proved to be effective in increasing nurses' confidence in all areas, and the areas that initially reported the least amount of confidence showed the greatest improvement from "1-a little bit" to "3-quite a bit." However, 3 months after the educational session, nurses' confidence in documentation and discussing completion of AD dropped to "2-somewhat." There was no significant difference in nurse-reported frequency of assisting patients in ACP after the educational session. Lack of time, patients/families not wanting to talk about ACP, and not knowing enough about ACP were the perceived barriers most reported by the nurses.

**Implications:** The educational session was effective in increasing nurses' knowledge and confidence in ACP, and all the nurses acknowledged that facilitating ACP was the nurses' job. However, changing and sustaining how they practice (e.g., documenting ACP, guiding patients in AD completion) requires more than education. Further training and the provision of practical tools (e.g., standard work to reinforce the documentation, guide for AD completion) are needed.

# LEADERSHIP STRATEGIES IN THE HEALTHCARE ARENA

## Knowing What Matters: Rethinking Continuity of Nursing Care

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**Purpose:** The purpose of this qualitative descriptive study was to identify and describe the key components of informational continuity of nursing care for pediatric patients in ICU and procedural settings and to elicit suggestions for enhanced communication of these components, from the perspective of both parents and nurses.

**Background:** The field of pediatrics has long embraced the patient and family-centered care model, but full actualization of this model remains elusive. Parents report varying levels of satisfaction and difficulty receiving consistent care from providers familiar with their child. Efforts to enhance continuity of nursing care have focused on creation of a primary nursing model, but this model may not be feasible due to staffing patterns, learning needs, and nursing preference. There is, therefore, a need to identify alternative mechanisms for enhancing nursing continuity, with a focus on improving communication of the information parents consider most important to the care of their child.

**Methods:** Focus groups with nurses (n=38) and semi-structured interviews with parents (n=11) were conducted over the course of 8 months. Nurses were recruited from two pediatric ICUs and a cardiac catheterization lab, all at the same institution. Parents were recruited from the same care settings and the institution's Family Advisory Council. Focus group and interview transcripts were analyzed using successive rounds of coding to elicit themes, and group discussion among the research team helped to challenge and refine the emerging conceptualization of informational continuity of nursing care in these settings.

**Results:** Participants generated broad categories of information that they consider important for informational continuity but currently difficult to access (nurses) or to ensure has been communicated (parents). Parents endorsed the creation of a mechanism for more explicit sharing of the information they deem critical for care providers to know, but worried that it would be overlooked by those providers. Nurses expressed concerns about the added time required to solicit and incorporate such information into care delivery, usefulness of the information in the context of an ICU admission, and underlying tensions with shifting nurse/parent power dynamics.

**Implications:** Efforts to enhance continuity of nursing care via improved communication of the information considered most important to parents must simultaneously attend to the content of the information – what parents want to share and what nurses want to know – and the processes by which that information is delivered and received. Integrating the receipt of additional information into already-overloaded nursing work creates additional burdens and may contribute to an increased perception of a power imbalance wherein parents are dictating, rather than partnering in, their child's care.

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Funding: AHRQ-5T32HS00063-21 and Boston Children's Hospital Program for Patient Safety and Quality Research Grant.

# LEADERSHIP STRATEGIES IN THE HEALTHCARE ARENA

## Leading Change and Keeping Pace with the Evolution of Payment Models

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**Purpose:** The purpose of this project was to develop structures and processes required for improvement in patient outcomes. The purpose of this presentation is to share the novel consultation model developed to assist frontline managers and staff in moving their nurse sensitive indicators into target performance range to qualify for associate payment incentives.

**Background:** The Medicare payment policy has evolved significantly over the past six years with a movement toward value-based payment. This movement has transcended the cost-and charge-reimbursement approach of the 1960s, the prospective payment system of the 1980s, and now to the recent enactment of the Affordable Care Act of 2010. System payments are now based on the quality of care they provide. Medicare provides bonuses to hospitals and other providers that achieve top-level scores on payment outcomes and care experiences. As of 2015, 1.5 % of base payments for more than 3,500 hospitals is withheld and used to reward top-performing hospitals for the quality of their care and their patients' experiences of care. This amount increases to 2.0% by 2017. Another CMS (Centers for Medicaid and Medicare Services) initiative penalizes for specific indicators of poor performance such as 30-day readmission for Medicare beneficiaries. While others, such as the HAC (Hospital Acquired Conditions) program, penalize hospitals with higher-than-expected rates of hospital-acquired conditions. Our organization was selected to participate in a CMS sponsored, incentive program aimed at showing significant improvement on 11 quality of care and coordination of care metrics. Incentive monies of 150 million dollars was made available for hospitals meeting pre-established benchmarks.

**Methods:** A central consultation team was created. The team determined which units would receive assistance based on historical performance data measured using a Likert-scale instrument. This tool selected out those units who had the poorest accumulative performance in outcome scores across all nurse-sensitive indicators. A set of pre-determined, evidenced-based interventions were developed and applied based on an assessment of the unit by the consultant and input and agreement from the nurse manager and hospital level chief nursing officer. A continuous monitoring process occurred at 3 and 6 month-intervals.

**Outcome:** Of the original 16 consultation units, 11 were successfully in meeting improvement targets and were transitioned to a watch-list by the three-month mark. This clinical innovation has been successful in assisting frontline leaders in articulating expectations for performance and eliminating confusion among staff at the point of care. Further, the process supports rapid cycle change, timely detection of errors in the care processes, and has proven to be effective in further eliminating patient harm.

**Implications to Practice:** As we accelerate away from fee-for service payment with no link to quality, nursing is in a strategic position to make significant impacts on the hospitals bottom line. Never before has nursing care been tied so closely to the financial sustainability of an organization. Given this connection, it is imperative we understanding the evolution of the payment system, the necessity of deliver the highest quality care in a reliable fashion, at the right time, and in the right venue.

# LEADERSHIP STRATEGIES IN THE HEALTHCARE ARENA

## Development and Testing of Delegation Guidelines for Nursing Home Directors of Nursing

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**Purpose/Aims:** The purpose of this study was to develop and test a resource for nursing home directors of nursing (DON) to use in their roles leading and managing professional nursing practice, with specific focus on delegation.

**Rationale/Background:** Nurse delegation is an essential element of the team nursing approach used in nursing homes, with registered nurses relying on licensed practical/vocational nurses and unlicensed nursing personnel to enact the RN's care plan in a manner consistent with the RN's intent. Nursing home DONs, as the highest-ranking nurse leader involved with day-to-day operations, are positioned to ensure delegation practices are consistent with state agency/boards of nursing (SBON) regulations for delegation. Yet, reported gaps in knowledge of delegation and supervision of delegated practices, coupled with DONs' limited formal training in leading and managing nursing services, suggests the need for resources to support DONs in carrying out their critical leadership position.

**Conceptual Framework:** Donabedian's Structure-Process-Outcomes model (1980) serves as the conceptual framework for this study. The guidelines will serve as a resource for DONs to effectively operationalize SBON delegation regulations (Process), and, in turn, influence the environment (Structure) (i.e., staffing levels/mix/expertise, training) and professional nursing practices that result in high quality and safe care (Outcomes).

**Methods:** We used a cross-sectional, mixed-methods (qualitative/quantitative) approach for this study. Initial guideline content was developed through: (1) a review of professional nursing standards documents and in-depth literature review; and (2) data collected from semi-structured interviews (n=29) with SBON representatives (10) and DONs and other nursing home leaders (19). We conducted two sequential phases of pilot testing (n=71), beginning with semi-structured interviews with 10 DONs and nursing home leaders. Next, SBON representatives (19) and current/previous DONs and nursing home leaders (42) provided ratings for the clarity, importance, relevance, and usability of content on each page using a 5-point scale (1-5, 5=highest). Percentages were calculated for lower ratings (1 or 2), middle (3) and higher ratings (4 or 5) for each individual item on each page; based on these percentages and respondents' comments, revisions were made to content, as determined appropriate.

**Results:** The guidelines included three primary modules: (1) locating/interpreting SBON delegation regulations; (2) aligning organizational policies/procedures for nursing practice with SBON delegation regulations; and (3) applying SBON delegation regulations to improve quality and safety. The percentage of high ratings (4 or 5) across all pages suggested overall high clarity (86%), importance (90%), relevance (91%), and usability (84%). However, combined with findings from interviews and survey comments, usability of the guidelines was identified as a potential challenge based on the reported complexities of the regulations and DON time constraints/competing role demands and overall role preparedness.

**Implications for Translations to Practice/Further Research:** The findings provide a basis for further research to develop evidence-based resources for nursing home DON education/training in nursing delegation and team nursing. Opportunities to enhance the usability of the delegation guidelines should be further explored. The long term goal of this research is to advance the translation of delegation regulations into safe and effective nursing practice in nursing homes.

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**Funding:** Provided by the National Council of State Boards of Nursing Center for Regulatory Excellence #R80005.

# LEADERSHIP STRATEGIES IN THE HEALTHCARE ARENA

## The Effects of a Nurse Leader Stress Mastery Program

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**Purposes/Aims:** The purpose of the study was to improve nurse leaders' stress resistance, stress coping skills, and stress management.

**Rationale/Conceptual Basis/Background:** Eisenhower Medical Center includes a not-for-profit 463-bed hospital and a number of outpatient settings. Nurse leaders experience a lot of daily pressure from physicians, nursing staff, management, as well as patients and families. In the complex busy health care environment, leaders report frequent interruptions that require multitasking. Multitasking plus the internal pressure for high personal performance and organizational objective of highest quality care creates high stress levels for nursing leaders. Since nurse leaders are pivotal to the daily care of EMC patients, stress prevention and stress management are keys to excellent patient care.

A number of publications reported perceived stress, sources of stress, and stress management for health care professionals; some included nursing leadership. In addition to the individual physiologic effects, stress affects job performance with poor communication and decision-making skills, poor staff relationships, and medication errors. Sources of work stress include work tasks, performance outcomes, people and resources. Most of the stress intervention studies focused on stress management vs. stress prevention.

**Methods:** A Magnet Nursing Leadership Council survey identified a need for a stress management program. The Council agreed that a research study of stress prevention would be in order. The Council chairperson assumed the role of the principal investigator and engaged a local physician to offer his Stress Mastery Program for nursing leaders. The group decided the best format and timing for the Program would be two 8-hour sessions delivered through a live and interactive seminar.

Following EMC Institutional Review Board (IRB) approval, the Program was offered to all nurse leaders. The study convenience sample was recruited through an email. There were no exclusion criteria and no personal identifiers were collected. Twenty-three of the 30 Program registrants agreed to participate in the study.

The Research study had a single group design and the Stress Mastery intervention included principles, relaxation exercises, and concentration techniques. Four research hypotheses guided the study. Nursing leaders who participate in the Stress Mastery Program will: 1) report improved stress management; 2) report less perceived stress; 3) report a higher level of happiness and peace; and 4) exhibit lower physiological stress measured through the Meridian DPA (Digital Pulsewave Analyzer).

**Results:** To date, study participants have completed three stress assessments: at baseline before the intervention, one week and one month after the intervention. Self-reported stress levels have decreased by ~35% and general happiness levels have increased by ~9%. Half the participants will receive a refresher course in mid-October, 2016 and the final two stress assessments will be analyzed by January 1, 2017.

**Implications for Translation to Practice/Further Research:** If the final analysis supports the hypotheses of decreased stress and improved general happiness of leaders, a Stress Mastery program will be implemented for all staff with the assessment of additional patient care outcome measures. With improved stress mastery, all staff should exhibit improved compassionate colleague and patient communication with greater staff and patient satisfaction.

**Abstracts of Podium Presentations**

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**METHODOLOGICAL ISSUES**

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**METHODS IN EXAMINING MEDIATOR MODELS  
IN HEALTHCARE SYSTEMS RESEARCH**

*Kara A. Snyder*

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**MEASURING DIRECT NURSING COST PER PATIENT:  
A METHODOLOGICAL STUDY**

*Peggy A. Jenkins*

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**REVEALING THE INVISIBLE COLLEGE  
OF EVIDENCE-BASED PRACTICE IN NURSING**

*Kathy J. Fatkin, Mary Anne Hales Reynolds*

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**THE PROFESSIONAL GOVERNANCE SCALE:  
EXAMINING CONTENT VALIDITY**

*Joyce A. Verran, Joanne T. Clavelle, Tim Porter O'Grady, Marla Weston*



## METHODOLOGICAL ISSUES

### Methods in Examining Mediator Models in Healthcare Systems Research

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**Purpose:** The purpose of this study is to comparing findings between path analysis with regression and structural equation modeling (SEM) of three different randomly selected sample sizes testing mediator model of control over nursing practice (CONP) in the relationship between perceived environmental uncertainty (PEU) and job satisfaction (JS) using an existing database of survey respondents in acute care nursing facilities.

**Rationale/Conceptual Basis:** Multilevel modeling is often used in healthcare systems research to study groups as subjects, which often results in smaller sample sizes. Structural equation modeling (SEM) is considered by many as the method of choice for theory testing, however, a significant sample size is required for adequate analysis. The application of SEM may be limited in healthcare systems research.

**Methods:** Three samples were randomly selected from the database (n=663) to create 3 samples: small (n=60), medium (n=197), and large (n=393) for comparison of statistical methods. Nesting effects of the variables at the organization and nursing unit levels were examined. Reliability analyses were conducted for all variables in the model. Both path analysis and structural equation modeling were applied to the three samples for comparison of results.

**Results:** In all three sample sizes with path analysis there was a partial mediation effect of PEU and JS by CONP, though the direct relationship between PEU and JS persisted. There was goodness of fit indices for the medium and large sample groups, though inadequate fit for the small sample size.

**Implications:** While SEM is considered as a gold standard in theory testing, path analysis remains a viable option in healthcare systems research when sample sizes are smaller.

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# METHODOLOGICAL ISSUES

## Measuring Direct Nursing Cost per Patient: A Methodological Study

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**Purpose/Aims:** To explore the variability of nursing cost for patients with similar DRGs and to investigate the relationship among patient/nurse characteristics and nursing cost using microeconomic analysis.

**Rationale/Conceptual Basis/Background:** The emphasis on cost in healthcare is intense, and for good reason. Growth in healthcare is outpacing the Consumer Price Index measuring overall inflation in the U. S. In 2014, total healthcare spending reached a staggering \$3.0 trillion, making the healthcare portion of our GDP 50% higher than the next high spend country (CMS, 2016; CHCF, 2016, Patton, 2015). Although the United States healthcare spending far exceeds other high spend countries, the outcomes of care are often worse (Mahon, 2015). Therefore, it is imperative for nursing to quantify the value of nursing in a cost contained environment. Traditionally, this has not been possible as nursing cost is embedded in room and board charge, so nursing resources used per patient are unknown. Microeconomic analysis (Cameron & Trivedi, 2010) provides transparency of nursing cost at the patient level (i.e. nursing cost per patient shift, day, or acute care episode), expands the current view of nursing cost, and facilitates the much needed generation of nursing cost science.

**Methods:** Two years of patient and nurse level data from three large electronic data sources (medical management system, Human Resources, patient assignment software) were extracted for one medical/surgical unit at a university hospital with Magnet designation. The data were cleansed, organized, merged, and aggregated, resulting in the calculation of direct nursing cost per patient by shift, day, and acute care episode variables. Forty-nine variables were collected or constructed from the data sets. Sample included 3111 patients and 150 nurses. Data analysis was completed with Stata V. 12 software and included creation of Do-files for documentation and replicability. Nurse and patient characteristic variables were analyzed with descriptive statistics. Logarithmic transformation was used to normalize positively skewed data. Variability in direct nursing cost for patients with similar DRGs was explored using ANOVA. Relationships among nurse characteristics, patient characteristics, and nursing cost were investigated using ordinary least squares regression analysis.

**Results:** Findings indicate that nursing cost is progressively higher for patients with complications ( $F(3,3107) = 340.63, p < .001 (\eta^2 = .247)$ ). Large variabilities in nursing cost per day (i.e. DRG 192, range \$4.87-\$322.66) and acute care episode (range \$54-\$1570) were found. Regression model was significant ( $F(1,3088) = 4173.25, p < .001, R^2 = .8620$ ) showing nurse years of experience explains 98% of cost variance lending justification for the aggregation model (Jenkins & Welton, 2014).

**Implications:** Measuring nursing cost by patient is possible today using technology and data linking nurse to patient, which opens a lens nurse scientists could not view previously. The methodology introduced in the study enables nurse leaders to articulate nursing cost in this era of intense healthcare cost scrutiny. In future studies, nursing cost methodology can be replicated and linked to nursing outcomes to better understand the value of nursing.

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## METHODOLOGICAL ISSUES

### Revealing the Invisible College of Evidence-Based Practice in Nursing

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**Purpose/Aims:** The purpose of this study was to investigate the use of evidence-based practice (EBP) through an examination of nurse-authored hospital policy and procedure documents by using citation analysis. This study asked the following questions: 1. What are the information sources nurses cite when they create or update nursing policy and procedure documents in the hospital? 2. Does the bibliographic data identify the presence of an invisible college within the practice of nursing policy writing?

**Background:** Evidence-based practice (EBP) provides a framework for finding answers to clinical questions using current literature. It is expected that hospital nurses utilize current research-based evidence to guide patient care. Often, this evidence is presented in the form of policy and procedure documents.

**Methods:** This bibliometric study used citation analysis of nursing policy and procedure documents from full member National Network of Libraries of Medicine hospitals in the intermountain west region of the US. Ten hospitals voluntarily shared their nursing policy and procedure documents. 1,581 policy and procedure documents were examined for their citations.

**Results:** Of the 1, 581 documents initially examined, 1,172 (74%) had no citations. The 409 documents with citations yielded 1,285 individual citations. Citation analysis was used to evaluate types of resources used. In addition, a map was created to identify connections between hospitals and cited authors.

**Implications:** By identifying the most frequently cited resources and the connections between hospitals a previously invisible college of knowledge sharing was identified.

# METHODOLOGICAL ISSUES

## The Professional Governance Scale: Examining Content Validity

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**Purposes:** The purpose of this presentation is to present the results of extensive content validity testing of a new instrument, The Professional Governance Scale (PGS). Content validity assessment is critical for instrument development but is particularly important when a complex construct is being measured.

**Conceptual Basis:** Professional Governance is a recently developed construct with four attributes or concepts and related characteristics for each. The construct is defined as: “*The professional obligation, decision-making, accountability and collateral relationships of a profession that are foundational to autonomous practice and the achievement of exemplary empirical outcomes*”. The conceptual perspective for the instrument was developed through integrated literature reviews of 8 related concepts. The methods and results of this development have been described in Clavelle, Porter-O’Grady, Weston and Verran (2016).

**Methods:** From the results of the integrated reviews, 99 items were developed by the research team. These items were submitted to 14 national experts for validation of relevancy to the construct, adherence to an attribute and clarity. Two groups of experts were selected based upon the research perspective that two types of expertise were needed for the study. The first group of seven experts had experience with instrument development and measurement (ID group). The second group had expertise in administrative practice at the executive level (AP group). The content validity questionnaire was sent to all 14 experts with the 99 items in random order. Decisions on item elimination were based on total Relevancy scores below 86%. Attribute Assignment and Clarity scores of 72% or less were utilized to examine retained items for potential revision. All item revision was performed considering comments of the experts and the expertise of the research team.

**Results:** All questionnaires were returned with less than 3% missing data. 25 items were eliminated based upon the Relevancy score (N=18) and comments by experts that items were duplicative of others (N=7). Twenty-six items were rewritten and 2 new items were added. Sixteen items had discrepant scores between the two groups of experts. These items were individually assessed by the Researchers and 14 were eliminated. Two others were revised based on comments. The Relevancy Mean Individual Content Validity Index (Mean I-CVI) for the 99 items was 92%. (ID Group=92%; AD Group=93%). After revisions the Relevancy Mean I-CVI for the 75 remaining items was 91% (ID group 92%; AD Group 90%). All Attributes and their characteristics were adequately covered after decisions of item retention and revisions due to the Content Validity results.

**Implications for Research and Practice:** The final PGS will be both valuable for research and practice. However, further research is needed to assess reliability and validity of the scale at both the individual and workgroup level. Currently an extensive study to assess individual level psychometrics is in development with sites confirmed for data collection. When final psychometric studies are completed, the scale will be able to be used by researchers and nurse leaders to measure attributes of professional governance within their organizations, and to assess intentional transition from Shared to Professional governance.

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Reference:

Clavelle J, Porter O’Grady, T., Weston, M., & Verran, J. (2016) Evolution of structural empowerment: Moving from shared to professional governance. *Journal of Nursing Administration*. 46(6), 308-312.



**Abstracts of Podium Presentations**

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**MILITARY AND VETERANS HEALTH CARE**

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IDENTIFYING SOCIAL SUPPORT: APPLICATION  
OF THE D-CEGRM DURING HOSPITAL DISCHARGE

*Andrea S. Wallace, Nicole Bohr, Erica Davisson*

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DISCOVERING THE IMPACT OF LEADERSHIP  
ON MILITARY ENROUTE CARE NURSING

*Angela Simmons, Felecia Rivers, Sandi Gordon, Linda Yoder, Jennifer J. Hatzfeld*

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NURSING'S ROLES IN THE DISASTER CYCLE

*Patricia Frohock Hanes*

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A QUALITATIVE STUDY ON EFFECTIVE  
INTERNATIONAL MEDICAL DISASTER RELIEF TEAMS

*Nicolette Broby, Jane H. Lassetter, Mary Williams, Blaine Winters*

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COMMUNITY-BASED COMPARATIVE EFFECTIVENESS  
INTERVENTIONS FOR VETERAN SUICIDE

*Michael J. Rice, Nora Mund, Eleni Padden, Cheryl A. Krause-Parello*

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WOMEN AND WAR: A GRADUATE CURRICULUM  
COLLABORATION OF NURSING & HUMANITIES

*Mona Pearl Treyball, Jean Scandlyn*

# MILITARY AND VETERANS' HEALTH CARE

## Identifying Social Support: Application of the D-CEGRM during Hospital Discharge

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**Purpose:** The purpose of this study was to apply a novel assessment of social support, the Diabetes Colored Eco-Genetic Relationship Map (D-CEGRM), in a population of hospitalized patients on the day of discharge, testing for its ability to 1) contribute to clinician discrimination of social support (i.e., “adequate” vs “inadequate”); and 2) explore associations with patient characteristics (demographics, health literacy), and validated measures of discharge readiness (patient- and nurse-assessed), and post-discharge coping.

**Background:** It is commonly recognized that lack of social resources supportive of self-management (e.g., for transportation, errands, meals, personal care) places patients at higher risk for poor health outcomes. However, assessment of patients’ personal resources is not a standardized process, and may go unaddressed during the hospital discharge process. Therefore, there’s a need to find efficient methods for conducting assessments of patients’ social support systems.

**Methods:** A prospective survey was used to examine experiences of Veterans (n=70) returning to rural homes after hospitalization. Structured clinical notes made from the D-CEGRM social support interview on the day of discharge were coded for evidence of “adequate” or “inadequate” support for self-management post-discharge. The resulting patient support categories (“adequate” vs “inadequate”) were then explored for differences in patient characteristics, patient- and nurse-reported discharge readiness (Pt- and RN-Readiness for Hospital Discharge Scale administered to patients and nurses assigned to their care on the day of discharge), and patient-reported coping difficulties post-discharge (Post-Discharge Coping Difficulties Scale administered to patients two weeks after discharge).

**Results:** Patients coded as having evidence of “adequate” support were significantly ( $p<.001$ ) different than those with evidence of “inadequate” support at home. Patients who were never married (100%), were separated or divorced (87%), living alone (78%), did not complete high school (40%), and reported working 30 hours or more per week (70%) were more likely to be categorized as having “inadequate” support.

Patients with adequate social support reported higher mean readiness for hospital discharge ratings for the total score (193.06 vs 181.53,  $p=.008$ ), and the expected support subscale (38.94 vs 32.65,  $p<.001$ ). Likewise, patients’ bedside nurses reported higher mean readiness ratings among those with adequate support when compared to those with inadequate support for RN-RHDS total score (201.09 vs 184.36,  $p=.001$ ), expected support subscale (39.27 vs 32.36,  $p<.001$ ), coping subscale (28.06 vs 24.27,  $p=.002$ ), and personal status (62.11 vs 58.21,  $p=.046$ ). While not statistically significant, trends can be noted for patients’ reported coping difficulties after discharge, with those categorized as having adequate support reporting fewer coping difficulties vs those with inadequate support (14.103 vs 19.880,  $p=.208$ ).

**Implications:** Clinician-created categories from notes generated from the D-CEGRM interview identified patients with differing personal characteristics, and patient- and nurse-reported ratings of discharge readiness. While our findings largely confirm others who have found that provider-assessments of discharge readiness and risk may be used to identify those at risk for poor health outcomes, these may be a first step in creating an efficient structure for uncovering nuanced social information during clinical encounters in a way that more directly guides anticipatory planning and interventions.

**Funding:** Provided by the Department of Veterans Affairs, Veterans Health Administration, Office of Rural Health, Veterans Rural Health Resource Center-Central Region.

# MILITARY AND VETERANS' HEALTH CARE

## Discovering the Impact of Leadership on Military Enroute Care Nursing

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**Introduction/Background:** Nursing in the deployed environment has been found to be personally challenging and extremely demanding, which often leads to emotional exhaustion. Leaders play a critical role in managing different situations in the environment that effect the levels of stress nurses undergo during this time. For the Military enroute care nurses, leadership support before, during and after deployments played a key role in their behavioral health symptoms and reintegration.

**Purpose of the Study:** The overall purpose of this study was to examine and capture both the quantitative and qualitative aspects of military nurses focusing specifically on potential behavioral health symptoms and perception of their symptoms and the process of seeking assistance. This presentation will specifically focus on the "leadership matters" theme that emerged when exploring their perceptions of behavioral health.

**Methods:** This presentation is part of a larger exploratory, mixed methods study of Army, Air Force, and Navy nurses who provided enroute care while deployed to Iraq or Afghanistan, and their perceptions of mental health after returning from deployment. Roy's Adaptation Model was used to guide the quantitative portion of the study using the following five instruments: a demographic and personal military characteristics instrument, the Generalized Anxiety Disorder-7 Scale (GAD-7), the Centers for Epidemiologic Studies Depression Scale (CES-D), the Post-Traumatic Stress Checklist- Military (PCL-M), and the Post-Deployment Readjustment Inventory (PDR). Existential phenomenology, underpinned by the philosophical works of Maurice Merleau-Ponty, was used to support the qualitative portion of the study.

**Results:** Complete surveys were received from 119 nurses (37 Army; 65 AF; 17 Navy), and 22 in-depth interviews were completed (11 Army; 9 AF; 2 Navy). A majority of survey respondents (n=63, 53%) reported feeling the need to talk with someone in Behavioral Health after a deployment, yet only 33% of respondents (n=39) actually sought behavioral health support. Most survey respondents reported no communication from their leadership while deployed (n=64, 54%) and unrealistic expectations upon return. Interviewees provided examples of both good and bad command support before, during, and after their deployment that contributed to behavioral health.

**Implications/Conclusion:** Specific actions can be taken by leaders before, during, and after deployment that contribute to the behavioral health of nurses in stressful and dynamic environments. Findings highlight the important role of leaders in managing the team ensuring nurses feel supported during deployment and upon return. Nursing leaders at all levels must be informed of the influence of their actions and the work environment on the mental health of these nurses. Enroute care nurses rely upon the leaders to help them integrate into the team during a deployment and upon return. These nurses recognized that they were not the same when they returned and leadership support or lack thereof influenced their response to this experience.

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**Funding:** This study was funded by the TriService Nursing Research Program (# HT9404-13-1-TS06 (N13-PO6).

**Military Disclaimer:** The views expressed are those of the presenter, and do not reflect the official policy or position of the U.S. Government, the Department of Defense or the Department of the Air Force.



# MILITARY AND VETERANS' HEALTH CARE

## Nursing's Roles in the Disaster Cycle

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**Background:** Given the increasing number of disasters, both natural and human caused, and the corresponding increase in regulations and funding, there is a demonstrated need for expanding involvement in, and research and understanding of, nursing's roles in disasters.

**Purpose:** To understand the disaster cycle and to articulate the roles of nursing and nurses in disasters.

**Conceptual Frameworks:** Pender's health promotion model, health belief model.

**Methods:** Through experiential learning, interviews with experts, and an extensive literature search, information regarding the multifaceted roles of nurses during the phases of disasters in the context of the position of nursing organizations and governmental systems was analyzed and synthesized.

**Conclusion/Implications:** Major nursing organizations have articulated disaster nursing competencies and support disaster nursing education across all levels. Governmental mandates related to disasters affect all areas of healthcare. Nurses need to understand their roles in all phases of the disaster cycle as well as the importance of volunteerism in supporting national, regional, and local disaster efforts. Personal preparedness is a crucial part of nurses' overall ability to respond to disasters. Nursing, as a discipline, needs to promote partnerships between education, practice, and communities in learning about and preparing for disasters.

# MILITARY AND VETERANS' HEALTH CARE

## A Qualitative Study on Effective International Medical Disaster Relief Teams

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**Purpose/Aims:** This qualitative descriptive study explored the fundamental elements and processes required to form a high quality international medical disaster relief team.

**Rationale/Background:** Natural and man-made disasters have increased in recent years, demanding timely and helpful responses from healthcare providers. Building a competent medical disaster relief team is a complex process, especially on an international level. In reality, some well-meaning groups react hastily to disasters without understanding what an effective response requires, and in their effort to help, they can actually contribute to the chaos.

**Methods:** A qualitative descriptive design was used to gather data, including 12 semi-structured interviews of key personnel and on-site observations of 5 well-known international medical response organizations. Interviews were transcribed verbatim. Content analysis was used to identify patterns in the narrative data. Patterns were then discussed in team meetings and coded to identify categories and themes.

**Results:** Effective international medical relief teams have similar principles and guidelines directing their work. They value the character, resourcefulness, and flexibility of their volunteers as much as they value their skills. Initially, these organizations conduct needs assessments to provide their resources most effectively and efficiently and avoid waste and duplication of efforts. They also adhere to internationally recognized and respected standards, often providing treatment above the affected area's minimum standard. Effective groups work closely with local and national leadership. They are resourceful, but also cautious not to stretch themselves beyond their capacity to serve safely and effectively. Successful organizations are mindful of culture and family considerations and work in harmony with, rather than against, the community's customs, religions and traditions.

**Implication for Translation to Practice/Further Research:** International disaster relief teams should collaborate with flexible, resourceful, and experienced volunteers. To provide help where it is most needed, they should cooperate with the Ministry of Health, attend collaborative meetings, and conduct thorough needs assessments. While striving to meet internationally recognized standards of care, they should consider local customs and religions. Lastly, medical disaster relief teams should offer to do only what they have the capacity to accomplish. By following the key guidelines and principles of successful international medical disaster relief organizations, organizations who wish to develop or improve their medical disaster relief teams can do so. Future research should focus on important considerations when creating the ideal personnel mix for effective disaster relief teams.

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(2) Graduate Research Fellowship Award, Brigham Young University, Office of Graduate Studies.

# MILITARY AND VETERANS' HEALTH CARE

## Community-Based Comparative Effectiveness Interventions for Veteran Suicide

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**Purposes/Aims:** The purpose of the first phase of this project was to use community engagement to examine protective factors on a sensitive topic: Veteran Suicide. Community engagement was used in an effort to address those populations not covered by the VA models. The goal was to engage veterans, friends and veteran family members, and veteran service providers, to identify protective factors against veteran suicide which might lead to a comparative effectiveness research (CER) informing researchers, clinicians, and policymakers.

**Rationale/Background:** Military veterans have a twenty-one percent higher risk for suicide than individuals in the at a disproportionately greater risk than the general population. This disproportionate risk must be addressed as a significant health element but may address only the most severe cases. Leading research primarily focuses on downstream assessments, largely investigating suicide risk factors. There is limited research on upstream or protective factors against veteran suicide. Existing research on protective factors is conducted predominantly by academics with limited or no military service experience and a relatively narrow understanding of military culture. Thus, there is a need to bridge between conventional research approaches and the veteran community. Currently, there is no known structure allowing veterans, their friends and families, and their service providers to collaborate and engage in defining, studying and implementing protective factors for veteran suicide prevention.

**Method-Community Engagement:** The development of enduring relationships with veterans, friends and family members of veterans, resource groups for family members, local and national veteran organizations and grassroots veteran support groups was a priority for Tier 1 of the project. In order to facilitate diverse, comprehensive community engagement, three stakeholder groups were established. A veteran, a veterans' friends and family, and veteran service provider groups were formed. In months 3-5 of our project, each group met individually once per month. In months 6-8, the three groups were combined in monthly Executive Partnership Team meetings. In month 9, the Veterans' Suicide Protection Advisory Group (VSPAG) was selected.

**Outcomes:** Tier 1 results indicated 1) the current lack of empirical data regarding protective factors against veteran suicide, 2) the need to further investigate these factors via a comparative effectiveness research question, and 3) the stakeholders desire to collaborate with members of the academic project team. Stakeholder ideas for interventions included: veteran to veteran assistance in the process of reintegration to civilian life, consistent veteran to veteran contact and social connection, progressive changes in Veterans of Foreign Wars operations, family support, yoga, therapeutic expression in the arts, equine therapy, access to highly trained service dogs, medical marijuana, the effects of educational structure, educational counseling services, and traditional medical services.

**Conclusions:** Out of the approximately 70 Tier 1 stakeholders, ten permanent community stakeholders make up the VSPAG, and will facilitate Tier 2 of our project, vitally including the further development of community partnerships as well as the refinement of a comparative effectiveness research question aimed at evaluating protective factors against veteran suicide.

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**Funding:** This project was supported in full by Patient-Centered Outcomes Research Initiative Pipeline to Proposal Grant # 3406820.

# MILITARY AND VETERANS' HEALTH CARE

## Women and War: A Graduate Curriculum Collaboration of Nursing & Humanities

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**Purpose:** This curriculum portrays the various experiences of women in relationship to war from both nursing and humanities perspectives across time. It explores women's roles during war, gender-specific policies, reproductive, urogenital and psychological health during deployments, and military sexual trauma. The program also considers the needs of families, and reintegration to community, and selected veteran issues.

**Background:** Women have always been involved in war and the military, but only recently have their contributions been widely recognized. Today, the US military is shrinking, but the number of women serving is increasing, both civilian and military. And women's health care needs are now a specialization in military and veteran health care.

**Best Practice/Curriculum:** To determine the need for this curriculum ten focus groups, interviews, and brown bag sessions were conducted with key personnel in Colorado and Washington DC. Focus groups and an Interdisciplinary Exchange sponsored by the College of Liberal Arts and Sciences, University of Colorado identified women as a population of interest. Out of this exchange the authors developed this program for an **inter-professional audience** encompassing all health care specialties and liberal arts graduate students. This program introduces students to the history of service by women in war internationally and in the US, with content covering the multiple issues women face on the battlefield and the home-front. Many of the topics apply not only to servicewomen, women veterans, and civilian women who serve in war, but also to most women as considerations for care.

**Outcomes:** An online course was offered for the first time Summer 2016. Students from five states and several disciplines, including six Nexus students from other institutions attended. Faculty was interdisciplinary, and included the Military Director of the Defense Advisory Committee on Women in the Service (DACOWITS) as a guest. Students engaged in synchronous/asynchronous discussions and produced papers and projects demonstrating innovations applicable to their practice. Students rated the class very highly on all rating criteria. Qualitative comments included: *"Provided the most wonderful resources- I sent many of the links to my daughter who is a new military wife... It has helped me understand her world, her husband and military life and how I might be able to help veterans and their families as a mental health practitioner. I've learned a lot about them, know where to look for more information and how to advocate for their needs."* And *"The units are very well designed. Everything is clear, easy to locate, interesting and stimulating for discussion."*

**Conclusions:** This program provides core content for caring for women engaged in wartime service, including visible and invisible consequences, effects on health, the psyche and culture of war, and strategies for supporting families. Systems specific issues relate to access to care, benefits based on disability, and federal policies and regulations. Future recommendations are for interprofessional offerings that prepare nurses and providers to care and become advocates for women, families, and communities affected by war.



## Abstracts of Podium Presentations

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### **NURSE SENSITIVE INDICATORS: IMPROVING PATIENT OUTCOMES**

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#### **REDUCING SURGERY SCHEDULING ERRORS**

*Donna S. Watson, Cynthia F. Corbett, Gail Oneal, Kenn B. Daratha*

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#### **A SIX SIGMA MUTIDISCIPLINARY APPROACH TO MEDICATION SAFETY**

*Patricia Frohock Hanes, Mai Chi Hong, Tracey Norton,  
Michelle Smith, Carol Stickley*

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#### **EBP MENTORS FOR COMPLIANCE WITH CLABSI PREVENTION**

*Susan J. Wallace Raph*

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#### **IMPROVEMENT ROUNDS: TEAM PROBLEM SOLVING TO SUPPORT A CULTURE OF SAFETY**

*Andrea Bottorff, Anthony Mulholland, Kimberly Paiement*

# NURSE SENSITIVE INDICATORS: IMPROVING PATIENT OUTCOMES

## Reducing Surgery Scheduling Errors

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**Purposes/Aims:** The purpose of this study was to assess whether bundled team training interventions for surgeons and multidisciplinary staff could effectively improve the accuracy of surgery scheduling, therefore minimizing scheduling factors that may contribute to occurrence of wrong site surgery (WSS). Aims 1) Describe and compare SSE incidence rate and type before and after implementation of bundled team training interventions for surgeons and multidisciplinary staff. 2) Evaluate the trend of SSE before and after implementation of bundled team training interventions.

**Rationale/Conceptual Basis/Background:** Surgery scheduling errors (SSEs) are a recognized risk factor shown to contribute to WSS. Yet, research evidence related to SSEs is minimal. It is estimated 40 WSSs occur weekly in the United States. Position statements, guidelines, and checklists have failed to decrease the incidence of WSS. Moreover, The Joint Commission has reported 39% of the WSSs examined began with a SSE. The incidence of SSEs range between 0.41% to 5.3%; however, research on preventative measures is limited.

**Methods:** This quasi-experimental observational study explored SSE type and implemented bundled team training interventions intended to reduce SSEs. SSE types were captured February 16 through December 18, 2015 from a Regional Surgery Scheduling Department, in the Puget Sound region of the Pacific Northwest. An interrupted time series design was implemented; each pre- and post-intervention segment consisted of 16 weekly data points. The bundled team training interventions included disclosure of pre-intervention scheduling errors, a scheduling verification checklist, updated surgery scheduling policy and procedure, and surgery scheduling toolkit.

**Results:** Comparing pre- and post-intervention segments, improvements in SSEs were observed, with a decreased surgery SSE rate from 0.51% to 0.13% ( $p < 0.001$ ). Reductions were observed in all SSE types. The segmented linear trend demonstrated the rate of SSE decreased over time ( $p < 0.001$ ). Following the introduction of bundled team training interventions, a slight decrease in the rate of SSE was observed ( $-0.002$ ), however not statistically significant ( $p = 0.72$ ). In the post-intervention segment no significant change in the linear trend was observed ( $p = 0.11$ ).

**Conclusion:** In this study the numbers and rate of SSEs decreased. The reduction in SSE is of clinical importance, demonstrating that SSEs can be minimized. The surgeon's office team and a surgery scheduling department serve as the first line of defense to protect against inaccurate patient information that may lead to a WSS.

**Implications:** Although rare, SSEs are high risk with regard to potential patient safety implications for WSS. This study confirms the need for additional research targeted at understanding why SSE occur at the time of scheduling; associated economic cost for correcting an error; exploration and definition of best practices; tool development; and opportunities for patient involvement from the inception of the surgery scheduling decision.

# NURSE SENSITIVE INDICATORS: IMPROVING PATIENT OUTCOMES

## A Six Sigma Multidisciplinary Approach to Medication Safety

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**Background:** Bedside medication verification (BMV) is a required multistep process where medication and patient barcodes are scanned as a safety check, recording, and billing/inventory purposes. BMV scanning rates at a hospital emergency department (ED) were the lowest in the hospital system, placing patients at risk and at great cost to the institution.

**Purpose:** The purposes of this study were to understand the Six Sigma process and use it as a framework to improve BMV scanning in the ED from a rate of 42% to a goal of 70%.

**Methods:** A multidisciplinary team consisting of an RN/PhD/Board member, a family physician, a pharmacist, a grant writer, and director of radiology was assembled as part of a six month Six Sigma training program. Six Sigma processes were used to define the problem, then to identify and measure baseline performance, analyze root causes, develop and validate improvements, and produce a control plan to sustain those improvements. Root causes were identified using process mapping, fishbone reductive diagramming, and other tools. Qualitative and quantitative data were collected through multiple GEMBA walks, primary and secondary data analysis, stakeholder interviews, pre-and post-intervention surveys, and developing incentive measures. Existing medication scanning data was analyzed using multiple subscales such as shift, patient acuity, nurse status, etc.

**Results:** All root causes were found to be statistically significant and targeted solutions were developed. There was a culture of non-accountability; equipment was unreliable broken, or missing, BMV training was unstandardized, Workstations-on-Wheels (WOWs) that were supposed to be taken to the bedside for BMV scanning were not being used as intended, resulting in non-or partial scans, and nurses/administrators were unaware of their actual scan rates. Interventions were developed to address all of these issues including: fixing/replacing broken equipment, upgrading WIFI, “huddling” with each shift to talk about BMV scanning, reminder posters, administrative oversight, “Wall of Fame” for achievement recognition, and increased nurse accountability. Lighter, smaller WOWs were piloted on the unit with great success. Scan rates increased from 42% to 81% in three months. Control/sustainability measures include individual/unit oversight, and continued review at monthly medication safety meetings.

**Implications:** The extensive institutional multidisciplinary emphasis on Six Sigma Greenbelt training represents a commitment to patient safety and zero harm as part of an overall plan to have a highly reliable and safe organization. It is crucial to not only develop structured plans for improvement and sustainability but to look for ways that those plans can fail to mitigate future problems. Results need to be shared within and outside of the organization and more stakeholders involved in the improvements and future Six Sigma training. Financial impacts are significant: direct cost savings by replacing WOWs with smaller units is at least \$17, 500. Indirect cost savings as represented by time saved moving between equipment and increased efficiency is approximately \$121,000/year, as measured only for nurses; actual savings are higher when others who use BMV scanning are included. Some other indirect potential cost savings are related to patient turnaround times and satisfaction measures.



# NURSE SENSITIVE INDICATORS: IMPROVING PATIENT OUTCOMES

## EBP Mentors for Compliance with CLABSI Prevention

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**Purpose/Aims:** The purpose of this project was to determine if the development and use of a cohort of trained evidence-based practice (EBP) mentors would improve compliance with EPB in the prevention of central line-associated blood stream infection (CLABSI) in the adult acute care setting. The project addressed the following aims:

- Aim 1: Establish and educate an interdisciplinary cohort of EBP mentors.
- Aim 2: Translate the EBP mentor role for compliance with CLABSI prevention.

**Rationale/Background:** The quest for quality in the wake of healthcare reform has placed infection prevention at the forefront of process improvement. Despite national efforts, compliance with CLABSI prevention strategies is difficult to sustain and a lack of compliance negatively impacts patient safety and agency financial stability. The use of the EBP mentor model was translated into the practice of a clinical agency experiencing an increased rate of CLABSI and associated increased length of stay and cost despite infection prevention efforts.

**Brief Description of Best Practice:** The Advancing Research & Clinical Practice through Close Collaboration (ARCC) model developed by Melnyk and Fineout-Overholt was used to guide system-wide implementation and sustainability of EBP with the goal of improving quality of care and patient outcomes. The model outlines the development of key mentor/champions of EBP who support staff through the change process and facilitate achievement of high-reliability care. Using the ARCC model of EBP, an interdisciplinary healthcare team (N=19) participated in a 3-day EBP educational immersion followed by a 5-month EBP implementation plan to improve, mentor, and sustain compliance with CLABSI prevention measures. The EBP Belief Scale, EBP Implementation Scale, and Organizational Culture and Readiness for System Wide Integration of Evidence-based Practice survey were used to measure EBP implementation at three data points: pre- and post-immersion and at 5 months post-immersion.

**Outcomes Achieved:** Through a quality evaluation framework, significant improvement of the structure, process, and outcomes for the prevention of CLABSI occurred over time. Mentor beliefs about EBP ( $p < .005$ ), perceptions regarding organizational culture and readiness for EBP ( $p < .005$ ), and the extent of EBP implementation ( $p < .001$ ) demonstrated significant effect for time, and sustained growth at the 5 month period ( $p < .003$ ). Process changes made by the EBP mentors were supported through subsequent meta-analysis publication and revision of national infection prevention CLABSI guidelines. At the close of the project, no new CLABSI infections occurred.

**Conclusions:** The successful use of EBP mentors to build and sustain a culture of inquiry has the potential to dramatically improve patient care, nursing practice, and organizational performance. The ARCC model has transferable application in the clinical setting for sustaining compliance with CLABSI best practice prevention measures.

## NURSE SENSITIVE INDICATORS: IMPROVING PATIENT OUTCOMES

### Improvement Rounds: Team Problem Solving to Support a Culture of Safety

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**Purpose:** In March of 2014, the AHRQ Culture of Safety Survey was conducted with all staff in a large academic medical center in the Pacific Northwest. The Cardiovascular Intermediate Care Unit had below-benchmark data in the majority of categories including frequency of events reported, communication openness, organizational learning, supervisory expectation and response promoting safety, and feedback about errors. The goals of this initiative were to increase learning from safety events and improve staff perception of unit safety.

**Rationale:** In 1999, the Institute of Medicine released a report “To Err is Human” that highlighted how impaired patient safety standards and medical errors resulted in significant injury to patients. Patient safety is the responsibility of all healthcare professions. Work environments that are committed to creating a culture of safety succeed in reducing medical errors by reporting events and engaging in continuous improvement to prevent errors. Nurse involvement is critical to success in these cultures.

**Methods:** The method for this initiative involved 3 elements:

**Structured Closed Loop Communication:** Ensure follow up with all reporters for closed-loop communication through a variety of methods, including face-to-face discussion, email communication and group problem solving.

**Team Problem Solving Structure:** The unit’s existing inter-professional improvement round structures served as the platform to review patient safety related events. Attendance at these rounds includes nursing, providers, pharmacists, administrative leadership, and ad hoc members based on the issues being discussed that week. This debrief focused on acknowledging best practices, identifying system issues, problem solving with team members and initiating immediate action steps to improve patient safety or prevent event(s) from reoccurring. Nurses were involved in real-time problem solving. Clinical nurses were engaged to identify current state and promoted an environment to brainstorm ideas, discuss barriers to best practice, and test solutions. Their contributions and engagement helped with effectiveness and support for change.

**Transparent Communication:** Shared learning and action steps were summarized after the weekly rounds and disseminated to all team members through multiple modalities, including email, weekly unit announcements, and postings at the huddle board. In addition, the unit charge nurses highlighted shared learning from the week’s events and informed the team on the number of events reported the previous week during twice-daily shift huddles.

**Outcomes Achieved:** Since the intervention there has been a greater than 40% increase in the number of reported near misses and safety events. Comparing the AHRQ Culture of Safety scores from 2014 and 2016, the scores improved in every group including outperforming the averages of academic medical centers in the majority of categories. There was a 20% increase in the staff perception of the frequency of events reported, organizational learning, and communication openness and a 30% increase in supervisory expectation and response promoting safety, and feedback about errors.

**Conclusions:** Structures that support closed loop communication, team problem solving, and transparent communication about safety are effective, efficient, cost-neutral tactics that work to foster a culture of safety. Actively engaging clinical nurses in problem solving builds confidence in their commitment to safety.



## Abstracts of Podium Presentations

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### **NURSING EDUCATION: SIMULATION/DIGITAL TECHNOLOGY**

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#### **IMPACT OF CLINICAL SIMULATION ON BEGINNING NURSING STUDENTS' SELF-EFFICACY/LEARNING**

*Lucy R. Van Otterloo, Cathleen Deckers*

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#### **THE SIMULATION LEARNING MODEL: STUDENT EXPERIENCE**

*Rana Halabi Najjar, Bret Lyman, Nick Miehl*

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#### **LEARNING TOGETHER, COMBINING UNDERGRADUATE AND GRADUATE SIMULATED LEARNING**

*Kristin Schams, Audrey Snyder, Karen Hessler, Dean Zeller, Krisinda Caywood*

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#### **TEACHING EVIDENCED-BASED NURSING PRACTICE WITH OPEN EDUCATIONAL MATERIALS**

*Michelle Dang, Tara Sharpp, Denise Wall Parilo*

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#### **PREPARING NURSING EDUCATORS AND STUDENTS FOR DIGITAL CITIZENSHIP**

*Jeanette McNeill, Kathleen N. Dunem, Katrina Einhellig, Lory Clukey*

# NURSING EDUCATION: SIMULATION/DIGITAL TECHNOLOGY

## Impact of Clinical Simulation on Beginning Nursing Students' Self-Efficacy/Learning

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**Purpose/Aim:** The purpose of the study was to compare the effectiveness of two educational delivery methods for the clinical setting, traditional lecture and high-fidelity human simulation on beginning level nursing students' self-efficacy. The aim was to determine if a simulated experience would increase self-efficacy of students preparing to enter the obstetrics clinical setting thereby improving the students' confidence and maximizing learning outcomes.

**Background:** The use of simulation as an educational tool is becoming increasingly prevalent in nursing education. Simulation-based education has been shown to improve communication skills, collaboration, and critical thinking, as well as increase self-efficacy and competency. In fact, the National Council of State Boards of Nursing recommends substituting high-quality simulation experiences for up to half of traditional clinical hours. Although most published studies show improved learning with simulation compared to traditional education, there are few attempts to determine simulation effectiveness in building self-efficacy prior to beginning the clinical experience and/or in the obstetric setting. While all nursing courses adhere to a similar nursing practice basis, the care of the childbearing family is unique in its need to understand normal physiologic functioning as well as the effects pregnancy has on these normal functions.

**Methods:** A control/experimental design was used for this study. Students enrolled in the clinical courses were either placed in the traditional lecture or simulation group. A pre/post-test was utilized to assess knowledge and a validated self-efficacy instrument (Obstetric Nurse Self-Efficacy) specific to the obstetric setting was used to determine level of confidence. Assessments were linked using specific participant ID numbers and entered into SPSS for analysis.

**Results:** A total of 150 students participated in the study (control=64, experimental=86). Preliminary analysis shows no significant difference in knowledge acquisition between the two groups as expected, but the simulation group had slightly higher confidence scores. Qualitative data collected from students in the simulation group indicated that they felt better prepared to initiate care for the laboring patient, were less anxious about "not-knowing", and adapted to the new unit quickly. Faculty noted a positive difference regarding students' initiation of and confidence in care with those in the simulation group.

**Implications:** Novice students are noted to incur increased anxiety when entering the obstetric course with limited knowledge and skills needed quickly for the care of the obstetric population. Furthermore, patient safety concerns with this vulnerable population limits actual hands-on experience to learn the necessary new skills. The results of this study support the use of simulation to assist in enhancing undergraduate students' self-efficacy and knowledge in dealing with obstetric patients as well as their satisfaction with learning. Although simulation may be costly, programs should consider the appropriate, adequate, and timely use of simulation in nursing education and develop policies for standardization throughout the curriculum.

# NURSING EDUCATION: SIMULATION/DIGITAL TECHNOLOGY

## The Simulation Learning Model – Student Experience

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**Aims:** 1.) To describe a conceptual model The Simulation Learning Model – Student Experience (SLM-SE) which explicates the experience of undergraduate nursing students in high-fidelity human patient simulation. 2.) To discuss simulation strategies implemented in an undergraduate nursing curriculum based on the SLM-SE.

**Background:** Research has revealed the effectiveness of simulation for helping students develop self-efficacy, knowledge, clinical judgment, and proficiency in technical skills. Ongoing simulation research is evaluating the specific elements within simulation that impact educational effectiveness. Cordeau was the first to collect written qualitative data from 19 junior level nursing students about their first graded clinical simulation scenario. The study revealed a lack of understanding of the students' experience of simulation and how that can influence their learning. Recognizing that further research was needed, a qualitative study was conducted to better understand the student experience in high-fidelity human patient simulation. The results of this study was published in the *International Journal of Nursing Education and Scholarship*. This presentation focuses on describing the conceptual model developed from the study and the simulation strategies implemented to the simulation curriculum based on the SLM-SE.

**Methods:** This grounded theory study was conducted to describe the experience of nursing students in high-fidelity simulation, and develop a model which explicates the experience of nursing students in simulation. Focus group interviews were conducted with three cohorts of students enrolled in a baccalaureate nursing program with 6 – 11 students in each focus group who experienced simulation four to twelve times per academic year.

**Results:** The Simulation Learning Model – Student Experience (SLM-SE) was developed to illustrate the student's multi-dimensional experience of learning through high fidelity simulation. This model shows five themes: emotional processing, anxiety and fear, making connections, and fidelity interacting together with the ultimate goal of learning. The model explains that students found it difficult to cognitively process and learn from a simulation until they started to emotional process it. In addition, the model shows that anxiety can be a motivator or barrier to learning in simulation. Applying this model, simulation strategies were implemented which include: 1) Offering simulation orientation at the beginning of the program and re-orientation in each course to familiarize students with the simulation area 2) Preparing students for both the content and emotions they may experience in simulation 3) Starting simulation in a familiar environment rather than the simulation suite 4) Incorporating more faculty-led supportive and structured debriefing immediately following the simulation 5) Using actors rather than faculty as standardized patients for simulation.

**Implications:** The SLM-SE facilitated the understanding of student experiences with high-fidelity simulation and was a catalyst for making changes in the implementation of simulation on our campus. These changes have made an impact on the emotional processing of students in simulation as well as enhanced learning. Recommendations for future research include better understanding and developing strategies to optimize students' experiences for learning in simulation.

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**Funding:** Sigma Theta Tau International Beta Psi Chapter.

# NURSING EDUCATION: SIMULATION/DIGITAL TECHNOLOGY

## Learning Together, Combining Undergraduate and Graduate Simulated Learning

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*Krisinda Caywood, BSN, RN*  
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**Purpose:** To evaluate the effectiveness of collaborative learning using undergraduate nursing students (UNS) as standardized patients (SP) for advanced practice nurses (APNs).

**Background:** The use of SP has been widely used in training nurses in healthcare education to better prepare them for patient interactions upon clinical assignments (Defenbaugh et al, 2016; Quail et al, 2016; Miller & Camacho, 2016). Defenbaugh et al (2016) evaluated the use of SPs in APNs' education and found an increase in their self-rated communication skills, patient awareness, and clinical practice skills. Integrating SPs into graduate nursing education provides "realistic patient encounters" for greater learning in the areas of physical examination techniques and communication skills (Miller & Camacho, 2016). One area that has not been explored is the use of UNS as the standardized patient for the graduate nursing students. This new educational collaboration is one form of Interprofessional Education (IPE). Two areas that show improvement from IPE are communication and collaboration, both of which lead to improved patient outcomes (Delunas & Rouse, 2014).

**Methods:** Participants in this study included first semester bachelor in science UNS and graduate nurse practitioner students in a health assessment course for their respective programs. The UNS participated in the APN student's practice sessions and testing sessions as their SP for their physical exam in the laboratory. IRB review and approval were obtained prior to inviting participation in the study. Participation in the collaborative assessment activity was a course expectation; however, the pretest and posttest were anonymous and voluntary and in no way affected their grade in the course. Anonymity of participants was maintained. Survey data consisted of demographics, experience in healthcare, Likert scale responses to self-assess confidence level of performing basic physical assessment skills before and after the educational intervention, and open-ended questions to solicit feedback on the collaborative learning experience. Three weeks into their next clinical experience the students repeated the survey. Data were entered into SPSS, aggregated and reported without participant identifiers. Pre and post experience scores were analyzed with a paired t-test. Qualitative methods were used to analyze responses to open ended questions.

**Results:** Undergraduate and graduate student's self assessment of confidence increased in all but two areas. Qualitative analysis identified students' liked collaborating, the two groups learned from each other, their critical thinking, confidence levels and ability to work with patients increased. UNS learned more about the differences in scope of practice and their role, liked learning more about clinical areas, and felt APNs modeled professional practice. At three weeks into clinical only 5 of the 21 areas of self-reported confidence were statically significant.

**Implications:** Undergraduate and graduate students can be placed in a collaborative learning environment with positive outcomes for learning. This experience allowed the APN student to stay in the advanced practice role. The fact that student self-confidence was not maintained at 3 weeks into clinical may be explained by cognitive dissonance theory. Future research should explore traditional health assessment versus a collaborative environment and self-confidence versus actual test performance ratings.

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# NURSING EDUCATION: SIMULATION/DIGITAL TECHNOLOGY

## Teaching Evidenced-based Nursing Practice with Open Educational Materials

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*Michelle Dang, PhD, RN, Associate Professor and RN-BSN Program Coordinator*  
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**Purpose:** The purpose of this study was to compare undergraduate nursing students' satisfaction and knowledge using a nursing research textbook and using free, open-educational materials.

**Rationale:** Nursing textbooks are expensive and can be cost-prohibitive for many students. Students may spend up to \$1100 annually on textbooks that they may not use again. Also, today's millennial learners are more adept at learning from a variety of sources instead of only the traditional textbook.

**Methods:** Nursing faculty of the two undergraduate nursing research classes (n=130 students a semester) in a school of nursing changed the required learning materials from a nursing textbook to open educational materials. We received IRB approval to compare the students' satisfaction and knowledge using traditional textbooks versus open resource materials over two semesters. We developed a one-page survey with Likert-type scale and open-ended questions that asked about the cost that students spent on course materials and the satisfaction they had using the materials. Students in the fall 2015 semester used a nursing textbook and students in the spring 2016 semester used free, open access materials, including peer-reviewed articles and an open online text published by the National Institutes of Health. Using descriptive and t-test statistics, we compared results of the survey and scores from one quiz to determine if there were differences between the two groups in terms of satisfaction and knowledge.

**Results:** Students' expenditures on course materials were significantly decreased, with an average savings of \$43 per student and a total savings of \$4,882 among 130 students in the spring 2016 semester. Student satisfaction increased using the free online materials compared to the traditional texts as measured by the Likert-type survey questions and comments. Thirty percent of students in the textbook group rated the textbook as 'a little useful' or 'not at all useful' compared to 10% of students in the open access book group. Also, 46% of students who used the textbook rated the material as having 'some parts or most parts too difficult to understand' while 21% of students who used the open access book agreed with this statement. Additionally, students were able to demonstrate learning using the free resources, as evidenced by no significant differences in mean scores on matched items from their first quiz between the groups.

**Implications:** Findings from this study demonstrate that open access course materials can significantly reduce costs for students while supporting their learning and satisfaction. Given the preference for and exposure to digital and online resources by today's learners, nursing faculty should consider strategies such as using open materials to meet the technological needs of the modern student. As costs for learning materials rise, low-cost options are important considerations in ensuring accessibility. This study supports the notion that millennial students can learn from a variety of learning materials such as on-line e-books, videos, and articles.

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**Funding:** The Sacramento State Center for Teaching and Learning through a Faculty Learning Community.



# NURSING EDUCATION: SIMULATION/DIGITAL TECHNOLOGY

## Preparing Nursing Educators and Students for Digital Citizenship

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**Purposes/Aims:** The purposes of this project were to:

1. Describe factors influencing the occurrence of incivility in the online environment
2. Examine effects of best practices in digital citizenship in creating an effective OLE.

**Rationale/Background:** Digital citizenship, and preparing nursing students to be responsible and effective digital citizens, is the newest challenge facing nursing education and nursing practice. With increasingly prevalent online learning, volcanic use of social media, and emerging technologies in the worksite for care delivery, nursing education must focus on preparing students and graduates for this high tech world of the future.

**Approach:** Results from an online survey, using the Incivility in the Online Learning Environment survey (Clark et al., 2012) were analyzed which yielded needs assessment data regarding faculty and student learning needs regarding online course delivery and responsible use of media. Findings included that faculty and students differ in their perception of the extent of incivility experienced in online courses but agreed in / identification of egregious behaviors, such as name calling, verbal insults, belittling comments to others about a faculty member and making racial, ethnic, sexual, or religious slurs. However, some faculty behaviors, such as lack of timely feedback on assignments and posting an unclear syllabus were more subtle, yet seen as uncivil by students. Qualitative data noted recommended ways to promote civility, which were similar from both groups--role modeling and penalizing incivility; additionally, students emphasize the need for clear course requirements. Advantages of OLE's center around flexibility and accessibility, while challenges included lack of connection and time commitment. Recognition of these advantages and challenges, within the context of promoting digital citizenship, provided a framework for the preparation of orientation materials for faculty and students. Best practices must be used in developing/delivering online courses as well as in orienting faculty and students regarding expectations for professional behavior online.

**Outcomes Achieved:** A toolkit for faculty development, and student orientation was developed including topics such as effective approaches to learning online and elements of digital citizenship. The toolkit is being implemented with faculty in Fall, 2016 and students enrolled in Spring, 2017. Planned evaluation of outcomes includes faculty and student feedback on the toolkit and orientation materials, and monitoring of elements of effective online learning characteristics (faculty to student, and student to student interaction) and instances of incivility in Spring online classes.

**Conclusions:** Areas of strength and weaknesses will be compiled from feedback on the faculty development and orientation materials. Attention to this unique and increasingly utilized learning environment is essential to the goal of establishing safe and effective online learning environments, and prevention of incivility in learning environments and subsequently in workplaces.

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**Funding:** This project was partially funded by a University of Northern Colorado Office of Assessment Project Mini-Grant.

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## Abstracts of Podium Presentations

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### NURSING LEADERSHIP CHALLENGES

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#### SHARED UNDERSTANDING AMONG THE HEALTHCARE TEAM: HOW OFTEN DO WE ACHIEVE IT?

*Jennifer Baird, Alisa Khan, Stephannie Furtak,  
Kathryn A. Williams, Christopher Landrigan*

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#### QUANTIFYING THE IMPORTANT ROLE OF THE NURSE MANAGER

*Martha L. Grubaugh*

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#### LEADERSHIP INFLUENCE SELF-ASSESSMENT TOOL: NURSES LEADING TRANSFORMATIONAL CHANGE

*Casey R. Shillam, Jeffrey M. Adams, Debbie Chatman Bryant,  
Joy Deupree, Suzanne Miyamoto*

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#### EXPLORING PROFESSIONAL AND CAREER COMMITMENT DIFFERENCES IN NURSING LEADERS

*Jennifer Mensik, Lesly Kelly*

# NURSING LEADERSHIP CHALLENGES

## Shared Understanding among the Healthcare Team: How Often Do We Achieve It?

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**Purpose:** The purpose of this mixed-methods analysis was to evaluate rates of shared understanding of the pediatric patient's plan of care among nurse, physician, and parent members of the nighttime healthcare team, to identify predictors of nurse lack of agreement, and to describe sources of disagreement.

**Background:** Delivery of high-quality, family-centered care to hospitalized pediatric patients and families is dependent upon a shared understanding of the patient's plan of care amongst all members of the healthcare team, including physicians, nurses, and the patient/family. Lack of agreement about the plan can have an impact on the quality and accuracy of communication, and it creates the potential for errors or delays in care, both of which can prolong the hospital stay and/or result in harm to the patient. The extent to which this shared understanding exists is largely unknown.

**Methods:** This analysis used pre-intervention data from a study to evaluate the effect of a nighttime communication bundle on shared understanding and parent experience of care. Nurse, physician, and parent participants completed a 9-question survey with questions about the child patient's reason for admission and plan of care. After achieving an acceptable level of reviewer agreement (74.7% across categories,  $\kappa=0.6$ ) physician and nurse reviewers independently evaluated surveys in dyads (nurse/physician, nurse/parent, physician/parent) and rated for agreement using a 3-point scale. Reviewers additionally rated patient complexity on a 3-point scale (simple, intermediate, complex). Logistic repeated measures regression was used to determine predictors of nurse lack of agreement. Open-ended responses in cases with lack of agreement were analyzed using conventional content analysis to understand sources of disagreement.

**Results:** Nurses and physicians (n=280 dyads) demonstrated shared understanding about the plan of care 48.9% of the time, nurse and parents (n=260) 36.2% of the time, and physicians and parents (n=266) 47% of the time. Patient complexity appeared as a driver of nurse lack of agreement. The adjusted odds of lack of agreement among nurses and parents was 2.6 (95% CI: 1.6-4.4,  $p<0.001$ ) times greater for patients of complexity level 2 when compared to level 1, and 4.1 (2.0-8.5,  $p<0.001$ ) times greater for level 3 compared to level 1. The adjusted odds of lack of agreement among nurses and physicians was 3.3 (1.9-5.8,  $p<0.001$ ) times greater for patients of complexity level 2 when compared to level 1, and 4.5 (2.1-9.2,  $p<0.001$ ) times greater for level 3 compared to level 1. Key reasons for lack of agreement included confusion between the reason for admission and plan of care, discordance in severity and specificity of the plan, disagreement about the patient's discharge disposition, and differences between nursing and the medical plans of care.

**Implications:** Significant opportunity exists to enhance the extent to which nurses, parents, and physicians express shared understanding of the pediatric patient's plan of care. Efforts to improve understanding will likely need to focus on mechanisms for regular and frequent communication about specific elements of the plan of care among these members of the team. Particular focus may be needed for patients with above-average levels of complexity.

**Funding:** AHRQ-5T32HS00063-21, AHRQ-1K12HS022986, Boston Children's Hospital Program for Patient Safety and Quality Research Grant and Taking on Tomorrow Innovation Award.

**Additional Contributors:** Members of the Patient and Family-Centered I-PASS Study Group.

# NURSING LEADERSHIP CHALLENGES

## Quantifying the Important Role of the Nurse Manager

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**Purpose/Aims:** To determine the associations among staff nurses' perceptions of nurse manager leadership ability, conflict management, and team backup on medical-surgical units.

To determine if the leadership competency of conflict management mediates the relationship between perceived nurse manager leadership ability and team backup.

**Background:** Nurse manager's leadership practices and ability can positively or negatively influence outcomes at multiple levels of the healthcare system. Moreover, research indicates that unit-level teamwork in acute care hospitals is crucial for patient safety and optimal patient outcomes (Page, 2004). Theory proposes that leadership ability enables effective teamwork including the willingness of team members to assist each other, which is considered the core of teamwork and commonly known as team backup (De Dreu & Van Vianen, 2001; Kalisch, Lee, & Salas, 2010; Salas, Sims, & Burke, 2005). Theory also proposes, however, that conflict among team members can negatively affect team backup. Although competent and strong nurse managers are recognized as essential to promoting team backup, the operant mechanism by which they influence this important aspect of teamwork remain unknown. This study will address this knowledge gap by quantifying the associations among nurse managers' leadership abilities, their conflict management ability, and the extent of team backup as reported by a sample of staff registered nurses from 50 medical-surgical units.

**Methods:** A secondary analysis was conducted with data collected from 214 staff nurses on medical surgical units from 16 acute care hospitals in a mid-Atlantic state. Reliable and valid instruments measured staff nurses' ratings for their nurse manager's leadership ability, team backup, and management of unit conflict. Linear regression models were estimated and robust standard error procedures conducted to account for theoretically nested data. A mediation model was tested to determine if conflict management influenced the relationship between nurse manager leadership ability and team backup.

**Results:** Nurse manager ability and conflict management were significantly associated with team backup ( $F(2, 205) = 26.316, p < .000$ ) explaining approximately 20% of the variance in team backup. Mediation testing was conducted through a series of three regression models, and indicated that conflict management partially mediated the relationship between nurse manager leadership ability and team backup.

**Implications:** Findings from this study empirically support the important role of the nurse manager in promoting team backup as an essential component of teamwork. Findings indicate that the nurse managers' ability to reduce unit conflict is one operant mechanism through which managers can promote team backup. It is essential therefore, that nurse managers receive ongoing training in conflict management strategies and maintain high levels of conflict management skills. Additional research is needed to quantify other mechanisms through which nurse managers' leadership abilities contribute to teamwork, and therefore patient safety.

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# NURSING LEADERSHIP CHALLENGES

## Leadership Influence Self-Assessment Tool: Nurses Leading Transformational Change

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**Purpose:** This goal of this study was to develop a Leadership Influence Self-Assessment tool (LISA) for aspiring, emerging, and mid-career nurse leaders seeking to transform health and health care. The LISA impacts two critical areas for improved health care change: 1) exposure to LISA through leadership development opportunities allows nurses in leadership roles to understand the importance of influence as a key leadership competency; and 2) completing the LISA enhances a nurse leader's ability to understand one's own influence status and assist in guiding development toward becoming increasingly influential.

**Background:** The ability to influence the behaviors and actions of others is a skill that is imperative to success in all leadership roles. This capability is particularly important for nurse leaders as leadership influence impacts workforce performance, motivation, and perceptions of interprofessional collaboration, resulting in improved patient care, streamlined clinical practice and optimal healthcare outcomes.

**Methods:** The Adams Influence Model (AIM) provides the theoretical foundation to the LISA. The study team developed 192 theoretically-driven items with 8 hypothesized components or subscales, written as positively directed questions placed on a 6-point Likert scale. For example, "To what extent do you have the authority to access the financial resources of your organization?" with response formats ranging from (1) "not at all" through (6) "total/ complete". Content and construct validity were established by a panel of content area experts, and items with lower scores on representativeness of the construct were removed. The result was a 145-item survey for factor analysis and psychometric testing. Institutional review board (IRB) approval was granted through the University of Alabama-Birmingham's IRB. The study sample was attained through snowball sampling technique and email distribution through e-mail listservs of several national nursing administration organizations. An e-mail containing a link and URL was sent to all members of listservs with an invitation to participate in the online survey between May 2016 and June 2016. Participants (n = 179) completed the survey via a secure Web connection. **Results:** Exploratory factor analysis identified the best solution contained four factors. Although different from the hypothesized original 8 AIM factors, theoretical constructs still clustered together within the 4 factors. Maximum Likelihood extraction method with direct oblique rotation was used to establish the pattern matrix. Factor loadings whose magnitude was greater than 0.4 were included in the final instrument for a total of 81 items. Cronbach's Alpha for factor one (status) = 0.93; factor two (authority) = 0.94; factor three (strategy) = 0.92; and factor four (integrity) = 0.91.

**Implications:** By identifying gaps, strengths and weaknesses in influence capacity, individuals who complete the LISA are expected to gain insight and knowledge to enhance their own skill in leadership and influence. Understanding their individual needs, nurses can seek professional development opportunities to advance their leadership and influence acumen. Use of the LISA in leadership programs is expected to help nurses cultivate, promote, and assert influence to ensure their voices are respectfully acknowledged and valued as part of a healthcare team.

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**Funding:** Robert Wood Johnson Foundation Executive Nurse Fellows program.

# NURSING LEADERSHIP CHALLENGES

## Exploring Professional and Career Commitment Differences in Nursing Leaders

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**Purpose:** To describe and analyze predictors of Professional Identity (PI) and Career Commitment (CC) in nurse leadership, including examining whether differences exist between genders and generations in regards to potential professional and personal barriers.

**Participants/Subjects:** The study analyzed A sample of 448 (n = 379 female and n = 68 males) self-identified nurse leaders. Nurse leaders included charge nurse, manager, director, CNO/CNE, CEO and board member.

**Methods:** This study was conducted in the fall 2015 utilizing a cross-sectional distribution to a statewide sample of nurse leaders via two state associations with continued snowball sampling to other organizations. The survey consisted of demographic questions, work-related questions, personal-family related questions, and the validated Career Commitment and Professional Identity scales.

**Results:** The average age was 49.57 (SD = 10.76), with females averaging slightly higher (M 50.19, SD 10.63) than males (M 45.79, SD 10.84). The sample consisted of nurse leaders from Generation X (45%) or the Baby Boomer generation (48%). As expected, title increased with generation; Generation X accounted for 50 % of middle leadership positions while the Baby Boomer generation held 71% of executive (CNO) and 82% of CEO level positions. Nurses on average enter the profession at a young age (M 26.62, SD 7.18), and quickly move in to leadership positions (M 31.63, SD 8.31). Leaders report working extended hours (41.82 hours on average). The leader population is moving toward higher education with reported demonstrated progression of 9.8% ADN, 37.1% BSN, 39.1% MSN, 4.7% DNP, 5.6% doctorate. The majority of respondents were married (68%) and 73% had children with 38% of respondents still raising at least one child at home. No significant differences were seen between male and female average hours worked ( $p = .33$ ), percent of household responsibilities ( $p = .29$ ) or current salary ( $p = .55$ ). It was found that female nurses entered the profession approximately one year earlier than males, however females took 7.2 years on average (SD = 6.50) to move into leadership, while men took only 4.4 years (SD = 5.14). However, multiple significant differences between generations were seen in regards to the CC and PI scales.

**Limitations:** This study was conducted within one southwestern state and may not be representative of nursing leaders in other states.

**Conclusions:** Approximately one-third of the nation's nursing workforce, roughly 850,000 nurses, are between the ages of 50 and 64, and are likely to retire before the year 2020. The urgency for the nursing profession to develop successful leaders is needed more than ever. Recognition of these generational and gender differences can be translated immediately into talent identification and mapping process that will enhance healthcare leaders successful ability to close the leadership gap within their organization.

**Implications/Future Research:** Further research is needed to determine if these differences hold true for nursing leaders in other states as well as the long term impact of these differences in securing sufficient nurse leaders to fill positions as retirements occur.



## Abstracts of Podium Presentations

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### PATIENT SAFETY

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#### MULTILEVEL FACTORS ASSOCIATED WITH INPATIENT INJURIOUS FALLS

*Yunchuan Zhao, Marjorie Bott*

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#### FALL PREVENTION BEHAVIORS AND MOTIVATION OF HOSPITALIZED OLDER ADULTS

*Hiroko Kiyoshi-Teo, Kathlynn Northup-Snyder*

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#### TESTING A TYPOLOGY: FACTORS THAT INFLUENCE PATIENT SAFETY OUTCOMES

*Shelly A. Fischer, Lesly Kelly*

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#### ENGAGING PATIENTS INTO FALL PREVENTION: NURSES' READINESS FOR A MOTIVATIONAL APPROACH

*Hiroko Kiyoshi-Teo, Kathlynn Northup-Snyder*



# PATIENT SAFETY

## Multilevel Factors Associated with Inpatient Injurious Falls

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**Purpose:** Inpatient falls and injurious falls in acute care settings have significant impact on patients and the healthcare system. Inpatient falls and injurious falls are a complex phenomenon that can be attributed to multilevel factors including organization at the hospital and unit levels, nursing care process, and patient-specific factors. However, gaps exist in the literature on the associations of injurious falls with multilevel factors. The purpose of this study was to examine the associations of injurious falls among all patient falls with multilevel factors in acute care hospitals.

**Conceptual Framework:** The modified Donabedian Structure–Process–Outcome (SPO) model served as the conceptual framework. Structure included hospital characteristics (i.e., hospital size, teaching status, and Magnet® status) and unit factors (i.e., nurse staffing and unit type); unit process consisted of nursing care factors (i.e., falls without employee assistance, fall risk assessment, implementation of fall prevention protocol, and physical restraint use); and the outcome variable was incidence of inpatient injurious falls. Unit-level patient population characteristics (i.e., gender and fall risk status) also were included.

**Methods:** This cross-sectional, correlational study used National Database of Nursing Quality Indicators® (NDNQI®) data from July 2013 to June 2014. The sample included all falls recorded in adult medical, surgical, medical-surgical, and step-down units ( $N = 2,299$ ) in NDNQI® participating hospitals ( $N = 488$ ). Descriptive and hierarchical negative binomial regression analyses were conducted to examine the significance of associations of injurious falls with multilevel factors. The outcome variable was the number of injurious falls among all recorded falls.

**Results:** There were on average 78.9 reported annual falls ( $range = 1-864$ ) and 5.2 injurious falls ( $range = 1-131$ ) across the units. Falls in teaching hospitals were 13% less likely to be injurious falls ( $p = 0.001$ ). Falls on surgical units were 8% more likely to be injurious falls ( $p = 0.021$ ). Falls without employee assistance were 4% more likely to be injurious falls ( $p = 0.005$ ). Registered Nurse hours per patient day (RNHPPD) demonstrated a non-linear relationship with injurious falls. Hospital Magnet® status, bed size, unit non-RNHPPD, and RN turnover were not associated with injurious falls.

**Implications:** The study adds new knowledge about the multi-level factors contributing to inpatient injurious falls in acute care hospitals. Nurse leaders, researchers and policy makers may develop, implement and improve fall prevention programs based on the identified risk factors. The study also provides important implications for future research on injurious fall prevention in acute care hospitals.

# PATIENT SAFETY

## Fall Prevention Behaviors and Motivation of Hospitalized Older Adults

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**Purpose:** To evaluate hospitalized older adults' fall prevention behaviors and motivation.

**Background:** Fall prevention continues to be a major issue for older adult inpatients. Patient engagement through education is a key element in fall prevention programs, especially for cognitively oriented patients. However, older adults are known to resist fall prevention education, make choices that place them at risk for falls, and be concerned about changing daily habits and behaviors to avoid falling, which can mean loss of independence and new challenges for them. Application of behavior change theories and approaches to promote fall prevention in acute care settings is sparse. Utilization of the Transtheoretical Model to fall prevention programs may improve patients' engagement with safety behaviors.

**Methods:** Cognitively oriented older adult inpatients who are at risk for falling (age  $\geq 65$ , Morse Falls Scale  $\geq 45$ ) were enrolled in the study from January to August 2016. Patient interviews were conducted at bedside to assess fall history, fall prevention behaviors (modified *Fall Prevention Behavior* questionnaire), readiness to change (*Importance and Confidence Ruler*), self-efficacy in fall prevention (*Short Fall Efficacy Scale-International* questionnaire), and patient activation (*Health Activation Measure* questionnaire). Descriptive statistics, and t-tests for continuous variables and chi-squares for categorical variables were conducted for comparative analyses.

**Results:** Participants (n=67) represented cognitively oriented inpatient males who, on average, were age 73.2 years old, hospitalized for 4.3 days, had a Morse Fall Scale score of 68.4, and Montreal Cognitive Assessment Basic score of 25.6 (<22 indicate mild cognitive impairment). Participants reported the level of importance for fall prevention as high at mean of 9.09, but confidence in preventing themselves from falling was lower at mean of 7.23 (1-10 possible score. 10: extremely important/confident). The mean self-efficacy score related to falling was 17.8 (28 maximum points for having the most concerns related to falling). The mean fall prevention behavior score was 2.97 (1-4 possible scores. 4=always implementing fall prevention behaviors). Patient activation score was, on average, 64.7 (1-100 possible score. 100=most activated to engage with his/her healthcare). When comparing patients who had fallen within the last 3 months to those who did not, ratings for importance were higher (9.7 vs. 8.51;  $p=.027$ ), but confidence lower (6.56 vs. 7.82;  $p=0.044$ ), and fall prevention behaviors higher (3.09 vs. 2.84;  $p=.024$ ). When the fall experience was beyond 3 months but within a year, these differences were not statistically significant.

**Implications:** A recent fall experience seems to impact patients' fall prevention behaviors, confidence, and their perception of the importance of fall prevention. Nurses may be able to leverage fall events to better engage and coach patients in fall prevention behaviors.

# PATIENT SAFETY

## Testing a Typology: Factors That Influence Patient Safety Outcomes

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**Purpose:** The purpose of this retrospective, multihospital analysis was to test hypotheses regarding relationships among organizational factors, workforce characteristics, and patient safety outcomes.

**Background:** The prevalence and cost of preventable medical error in acute care presents a compelling case for solutions. A recent study reported even higher rates of preventable harm than previously known; it is estimated that more than 400,000 die annually from avoidable error in the U.S. This study aims to identify solutions available to reduce common adverse patient safety events.

**Methods:** We conducted a secondary analysis on unit-level data from 81 nursing units, within 11 hospitals within a single hospital system in the Southwest United States. Units included Medical, Surgical, Combined Medical/Surgical, Stepdown, Intensive Care, and Rehabilitation.

Four quarters of data were combined from three existing databases. Patient safety outcomes measures were used as dependent measures and included pressure ulcers, falls, CLABSI, and CAUTI. Independent predictors drawn from the data included: Staffing Adequacy – 11 measures, Nurse Characteristics – 2 measures, Safety Climate – 1 composite measure, and Practice Environment – 1 composite measure. Linear regression models were used to analyze the collective and separate effects of the independent variables on the dependent variables. Hospital size, unit type, hospital case mix index, and catheter utilization ratios were used as control variables.

**Results:** Percentages of BSN or higher educational preparation and RN skill mix significantly predicted the incidence of Hospital Acquired Pressure Ulcers ( $F(19,61)= 2.201, p=.011$ ). Injury Fall Rates were also significantly predicted by higher proportion of baccalaureate prepared nurses and overall perception of safety (Safety Climate) on the unit ( $F(19,61) = 5.531, p<.001$ ), with the model explaining nearly 52% of the variance. As such, the overall perception of safety was also correlated with a decrease in injury fall rate ( $r= -.427, p=.020$ ). A strong positive relationship was found between Adequacy of Staffing Subscale and Practice Environment Scale scores ( $r=.862, p<.0001$ ). None of the independent variables were significant predictors of Central Line Associated Blood Stream Infections or Catheter Associated Urinary Tract Infections.

**Implications:** The clear significance of improved patient safety outcomes in the presence of a higher proportion of baccalaureate-prepared nurses reinforces the value of hiring and retaining BSN nurses at the bedside. Potential exists for improved patient experience, as well as greater cost-avoidance through decreased adverse events, such as fall-related injuries and pressure ulcers. The strong relationship between perceptions of staffing adequacy and practice environment reinforces the importance of nurse staffing in regard to satisfaction, retention, and subsequent cost.

Findings of this study support investment in the acute care setting to incent BSN hiring and retention, with potential financial return in terms of improved care quality and cost avoidance. Further work is needed to quantify the predicted return on investment by estimating the cost associated with increasing percentage of BSN staff and calculating odds ratios for adverse events. Further testing is needed to determine mediating/moderating effects of the factors. Potential exists to develop standardized composite measures for Staffing Adequacy, as well as Patient Safety Outcomes.

## PATIENT SAFETY

### Engaging Patients into Fall Prevention: Nurses' Readiness for a Motivational Approach

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**Aims:** The goal of this project was to assess and improve nurses' readiness to engage patients into fall prevention using aspects of motivational interviewing (MI) approach. The specific aims of this project were to conduct a pre-post assessment of nursing in-service targeted to improve nurses' knowledge about patient engagement and attitudes related to using MI for fall prevention in an acute care setting.

**Background:** Adult inpatients continue to fall despite consistent prevention efforts by the nurses. Patient education is one key element to promote safety behaviors. However, patients are known to be reluctant to engage with fall prevention activities. MI is a well-established behavior change approach. However, MI is rarely recognized as an effective approach in fall prevention, especially in acute care. Incorporating aspects of MI to routine fall education may be effective in preventing falls.

**Methods:** Medical-surgical nurses were invited to attend a 30-minute nursing in-service session (power-point presentation, discussion, and video). Nurses were informed about gaps in patients' engagement with fall prevention activities, introduced to aspects of MI that would be apply to a fast-paced medical-surgical setting (open-ended questions, evoking ideas, and asking for permission), and given sample scripts when challenging patient situations arose. Pre- and post- surveys were conducted to assess changes in nurses' knowledge about patient engagement and attitudes related to applying MI into fall prevention education.

**Outcomes:** Total of 89 nurses participated in the in-service. Nurses' knowledge about patient engagement improved. After the in-service, more staff were aware that even high risk patients are often not aware of being at high risk for falls (83.8% to 92.1%), that there are other ways to provide fall prevention education than pointing out the risks (48.2% to 78.1%), and MI is appropriate for fall prevention (81.2% to 100%). Nurses' level of importance for using MI in fall prevention improved: Eliciting patient's ideas and values (mean: 9.05 to 9.67) ( $p=.000$ ); exploring barriers (mean: 8.75 to 9.64) ( $p=.000$ ); and supporting patient's concerns and feelings (mean: 9.36 to 9.70) ( $p=.004$ ) (10=Extremely important, 1= Not at all important). The level of confidence related to using aspects of MI improved after the in-service but were still lower compared to the level of importance: Eliciting patient's ideas and values (mean: 7.59 to 8.70) ( $p=.000$ ); exploring barriers (mean: 7.30 to 8.64) ( $p=.000$ ); and supporting patient's concerns and feelings (mean: 8.38 to 8.84) ( $p=.006$ ) (10= Extremely confident, 1= Not at all confident).

**Conclusions:** The in-service improved nurses' knowledge about patient engagement and attitudes related to using MI with fall prevention education. Further work to investigate the fit between the nursing routines and MI-based fall education, and impact of this approach on patient outcomes will be beneficial.



**Abstracts of Podium Presentations**

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**PERINATAL ISSUES FOR PARENTS  
AND BABIES**

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**MATERNAL RISK DURING PREGNANCY:  
A CONCEPT ANALYSIS**

*Lucy R. Van Otterloo, Cynthia D. Connelly*

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**THE EFFECT OF ELEVATION ON NICU  
ADMISSIONS AND RESPIRATORY OUTCOMES**

*Fatih Kunkul, Madiha Abdel-Maksoud*

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**MOTHERS' CHOICE OF MUSIC AND PAIN RESPONSES  
IN HOSPITALIZED PRETERM INFANTS**

*Lina Badr; Lama Charafeddine*

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**FACTORS INFLUENCING PATERNAL INVOLVEMENT  
IN THE NEONATAL INTENSIVE CARE UNIT**

*Gina Clarkson, Mary Jo Gilmer, Elizabeth Moore, Mary Dietrich, Brent McBride*

# PERINATAL ISSUES FOR PARENTS AND BABIES

## Maternal Risk during Pregnancy: A Concept Analysis

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**Purpose/Aim:** How an individual defines risk during pregnancy can affect decisions on appropriate place and timing of birth, specific health behaviors that enhance birth outcome, and care utilization including adequate prenatal care and appropriate medical treatment modalities. A better understanding of risk will allow the formulation of care plans specific to the needs of the population and assist nurses in bridging the gap in communication between the provider's and pregnant woman's interpretation of risk. Therefore, the aim of this study was to provide an analysis of the concept of risk in the context of pregnancy, to clarify the meaning of risk and to explore implications for future research of this concept.

**Background:** Although mortality during pregnancy is a relatively rare occurrence, serious maternal morbidities are increasingly present in today's pregnant population. Risk factors have been identified that increase the potential for morbidities and subsequent care modalities have been implemented to decrease this risk. However, despite the wide use of the term 'risk' in the medical and nursing literature, determining a common definition is difficult. Differences in the understanding of risk during pregnancy can hinder the ability to provide consistent and appropriate care.

**Methods:** Walker and Avant's (2011) method of analysis was used to examine the concept of maternal risk. A search of the English literature was completed using the databases CINAHL, PubMed, Medline, and Google Scholar for years 2000-2014 using the keywords "risk", "maternal", and "pregnancy". This search yielded over 8000 academic articles which highlight the frequent use of the term in medical and nursing literature. The search was further narrowed to include only those articles defining risk as a 'concept' or 'concept analysis'. After limiting the search to English language only, 137 articles were found. Abstracts were reviewed and the articles were further reduced to include only those that defined risk as the primary concept. The final total number of studies which met the inclusion criteria was 10 with three publications strictly addressing the concept of risk in women during pregnancy.

**Results:** Three defining attributes of risk were identified: chance of injury/loss, cognitive recognition and the decision making processes. The antecedent of risk is the ability to understand the situation and cognitive ability to think about the potential consequences and adverse outcomes. Consequences of risk include the actual action taken as a result of the decision-making process.

**Implications:** Differences in perceptions of risk can potentially result in miscommunication between provider and pregnant woman and increase the risk of inadequate or incomplete care. An understanding of risk allows for the development of an individualized plan of care for each pregnant woman and empowers the nurse to advocate for appropriate care. Perinatal nurses are in a position to influence a pregnant woman's actions in recognizing her risk status through increased education. Once identified, at-risk pregnant women, providers, and birth sites can be matched according to level of need, resources available, and capacity to provide risk-appropriate care.

# PERINATAL ISSUES FOR PARENTS AND BABIES

## The Effect of Elevation on NICU Admissions and Respiratory Outcomes

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**Background:** Low birth weight (LBW) infants are at increased risk for adverse outcomes. Studies have shown that infant birth weight is inversely associated with elevation of mothers' residence. Whether mothers' increased elevation of residence leads to the need for postpartum interventions such as admission to a neonatal intensive care unit (NICU) or assisted ventilation for six or more hours has not been studied.

**Aims:** This study examined the relationship between elevation of mothers' residence in Colorado and odds of admission to a NICU and odds of receiving assisted ventilation for six or more hours.

**Methods:** The study design was a retrospective cohort using Colorado births between 2007 and 2014 (N=431,178). Elevation of maternal residence, the outcome variable, was categorized as low altitude (elevation <7000ft; n=385,260) or high altitude (Elevation ≥7000ft; n=45,918). Logistic regression was used to test the relationship between elevation of maternal residence and admission to NICU and elevation of maternal residence and assisted ventilation for six or more hours.

**Results:** Approximately 50% of the mothers were aged between 20-29 years. Infants born to mothers who lived at or above 7000 feet were significantly more likely to be admitted to NICU than those born to mothers who lived below 7000 feet (aOR 1.12, 95% CI 1.07-1.17, p<0.00001). Infants born to mothers who lived at or above 7000 feet were less likely to receive assisted ventilation for six or more hours (aOR 0.96, 95% CI 0.85, 1.08) than those born to mothers who lived below 7000 feet; however, this difference was not statistically significant.

**Implications:** Infants born to Colorado women who live at higher elevations are more likely to be admitted to NICU than infants born to mothers who live at lower elevations. The need for receiving assisted ventilation for six or more hours was not related to the elevation of maternal residence in this study.



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# PERINATAL ISSUES FOR PARENTS AND BABIES

## Mothers' Choice of Music and Pain Responses in Hospitalized Preterm Infants

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**Aim:** Music stimulation during painful procedures in preterm infants has been shown to have some benefits with inconsistent results. This study aimed to assess the effects of music listened to by mothers prenatally on pain, physiological and behavioral parameters, of stable preterm infants during a heel stick procedure.

**Methods:** Forty-two preterm infants (mean gestational age  $31.8 \pm 2.79$  weeks) were exposed to three conditions applied randomly, music listened to by mothers prenatally (mothers' music), recorded lullabies and no music, before, during, and after a heel stick. Pain responses using Neonatal Pain, Agitation and Sedation Scale (N-PASS), physiological and behavioral responses were recorded by a nurse blinded to the condition.

**Results:** N-PASS pain scores were lowest during mothers' music condition, with a mean 1.40 ( $\pm 1.28$ ), compared to 2.33 ( $\pm 1.64$ ) for the control and 1.62 ( $\pm 2.27$ ) for the recorded lullaby conditions,  $F(3/121) = 4.86$   $p = 0.009$ . Physiological parameters were not significantly different between conditions. During mothers' music condition, infants spent more time in quiet alert state and had significant decrease in their respiratory rates.

**Conclusions:** Music listened to prenatally may be more beneficial for preterm infants than any other music type as it may decrease pain and improve behavioral states during a heel stick.

# PERINATAL ISSUES FOR PARENTS AND BABIES

## Factors Influencing Paternal Involvement in the Neonatal Intensive Care Unit

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*Mary Dietrich, PhD, Professor<sup>2</sup>*

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**Aim:** The aim of this study was to explore and describe factors which influence father involvement in the Neonatal Intensive Care Unit (NICU) using the Heuristic Model of the Dynamic of Parental Behavior and Influence on Children over Time.

**Background and Rationale:** Father involvement research has shown that fatherhood is important to the outcomes of children. There have been few studies involving fathers of infants and even fewer with fathers in the NICU. Father involvement has three components; direct interaction, availability, and responsibility. Previous research has shown that children with involved fathers have lower rates of teenage delinquency and pregnancy, improved academic outcomes, and improvements in major health determinants.

**Methods:** This study used a descriptive design and mixed-methods to explore father involvement and factors which may be related to father involvement in the NICU. Fathers (N=80) at a 97-bed NICU were asked to complete an investigator-designed survey which asked about the previous two weeks of involvement with their hospitalized infants and factors which may have affected that involvement. This survey included questions obtained from peer-reviewed published surveys and reliable and valid instruments, utilized with author permission. The independent variables were factors of involvement based on a model which had been studied previously with non-hospitalized infants and children and were applied in this study with infants in the neonatal intensive care unit. The dependent variables, which were found in qualitative studies to be important to father/infant interaction and reflected the three component model of father involvement, included visitation, kangaroo care, bathing, and an overall involvement score.

**Results:** Eighty fathers completed the survey. Age ranged between 20 and 53 with 43% first time fathers. Fathers who were more involved were younger ( $p = 0.042$ ) and married or living with the mother ( $p = -0.019$ ). Fathers of multiples ( $p = 0.011$ ) and fathers who participated in kangaroo care ( $p < 0.001$ ) were more likely to have a higher involvement score. Fathers of multiples were also more likely to perform kangaroo care ( $p = 0.010$ ). Fathers who performed kangaroo care were more confident ( $p = 0.005$ ). Fathers who bathed their infants visited more often ( $p = 0.016$ ) and were more likely to be involved with their infants ( $p = 0.025$ ). Bathing was more likely to be performed if the father had attended the delivery ( $p = 0.006$ ). Visitation declined with increasing age of the infant ( $p = 0.025$ ), length of time in Level II status ( $p = 0.048$ ), and with increasing number of children in the family ( $p = 0.001$ ). Open-ended questions and content analysis showed that most fathers indicated facilitators to their involvement included the healthcare team and education about their infants. Barriers included work, access to their infant, nurses, lack of knowledge, other children, and hospital logistics.

**Implications:** Results can help nurses identify fathers at risk for decreased involvement with their infants and facilitate father/infant interaction. Findings guide institutional policy development for supporting father involvement and provide the basis for longitudinal research to determine if father involvement in the NICU has an effect on long-term outcomes.

**Abstracts of Podium Presentations**

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**PROMOTING A HEALTHY NURSING  
WORKFORCE**

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VACCINE INDUCED SEROPROTECTION  
AGAINST HEPATITIS B IN BSN STUDENTS

*Julie Kientz Elting*

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EXAMINING THE ROLE OF EMPOWERMENT  
IN NURSES' PERCEIVED HORIZONTAL VIOLENCE

*Nicole Mahr, Tae Youn Kim*

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HEALTH PROMOTING BEHAVIORS IN A  
COMMUNITY SAMPLE OF REGISTERED NURSES

*Kathleen Gilchrist, Cherie Rector*

# PROMOTING A HEALTHY NURSING WORKFORCE

## Vaccine Induced Seroprotection against Hepatitis B in BSN Students

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**Objectives:** Participants will be able to 1) recognize variances in hepatitis B antibody persistence in young adults immunized as infants and 2) integrate research results and CDC recommendations regarding student/employee hepatitis B protection into their organizational policies.

**Purpose:** Identify the number of nursing students in the BSN program fully immunized against hepatitis B during infancy (< 1 year of age) but at matriculation have hepatitis B surface antibody (anti-HBs) below 10 mIU/mL (CDC).

**Background:** In the 1990s a US national public health effort advocated the routine hepatitis B vaccination of all infants and ‘catch-up’ vaccination of children to create an immune adult population. However, it is documented that persistence of hepatitis B surface antibody (anti-HBs) created by the vaccine decreases over time. According to the CDC, approximately 84% of young adults who were immunized as infants have anti-HBs <10 mIU/mL, the recognized threshold for immunity. Currently the CDC recommends that healthcare students and employees immunized as infants receive serological testing to document hepatitis B immunity but institutions may continue to accept immunization records as evidence. Without a positive titer students and employees may be at risk of contracting hepatitis B through clinical/occupational exposure.

**Methods:** This was a non-experimental, descriptive study. Secondary data from 241 BSN student health records (graduation cohorts from 2016-2019) were reviewed for timing of three-shot hepatitis B immunization series and the results of hepatitis B surface antibody (anti-HBs) serological testing performed at matriculation.

**Results:** Of the 241 students, 92 met inclusion criteria with documentation of the three shot hepatitis B immunization series received under 1 year of age. Of the 92 students, 79 (85.9%) had negative hepatitis B surface antibody titers (anti-HBs < 10 mIU/mL) at matriculation.

**Implications for Nursing:** The results from this study are consistent with data cited by the CDC in their recommendations for evaluating hepatitis B protection in healthcare workers immunized as infants. Documentation of the three shot hepatitis B series does not provide adequate proof of immunity and serological testing should be completed. As more millennials enter the workforce, nursing programs and healthcare organizations should ensure policies are in effect that protect students and employees if exposed to hepatitis B in the occupational setting.

# PROMOTING A HEALTHY NURSING WORKFORCE

## Examining the Role of Empowerment in Nurses' Perceived Horizontal Violence

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**Purposes/Aims:** The purpose of this study was to examine the role of empowerment in nurses' perceptions regarding HV they experienced in an acute care setting.

**Rationale/Conceptual Basis/Background:** The Institute of Medicine estimates nearly 70% of medical errors are caused by insufficient communication. Work environments that support a culture of mutual respect and collaboration promote successful communication and prevent errors by allowing employees to feel safe voicing concerns or requesting help. Horizontal violence (HV), defined as harmful peer-to-peer behavior that devalues worth of recipients, threatens patient safety by obstructing collaborative relationships and communication among nurses. While multiple factors could contribute to nurses' perceived HV at work, one explanation is oppression due to their work in hierarchical environments where they are responsible for patient outcomes but have little control over the policies that affect care delivery. Empowerment, or autonomy, may be inversely related to HV. Empowered nurses use their knowledge and expertise to make decisions about their work. Empowerment is shown to increase professionalism in the face of challenging situations. Although oppression and HV have been studied among nurses, little is known about the effect of empowerment on nurses' perceived HV at work.

**Methods:** A cross-sectional survey was used to collect data from a convenience sample of 84 nurses employed at a rural hospital in Northern California. A 64-question, paper-based questionnaire measured nurses' personal characteristics, their beliefs and behaviors consistent with oppression (measured by the Nurse Workplace Scale), access to resources that empowered them in their workplace (measured by the Conditions for Workplace Effectiveness Questionnaire-II), and their perceived HV (measured by the Negative Acts Questionnaire). Personal characteristics included age, sex, race/ethnicity, level of education, and clinical specialty.

Multivariate regression analyses examined the relationship between empowerment and perceived HV while controlling participants' personal characteristics and oppression. Statistical analyses were completed using SAS® software v9.3. Significance was set at  $p < .05$ .

**Results:** Of 65 respondents (84.5% response rate), the majority (88%) experienced HV at least once in the last 6 months, and 10.7% experienced HV weekly or daily. Nurses were moderately empowered (means score 3.99 out of five). When entering study constructs into a regression model, advanced degrees ( $p < .01$ ), employment in non-critical care (e.g., medical/surgical units) ( $p < .001$ ), and perceived workplace empowerment ( $p < .01$ ) were negatively associated with perceived HV prevalence among nurses. This final model explained 61% of variation in perceived HV among the nurses ( $p < .0001$ ) and workplace empowerment alone accounted for 13% of variation in perceived HV. It is important to note that workplace empowerment attenuated the effect of oppression on perceived HV among participants, making the nurses' perceived oppression insignificant in explaining perceived HV variation. When examining empowerment subscales, participants who reported more access to support and resources perceived less HV at work ( $p < .05$ ).

**Implications:** This study provides beginning empirical evidence that workplace empowerment might mitigate the effect of oppression on HV perceived by nurses. Findings suggest the need to focus on nurse involvement in policy and decision-making, supporting structures that promote healthy work environments, and empowering nurses' active engagement in changing workplace culture.

# PROMOTING A HEALTHY NURSING WORKFORCE

## Health Promoting Behaviors in a Community Sample of Registered Nurses

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**Purpose:** Investigate the health-promoting behaviors of RN's.

**Background:** Pender's mid-range Health Promotion Model was used as the theoretical foundation for the research. It encompasses individual health perceptions and modifying factors, along with barriers and cues that trigger actions to promote or protect health. Health promotion research has largely been conducted on patient populations (e.g., post-partum depression, multiple sclerosis) or community-based groups (e.g., teachers, workers). Nursing students have been researched, but little is known about the health promoting behaviors of practicing nurses.

**Sample:** Non-randomized, convenience sample; a total of 251 RNs. Data was gathered in 2016 from a community sample of working and retired RNs residing in Central California.

**Methodology:** Exploratory, quantitative, cross-sectional design using the Health-Promoting Lifestyle Profile II (HPLP II), a 52-item tool that measures health-promoting behaviors. Responses are on a 4-point Likert scale: never, sometimes, often, and routinely ( $\alpha = .943$ ). The HPLP II has a total score and six subscale scores: health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management. Demographic information included age, ethnicity, educational level, years in nursing, height and weight. IRB approval was granted. RN's were recruited at a nurse practitioner meeting, a nurse leader meeting, and through a nursing blog. A link to SurveyMonkey© was provided.

**Results:** RNs were 97.2% female. The mean age was 43.48 yrs. ( $r = 22-84$  yrs.,  $sd = 11.88$ ). Mean years worked as a nurse were 14.80 ( $r = 0-45$ ,  $sd = 12.38$ ). Ethnicity was 57.8% White, 17.2% Black, 14.1% Asian, 4.7% Hispanic, 3.1% Native American, and 3.1% Mixed Race. Education was reported at 51% with a BSN, 28.7% with ADN, and 16.7% had some type of master's degree. Only 37.8% reported some type of certification. Over half noted they were overweight and 15.5% viewed themselves as obese. Mean weight was 169.88 pounds ( $r = 99-390$  lbs.,  $sd = 49.16$ ). Mean height was 64.64 inches ( $r = 58-71$  in.,  $sd = 1.95$ ).

**Total HPLPII mean score was 2.54** ( $sd = .38$ ); means for the six subscales were: Health Responsibility (2.25), Physical Activity (2.24), Nutrition (2.57), Spiritual Growth (2.91), Interpersonal Relations (2.88) and Stress Management (2.31).

**Discussion & Implications:** In a recent study (2012) comparing PHNs with ICU nurses, statistically higher scores were found for PHNs on: Total HPLPII ( $p = .003$ ), Health Responsibility ( $p = .00$ ), Nutrition ( $p = .001$ ), Spiritual Growth ( $p = .004$ ), Interpersonal Relations ( $p = .02$ ), and Stress Management ( $p = .003$ ). PHNs were significantly older (49.1 vs. 36.3,  $p = .000$ ). When comparing total mean score for these RNs (2.54) to earlier research with ICU nurses (2.68), this result is lower. A renewed focus on health promotion is seen in health care and nursing. RNs should incorporate health promotion into their patient teaching. RNs have multiple roles and stressors, including work and family, which can influence their health behaviors. Some research has shown promise in improving HPLP II scores after planned interventions among working nurses and nursing students (e.g., incorporating exercise and meal planning classes at the work place and schools). Additional research should be conducted to promote RN health and incorporate methods and topics that work best.

**Abstracts of Podium Presentations**

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**PSYCHOSOCAL ISSUES IN WOMEN'S  
REPRODUCTIVE HEALTH CARE**

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**WHAT IS A SUPPORTIVE MIDWIFERY PRACTICE  
CLIMATE: A CONCEPT ANALYSIS**

*E. Brie Thumm*

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**FINDING THE BEST APPROACH TO  
ADDRESSING PERINATAL DEPRESSION**

*Gwen Latendresse, Beverly Patchell, Ann Hutton, ElLois Bailey, Hannah Murphy*

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**A LONGITUDINAL STUDY OF ANTENATAL DEPRESSION  
IN LATE ADOLESCENT AND YOUNG ADULT WOMEN**

*Rosamar Torres, Caryl Gay, Kathryn A. Lee*

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**PREVALENCE AND PREDICTORS OF POSTPARTUM  
DEPRESSION AND THE USE OF MENTAL HEALTH SERVICE**

*Jolene Smeltzer, Onike Williams, Vincent Ofori, Magda Shaheen,  
Dulcie Kermah, Shirley Evers-Manly*

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**TESTING OF BIOMETRIC MEASURES FOR A  
PROMOTORA-TO-MOTHER MI INTERVENTION**

*Trina M. Aguirre, Ann E. Koehler, Susan L. Wilhelm*

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**ANTEPARTUM SERVICES PREVENT SYMPTOMS OF  
POSTPARTUM DEPRESSION IN SOME AT-RISK WOMEN**

*Sharon L. Ruyak, Blake Boursaw, Angelina Flores-Montoya*



# PSYCHOSOCIAL ISSUES IN WOMEN'S REPRODUCTIVE HEALTH CARE

## What Is a Supportive Midwifery Practice Climate: A Concept Analysis

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**Purposes/Aims:** Maternity care in the U.S. is riddled with outcomes inconsistent with the spending and a workforce shortage. Nursing researchers have empirically demonstrated relationships between a supportive practice climate, quality of care, and workforce turnover. Despite these findings within nursing, no researchers have investigated the practice environments of certified nurse-midwives (CNMs) in the U.S. Investigating the wide-spread implications of midwifery practice climate requires a clear definition of this deceptively complicated concept in order that it can be measured and relationships and changes detected. The aim of this presentation, therefore, was to identify potentially generalizable characteristics of a “supportive midwifery practice environment” based upon theoretical and empirical literature prior to instrument development.

**Description/Definition of Theory/Concept:** “Supportive midwifery practice climate,” in its most basic definition, refers to the perceptions of midwives of the policies and/or procedures in their work places that provide strength by assistance, belief, or tolerance. The attributes of a supportive practice climate are consistent with the theories of the organization of professionals, which posit there are universal elements of work environments across professions conducive to effective organization of professionals. However, in the application of the definition to scale development, the concept becomes more complex. While inherent in the concept is the perception of midwives, the definitions of “supportive” and “midwifery practice” vary significantly within the profession because of the unique position that midwives occupy in the U.S. healthcare system practicing as independent clinicians with differing points of entry into the system. This analysis distills the commonalities across the CNM profession into attributes and practical empirical referents.

**Internal Consistency of the Theory/Concept:** This concept analysis utilized a modified Walker and Avant’s methodology. Because the aim of the concept analysis was instrument development, I focused on defining the components of the concept, identifying defining attributes, and determining empirical referents. A review of the relevant literature revealed an overlap between the organizational theory literature and the empirical literature regarding individual elements of midwifery practice climate; however the domestic CNM literature lacked investigation of the defined molar practice climate.

**Logic Linking Theory/Concept to Practice/Research Problem:** Nursing researchers and administrators have demonstrated the practical implications for patients, providers, and the healthcare system of a supportive practice environment. The evidence is strong enough that U.S. hospitals have invested billions of dollars in Magnet programs in order to systematize supportive work environments, including collaborative relationships, career development, autonomy, and effective leadership, which has led to cost savings. Midwives have the opportunity to leverage the experience of nursing to evidence-based create practice climates that maintain and grow the CNM workforce and provide quality maternity care.

**Conclusions, Including Utility of Theory/Concept:** While many of the elements of a supportive practice climate in the organizational theory literature are relevant to CNMs, midwives lack a universal definition of “supportive” and “practice climate.” Additionally, midwives have a unique climate element specifically tied to relationships with women/clients, which is not identified in the theoretical literature. A workforce level instrument measuring CNM practice climate must account for individual variations in these definitions in order to maximize utility and obtain profession-level findings.

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### Reference:

Renfrew, M. J., McFadden, A., Bastos, M. H., Campbell, J., Channon, A. A., Cheung, N. F., . . . Declercq, E. (2014). Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care. *Lancet*. doi:10.1016/S0140-6736(14)60789-3

# PSYCHOSOCIAL ISSUES IN WOMEN'S REPRODUCTIVE HEALTH CARE

## Finding the Best Approach to Addressing Perinatal Depression

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*Ann Hutton, PhD, APRN, Assistant Professor (Clinical)*  
*EILois Bailey, DNP, APRN, PMHNP-BC, Instructor (Clinical)*  
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**Purpose/Aims:** The overall purpose of a series of 4 pilot studies was to establish the most feasible and acceptable approach to screening and treatment of perinatal depression (PD). Specific aims were to evaluate the feasibility of using; (1) electronic and online approaches to universal screening for PD; (2) electronic devices, and online and videoconference platforms for PD intervention, and; (3) community engagement in the design and implementation of screening and intervention.

**Background:** Perinatal depression is associated with poor pregnancy outcomes and suboptimal childhood development, prompting the U.S. Preventive Services Task Force to advise universal depression screening of all pregnant and postpartum women and the use of effective therapies when depression is identified. Many women are reluctant to take antidepressants. Mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive behavioral therapy (MBCBT) are effective nonpharmacological approaches to preventing and treating PD. However, these approaches are often unavailable or inaccessible to most women, particularly in rural settings.

**Methods:** After IRB approval, a series of 4 pilot studies were conducted among pregnant women. All included screening for detection of PD. Two pilot studies (n = 20) implemented an 8-week in-person group MBSR program. Two pilot studies (n = 24) implemented an 8-week group MBCBT program using distance technology for remote attendance (i.e. videoconferencing). Participant input contributed to the design and implementation of each subsequent pilot study, as did a community advisory board for pilot #4. One MBSR pilot study was conducted as part of group prenatal care for pregnant teens and included adjunct use of mp3 players and social media.

**Results:** Universal screening for PD was successfully accomplished using email or electronic tablets. Very few women declined to complete screening. In person MBSR was very well attended by pregnant teens, as part of their group prenatal care. Teens expressed satisfaction with MBSR and liked using the mp3 practice recordings. Attendance at in-person MBSR was poorly attended when not part of the prenatal care setting. Inconvenience and transportation were the two barriers to attendance most cited by study participants. However, participants who did attend expressed high value in the learned MBSR skills. Participants in the MBCBT were excited about the convenience and accessibility of attending remotely, i.e. from home using a computer, laptop or smart phone. However, frustration with technology glitches in pilot #3 resulted in low attendance. Significant input from participants of the first 3 pilot studies informed the design and implementation of the 4th and final pilot study. For pilot #4, attendance was high, participants were enthusiastic, and pregnant women in rural communities were very appreciative of the opportunity.

**Implications:** It is essential to engage communities in the design and evaluation of PD screening and intervention approaches. Women value convenient, easily accessible programs that are either incorporated into their prenatal care visits or accessed remotely when a problem-free technology is used. Nurses can use the results of these pilot studies to design and implement interventions with the potential to reduce the negative impact of PD.

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**Funding:** Supported by University of Utah College of Nursing Research Committee Grant and the Burton Foundation Grant.

# PSYCHOSOCIAL ISSUES IN WOMEN'S REPRODUCTIVE HEALTH CARE

## A Longitudinal Study of Antenatal Depression in Late Adolescent and Young Adult Women

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**Purpose:** The purpose of this study was to compare antenatal depression scores in late adolescents (18 – 20 year olds) and young adults (21 – 24 year olds) and to examine how these scores change during the first 3 months postpartum.

**Background:** Research suggests that pregnant adolescents may be at greater risk of developing antenatal depression due to unstable friendships, relationships, lower income and lower educational attainment. However, little is known about the prevalence and trajectory of antenatal depression in adolescents during pregnancy and postpartum. Furthermore, there are no studies on the prevalence and course of antenatal depression in adolescents compared with young adult women.

**Methods:** This analysis is part of two larger longitudinal clinical trials designed to improve maternal sleep in the postpartum period. Sixty-three ethnically diverse women between the ages of 18-24, recruited during their 3rd trimester, were selected as a subgroup for this analysis. There were 26 participants in the late adolescent group (18-20) and 37 participants in the young adult group (21-24). Women were eligible for the study if they were over the age of 18, expecting their first child, had no previous history of a diagnosed mental health condition and were English literate. Antenatal depression was measured with the Center for Epidemiologic Studies Depression Scale (CES-D) during the third trimester and at 1, 2 and 3 months postpartum. A repeated measures ANOVA was used to examine how antenatal depression scores changed over time for both groups.

**Results:** Mean depression scores were significantly higher for the late adolescent group compared to the young adult group at all 4 time points ( $F(1, 61) = 8.02, p = 0.006$ , partial  $\eta^2 = 0.116$ ). Scores were lower postpartum compared to antepartum, however, there was no significant within-subject change over time.

**Conclusions:** To our knowledge this is the first study comparing the prevalence and direction of depressive symptoms in late adolescent and young adult pregnancy. Results indicate that late adolescents have higher risk of antenatal depression compared to young adult women. The increased prevalence is also consistent over time. Further research is needed to understand the antecedents and correlates of antenatal depression in adolescent mothers.

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# PSYCHOSOCIAL ISSUES IN WOMEN'S REPRODUCTIVE HEALTH CARE

## Prevalence and Predictors of Postpartum Depression and the Use of Mental Health Service

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**Purposes/Aims:** To examine the racial and income variation of the prevalence of PPD and the use of mental health services as well as factors associated with PPD and the use of mental health services among women in the postpartum period in United States.

**Background:** Depression has a profound impact on mothers during the postpartum period. To alleviate the negative effects of PPD, it is critical to identify the availability as well as the use of mental health services for women with PPD. While past studies have identified broad categories of factors contributing to postpartum depression (PPD), little is reported on the specific determinants of PPD and the use of mental health services amongst culturally and ethnically diverse women.

**Methods:** Data from the National Health and Nutrition Examination Survey (NHANES) years 2007-2014 were analyzed. We identified 345 women  $\geq 20$  years in the postpartum period (i.e., up to 12 months post a live birth). Women who scored  $\geq 10$  on Patient Health Questionnaire (PHQ-9) had PPD. We analyzed demographics, smoking, alcohol, obesity, physical activity, insurance, source of care, and visit mental health professional variables using Chi-square test and multiple logistic regression using SAS9.3 with weight and design and  $p < 0.05$  indicated statistical significance.

**Results:** Of 345 women, 22.7% were Hispanic, 12.9% were African American, 7.7% were 'Others', 57.4% were poor (PIR $<2$ ), and 72.6% had PPD. 'Others' (80%) and Black (73%) had the highest prevalence of PPD and low income group had higher PPD (79%) than high-income group (69%) but were not statistically significant. PPD varied significantly by age, smoking, sleep hours/night, and health status ( $p < 0.05$ ). Those 26-30 years old had the highest prevalence (81.6%) of PPD relative to other groups. In the adjusted model controlling for confounders, sleeping  $< 6$  hours/night had 2.7 times higher adjusted odds of depression relative to sleeping  $\geq 6$  hours ( $p = 0.008$ ). Those reported good health relative to those reported very good/excellent health, had 2.7 times higher adjusted odds of depression ( $p = 0.008$ ).

The use of mental health service was not statistically different in PPD (4%) and no PPD groups (2%) and there was no racial or income variation ( $p > 0.05$ ) in the unadjusted analysis. In the adjusted model controlling for confounders, income was a significant predictor for the use of mental health services (adjusted odds ratio=5.4, 95% confidence interval=1.1-25.3,  $p = 0.03$ ).

**Conclusions/Implications:** There was no racial or income variation in the prevalence of PPD among women in the postpartum period. Sleep hours and self-perceived health status were the independent predictors of PPD. The use of mental health service was comparable in the PPD and non PPD groups. Income was the predictor of using the mental health service.

There is a need for better patient education and to include screening as part of prenatal care as well as promotion of the importance of healthy sleep. Culturally and linguistically appropriate health promotion intervention that involves community and providers to increase awareness about PPD and the available mental health services and promote healthy lifestyle and healthy sleep among in culturally and ethnically diverse women are needed.

**Funding:** This abstract was supported by: NIH/NIMHD #U54 MD007598 and NIH/NIMHD #S21 MD000103.

# PSYCHOSOCIAL ISSUES IN WOMEN'S REPRODUCTIVE HEALTH CARE

## Testing of Bio-Metric Measures for a Promotora-to-Mother MI Intervention

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**Purpose:** The purpose of this study was to test the feasibility of using biometric measures of bio-impedance analysis, BMI, blood pressure, anthropometrics and lipid-glucose levels (fingerstick) in Mexican-American 2-5 yr old children.

**Conceptual Basis:** We used the Public Health Model in which a nurse identifies characteristics of the population in order to better serve them.

**Methods:** Methods included in this study were having 4 bilingual/bicultural promotoras who were familiar with the 50 mother/child dyads accompany them through the measures, conducting the measures in a culturally appropriate facility within close proximity to their residences, using incentives to encourage the children to complete the measures, and training the research assistants in conducting biometric measures to insure accuracy and consistency. This study was in preparation for a larger scale, fully powered promotora-to-mother study.

**Results:** Results of the study showed that approximately 90% of the children allowed research assistants to complete all measures on them. The final 10 participants allowed repeated biometric measures to be completed at baseline, one month, two months and six months with the exception of the fingerstick for lipids and glucose measures. We also identified that child care and having a child play area was essential to this process as well as the incentives for mothers and children.

**Implications:** The biometrics pilot study added value to the behavioral knowledge gained from a previous study and prepared us for a larger study and determined the feasibility of using such measures in this population as well as the time required to do so.

# PSYCHOSOCIAL ISSUES IN WOMEN'S REPRODUCTIVE HEALTH CARE

## Antepartum Services Prevent Symptoms of Postpartum Depression in Some At-Risk Women

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**Purpose:** The purpose of this study was to examine which psychosocial risk factors are the strongest predictors of symptoms of PPD and were prenatal preventative services, like home visits from a health care provider, associated with decreased reports of symptoms of postpartum depression

**Rationale/Background:** Postpartum depression (PPD) is the most common complication of childbirth. Nationally, approximately 15-20% of women experience depressive symptoms in the postpartum period. It has long been appreciated that PPD has far-reaching consequences extending beyond the maternal-infant dyad to the family unit, the community, and society at large constituting a significant public health problem. In the face of this public health burden, alarmingly, most women with symptoms of postpartum depression are under-identified and do not receive treatment.

**Methods:** This study used survey data from the 2012-13 Pregnancy Risk Assessment Monitory Systems (PRAMS). The PRAMS data used in this study provided a national sample with more than 30,000 available cases from 41 states. To account for unequal probabilities of selection, PRAMS-produced survey weights were incorporated in all percentage estimates, all chi-squared tests for association between categorical predictors, and an overall logistic regression model for maternal characteristics as predictors of experiencing significant PPD symptoms. Propensity score analysis, a flexible set of techniques designed to address confounding in observational studies, was used to assess the extent of the impact of interventions on PPD.

**Results:** Individual stressors associated with the highest rates of PPD included homelessness (40%), going to jail or having a husband or partner go to jail (37%), a husband or partner not wanting the pregnancy (36%), and increased arguing with a husband or partner (36%). Stressors (odds ratio (OR) = 2.6 for 3-5, OR = 3.1 for 6 or more), physical abuse (OR = 1.8), and prior diagnosis of depression (OR = 3.0) continued to be strongly associated with PPD in the logistic regression model. Using propensity score analysis, the average treatment effect on PPD of home visiting either during or after pregnancy was nonsignificant. However, women who were in the group most likely to receive a home visit to help prepare for a baby during pregnancy and who received such a home visit showed nearly 40% lower odds (OR = 0.6) of experiencing significant PPD symptoms than women who were also in the group most likely to receive a home visit to help prepare for a baby during pregnancy and who did **not** receive a home visit.

**Implications:** The findings from this highlight the large impact that home-visiting during pregnancy can have on the odds of at-risk women developing postpartum depression. These findings also emphasize the need for a continued paradigm shift in perinatal care from reactionary care to preventative care with risk screening for PPD beginning in the first trimester of pregnancy to facilitate referral to appropriate preventative services. Future research is indicated to assess if targeted interventions during these home visits, such as cognitive behavioral therapy, can enhance effectiveness by mitigating psychosocial stress in pregnancy to prevent PPD.



**Abstracts of Podium Presentations**

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**SCREENING, HEALTH PROMOTION, AND  
BEHAVIORS OF DIVERSE GROUPS**

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**SELF-RATED HEALTH OF ARAB IMMIGRANTS:  
A SYSTEMATIC REVIEW**

*Maha Alkaid, Jyu-Lin Chen*

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**RISK FACTORS FOR NON-COMMUNICABLE  
DISEASES IN VELLORE, INDIA**

*Rajeswari Siva, Jasmine Anand, Selva Titus Chacko, Vinitha Ravindran*

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**AN INTEGRATIVE REVIEW: EFFECT OF DIABETES  
SELF-MANAGEMENT EDUCATION IN LATINO ADULTS**

*Janet Hildebrand*

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**COLORECTAL CANCER SCREENING AND PREVENTIVE  
HEALTH BEHAVIORS AMONG THAI AMERICANS**

*Eunice Lee, Bulaporn Natipagon-Shah, Samantha Sangsanoi-Terkchareon*

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**EXPERIENCE OF CANCER SCREENING AND HEALTHCARE  
SERVICE UTILIZATION OF KOREAN IMMIGRANT**

*Moonju Lee*



# SCREENING, HEALTH PROMOTION, AND BEHAVIORS OF DIVERSE GROUPS

## Self-Rated Health of Arab Immigrants: A Systematic Review

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**Purpose:** A systematic review of the literature was conducted to better understand self-rated health (SRH) of Arab immigrants in the United States (US) and factors associated with SRH including ethnicity, acculturation, and socioeconomic conditions.

**Background:** Arab immigrants are one of the fastest growing populations in the US, with a population growth rate of 47% over the past 10 years. However, Arab immigrants face many challenges and health issues including poor health behaviors and outcomes, such as higher rates of smoking, anxiety, depression, and chronic diseases, such as diabetes, hypertension, ischemic heart disease and cancer. Arab Americans also reported low SRH. SRH reflects the perceived health status of individuals, and has been considered a strong predictor of mortality and morbidity. There is limited research on SRH of Arab immigrants, and little is known about the relationship between their SRH and the factors of acculturation, socioeconomic status and ethnicity.

**Methods:** This systematic review was conducted and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. A search was conducted on seven databases with manual search of relevant citations to find quantitative research on SRH of Arab immigrants in the US. Inclusion criteria included peer-reviewed studies, published in English, and conducted on adult participants from Arab or Middle Eastern countries. Methodology rigor of included studies was adapted from recent systematic review studies.

**Results:** The initial search generated a total of 290 papers in all the search databases. Six studies met the systematic review criteria. Two of these studies used nationally representative data. Based on the methodology rigor assessment, two studies had high quality scores, two studies had moderate quality scores, and two had low quality scores. The available evidence indicates that rates of fair/poor SRH among Arab immigrants in the US ranged between 4.66% and 41%. The rates of fair/poor SRH of Arab immigrants were not significantly different from U.S-born whites. However Arabic-speaking immigrants, women, older immigrants, and socioeconomically disadvantaged immigrants have the highest rates (27.47% and 41% in Detroit, and 26% in New York). The most significant predictors of fair/poor SRH of Arab immigrants are three proxies of acculturation (language, nativity, and citizenship). Unlike language and nativity, citizenship was associated with poorer SRH, while length of residence in the US was not associated with SRH of Arab immigrants.

**Implications:** Increasing numbers of Arab immigrants in the US requires more research on their health status and determinants. Outcomes in this review revealed big variations in the perceived health of Arab immigrants. As SRH is associated with mortality and morbidity, health care providers need to assess patient's SRH and identify barriers to optimal health and health practices. Future studies should examine other possible factors related to SRH and longitudinal research studies to investigate change of SRH.

# SCREENING, HEALTH PROMOTION, AND BEHAVIORS OF DIVERSE GROUPS

## Risk Factors for Non-Communicable Diseases in Vellore, India

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**Aims:** To assess the risk factors for non-communicable diseases among the selected rural, urban and slum areas of Vellore, India.

To find the association between the selected socioeconomic variables and the risk factors of non-communicable diseases.

**Background:** Many developing countries, such as India are experiencing heavy disease burden from communicable diseases and non-communicable diseases. Industrialization, migration, urbanization and less agricultural work have brought in a lot of changes in India. With these changes, life styles of people have also changed which have resulted in increases in non-communicable diseases. It is estimated by 2020 non-communicable diseases will account for 69% of all deaths. For example, the prevalence of Diabetes will almost double in the next 25 years and at least 75% of those affected will be young adult population of lower socioeconomic status. The World Health Report stated that unhealthy diets and physical inactivity are among some of the leading causes of non-communicable diseases. Yet, there is very limited data on risk factors for non-communicable diseases known in Vellore, India.

**Methods:** This cross sectional descriptive study was conducted in rural, urban and slum areas of Vellore, India. The study participants included individuals in the age group of 18 to 58 years and permanent resident of selected area. Data was collected from participants in their home setting. We used the World Health Organization STEP wise approach for collecting, analyzing and monitoring trends for risk factors. For STEP 1, we included collection of information on socio demographic variables and behavioral risk factors i.e. tobacco use, alcohol use, physical activity, diet and related factors using a questionnaire. For STEP 2, we measured biophysical clinical measurements such as weight, height, waist circumference and blood pressure. For STEP 3, we acquired biochemical measurement of blood glucose. Data was analysed using SPSS. Analyses included descriptive statistics and multivariable logistic regression.

**Results:** A total of 450 people participated (150 each in urban, slum and rural). Majority of most of them in all three areas had less than 10 years of schooling (urban 92.7%; slum-71.3% and rural-88%). On the whole 6.7% were unemployed, 37.6% were homemakers and 45.7% were employed urban area had more homemakers (45.3%) Most of the samples were non vegetarians.

However, less than five serving fruits and vegetables per week were reported by 83% of participants. No participants reported being physically inactive. However, among the males only 22% had vigorous physical activity and the females 94% engaged in moderate physical activity.

46% of the participants were overweight and 29% males and 25% of females had blood glucose levels more than 126mg/dl. High blood pressure ( $\geq 140/90$ mm of Hg) was observed in 24% of males and 11% of females. More males (46.7%) from slum area had increased blood pressure.

For smoking, none of the females were smokers.

**Implications:** Quantifying the burden of risk factors of non communicable diseases in Vellore, India enables the community health nurses to plan, implement and evaluate cost effective health promotional community based interventions to address non-Communicable Diseases.

# SCREENING, HEALTH PROMOTION, AND BEHAVIORS OF DIVERSE GROUPS

## An Integrative Review: Effect of Diabetes Self-Management Education in Latino Adults

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**Purpose/Aim:** The primary aim of this integrative review is to examine the effectiveness of providing diabetes self-management education (DSME) to adult Latino patients with type 2 diabetes mellitus (T2DM) to improve HbA1c. Secondary aims are to examine the effect of DSME on self-management behaviors and psychological outcomes.

**Background:** Diabetes mellitus is a chronic, complex multisystem endocrine disease that continues to escalate in the minority and socioeconomically disadvantaged groups. Latinos are twice as likely to be diagnosed with diabetes, less likely to meet HgA1c targets, develop higher rates of end-stage renal disease and experience a higher rate of mortality. Language barriers and cultural beliefs and practices intensify the obstacles to glycemic control in the Latino population. Studies have shown that DSME is an essential component to incorporate culturally appropriate healthy lifestyles to control this chronic disease.

**Methods:** Publications were reviewed based on the following criteria: (a) randomized controlled trials or quasi-experimental studies with a comparison group that were written in English from January, 1997 to September, 2016; (b) Latinos  $\geq 18$  years of age diagnosed with T2DM, studies with mixed ethnicities were excluded; (c) DSME program designating the interventionist type, and (d) clinical and psychological outcomes. Data extracted from the selected studies included: research design, demographics, type of interventionist – registered nurse, pharmacist, community health worker, promotoras, peer or lay leaders – clinical outcomes (HbA1c), psychological and behavioral measurement instruments and outcomes, and risks for bias.

**Outcomes Documented:** A total of 26 articles were included for this study; two pairs of the studies included in this review reported on different variables. As a result, only 24 distinct studies were analyzed. Although the DSME curriculum varied across the studies, the programs covered the same topics for self-management. All, but three studies demonstrated improvement in HbA1c. However, the highest reduction in HbA1c was observed in those with higher baseline values and those with better adherence to study interventions. There were positive clinical and psychological effects regardless of the interventionist or the length of the intervention.

**Conclusions:** Latinos with T2DM are at increased risk for developing diabetes and experiencing debilitating complications. A culturally appropriate DSME course provides significant improvement in HbA1c that translates to the effects of some diabetes medications. Implementing robust DSME programs provide patients with diabetes the skills and knowledge to actively participate in the control of their disease.

# SCREENING, HEALTH PROMOTION, AND BEHAVIORS OF DIVERSE GROUPS

## Colorectal Cancer Screening and Preventive Health Behaviors among Thai Americans

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**Background:** In the past decade, the Thai American (TA) population in the United States (US) has increased by 58.08%, while colorectal cancer (CRC) death rates have gradually increased. However, very little is known about CRC screening among the TA population.

**Purpose/Objectives:** The purpose of this cross-sectional quantitative study was to (1) explore TAs' CRC screening beliefs, and behaviors, and (2) examine the relationship among socioeconomic status (age, religion, years of education), access to health care, spousal support, preventive behaviors, and CRC screening behaviors in the TA population.

**Methodology:** This study was driven by the health belief model supplemented by a cultural explanatory model. A purposive, convenient sample of self-identified TAs who were 50 years of age or older and resided in Southern California participated in the survey. The participants were recruited from Thai Buddhist temples, community agencies, and community events. Eligible participants who agreed to participate gave consent and answered questions to measure demographic variables and their knowledge, beliefs and behaviors related to CRC screening.

**Results:** A total of 138 TAs (49 male and 89 female) participated in the survey. The mean age of participants was 61. The majority of them were immigrants (98%) and Buddhist (98%), had lived in US more than 15 years (86%), and had health insurance (93%). About half of the sample had more than a high school education (47%). About three fourths of the participants (68%) had had CRC screening of some type (fecal occult blood test, colonoscopy, or sigmoidoscopy) and 54% of the participants were up to date on CRC screenings. Those with a primary physician and those who had had a screening without symptoms in the previous 2 years were more likely to have had a CRC screening ( $p = 0.01$ ). Having CRC-related knowledge and a higher level of perceived susceptibility, benefits, spousal support, and lower level of perceived barriers were also more likely to have had a CRC screening ( $p = 0.05$ ). Having CRC screening was positively related with measured blood pressure, blood sugar, and cholesterol within the previous year. TAs who lived in the US longer than 15 years (AOR = 26.7; CI = 1.3–532.6), who had greater perceived susceptibility of CRC (AOR = 2.2; CI = 1.0–4.7) and who had greater perceived self-efficacy to obtain CRC screening (OR = 1.2; CI = 1.0– 1.4) were more likely to have had CRC.

**Implications for Nursing:** Culture-specific health interventions targeting TAs who have lived in the US less than 15 years and who have less desirable CRC-related health beliefs and who are less likely to be getting preventive health services could be helpful in decreasing cancer disparities in the TA population.

# SCREENING, HEALTH PROMOTION, AND BEHAVIORS OF DIVERSE GROUPS

## Experience of Cancer Screening and Healthcare Service Utilization of Korean Immigrants

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**Background:** As one of the fastest growing ethnic minority groups in the United States (U. S.), Korean immigrants are an under-represented and under-studied ethnic group, with respect to health services, research, and policy. Although studies and data have reported their extremely low preventive care services utilization, such as cancer screening, compared to the general U. S. population, there are limited studies and factors influencing their health care behaviors have not been fully investigated. There is a need to explore cancer screening experience among Korean immigrants.

**Purposes:** The purposes of the study were to explore 1) Korean immigrants' cancer screening experience, 2) healthcare services utilization experiences in the U. S., and 3) facilitators of and barriers to cancer screening and healthcare services utilization in the U. S.

**Methods:** The Social Determinant of Health model is the conceptual framework guiding literature review, semi-structured interview guideline development, and study implementation. Qualitative method was employed and semi-structured, individual, in-depth interviews were conducted with 18 Korean immigrant men and women aged 51 to 68 in Texas. Data was analyzed using qualitative content analysis.

**Results:** Five themes emerged from the individual interviews: 1) reasons not using U. S. healthcare systems (inconvenient healthcare systems, lack of health insurance, finance, language/communication barriers, lack of knowledge for health insurance coverage, and alternative healthcare services in South Korea), 2) perceptions of preventive care and cancer screening (never thought about cancer screening and unnecessary if don't have symptoms), 3) lack of health care provider (HCP)'s recommendation (never received cancer screening recommendation and different HCP's communication style), 4) lack of knowledge for cancer screening guidelines, symptoms and causes of cancer, and 5) facilitators of decision making about cancer screening and treatment (HCP's recommendation, Korean media, and family/friends' experience).

**Implications:** Korean immigrants generally don't undergo cancer screenings regularly and underutilize U. S. healthcare systems for their preventive health management. The findings of this study provide important knowledge about cancer screening experience among Korean immigrants and a rationale for developing culturally tailored intervention programs based on perceptions, knowledge, and decision making about cancer screening to increase adherence of cancer screening and to reduce cancer health disparities among Korean immigrants.

## Abstracts of Podium Presentations

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### SOCIAL JUSTICE

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FRAILITY AMONG HOMELESS WOMEN WITH A  
HISTORY OF INCARCERATION AND DRUG USE

*Benissa E. Salem, Mary-Lynn Brecht*

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ESTABLISHING A COMPOSITE SCORE FOR  
SOCIOECONOMIC DISADVANTAGE IN MARYLAND

*Jamie L. Mignano*

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MOBILIZING COMMUNITY MEMBERS AS ACTIVE  
PARTNERS IN PARTICIPATORY RESEARCH

*Alice M. Tse, Kristine Qureshi*

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SOCIAL JUSTICE: ONGOING INCONSISTENCIES  
IN FOUNDATIONAL NURSING DOCUMENTS

*Claire P. Valderama-Wallace*

## SOCIAL JUSTICE

### Frailty among Homeless Women with a History of Incarceration and Drug Use

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**Purpose/Aims:** The purpose of this exploratory analysis was to assess correlates of physical, psychological and social frailty among formerly incarcerated, homeless women with a history of drug use.

**Background:** Women exiting jail and prison may be at greater risk for frailty given life events (*e.g. incarceration, violence, etc*) and behavioral lifestyle choices (*e.g. alcohol, drug use, addiction, etc*) as compared with community-dwelling populations. Frailty, defined as an accumulation of deficits in physical, psychological and social domains, is an area worthy of exploration among recently released, homeless women on parole or probation.

**Methods:** Guided by the Frailty Framework among Vulnerable Populations (FFVP), relationships were examined between frailty and individual, situational, health-related, and resource factors among formerly incarcerated, currently homeless women (N=130). A multivariable regression model was estimated for each frailty domain (*e.g. physical, psychological, social domain*).

**Results:** The average age was 38.89 years (SD 11.36, range 19-64); a little less than half of the sample (41%) was African-American. The multivariable regression models revealed that higher levels of *physical frailty* were significantly related to older age ( $p=0.003$ ), greater number of years homeless ( $p<0.001$ ), fewer number of times in prison ( $p=0.044$ ), greater number of prior violent offenses ( $p=0.011$ ), higher drug dependence score ( $p=0.028$ ), and lower tangible support ( $p=0.001$ ). Higher levels of *psychological frailty* were related to use of a greater number of drugs in the past six months ( $p=0.004$ ), greater depressive symptomology ( $p=0.020$ ), and higher levels of emotional regulation ( $p<0.001$ ). Higher levels of *social frailty* were related to use of a greater number of drugs ( $p=0.048$ ) and greater emotional regulation ( $p=0.002$ ) and showed a negative relationship with daily alcohol use ( $p=0.003$ ).

**Implications for Translation to Practice/Further Research:** These findings highlight that further assessment related to frailty is necessary among this population of recently incarcerated women with a history of addiction. Future research should focus on addressing physical, psychological and social frailty domains in the development of culturally-sensitive and targeted programs. Additional systems-based infrastructure would include intensive case management designed to help frail women learn self-care strategies as they navigate social service systems and transition into the community.

# SOCIAL JUSTICE

## Establishing a Composite Score for Socioeconomic Disadvantage in Maryland

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**Purpose/Aims:** Little is known about the barriers and facilitators of re-engagement after a gap in outpatient HIV care. The primary objective of this study was to create a composite score for socioeconomic disadvantage in Maryland, by zip code tabulation area (ZCTA). Socioeconomic disadvantage is a latent variable.

**Rationale/Conceptual Basis/Background:** Andersen's Behavioral Model (ABM) is a health services research model that describes access and use of health care in vulnerable populations. Specific "ecological indicators" provide a comprehensive perspective on variation in neighborhood social ecology. A composite score for socioeconomic disadvantage depicts a cluster of traits to represent neighborhood socioeconomic disadvantage that frequently load on a single factor. These traits include: poverty, unemployment, female-headed households, less than high school education, and households receiving public assistance.

**Methods:** The five named ecological indicators were extracted and downloaded from the United States Census Bureau American Factfinder website into Microsoft Excel for all ZCTA in Maryland and exported into SPSS statistical software, Version 24. Principal Axis Factor (PAF) analysis with Varimax rotation was conducted and composite scores were created based on the mean of the items using regression methodology.

**Results:** A sample of 470 ZCTAs were used with 5 ecological indicators. The Kaiser-Meyer-Olkin measure of sampling adequacy was .78 and Bartlett's test of sphericity was significant ( $\chi^2(10) = 585, p < .05$ ). Extraction of the factors was completed using a fixed number of factors at "1." The explained variance was 43.077%, with solid factor loadings, ranging from .480-.849. Regression factor scores ranged from -1.49-4.13 and was calculated for a total of n=429 (41 cases were eliminated based on listwise deletion). Descriptive statistics of the composite score in contained in Table 1. Skewness and kurtosis values that fall within an absolute value of 2 to be normal. Applying these rules, normality is evident.

Table 1. Descriptive Statistics for Socioeconomic Disadvantage Composite Score (n=429)

Variable	M	SD	Skew	Kurt
Factor Score	.000	.915	1.13	1.87

**Implications:** The construction of a composite score for socioeconomic disadvantage is an accepted approach to assess small-area neighborhood socioeconomic environment. Future research will test the constructs of ABM and their association with re-engagement in outpatient HIV care after a gap of six months or more. The composite score for socioeconomic disadvantage will be used as a community-level variable in the model. Composite scores for socioeconomic disadvantage may be used in other nursing research studies to examine community-level effects on individual social and health outcomes.



## SOCIAL JUSTICE

### Mobilizing Community Members as Active Partners in Participatory Research

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A successful collaborative participatory research partnership was developed between a research-intensive university and the nursing leadership throughout selected US Affiliated Pacific Island (USAPI) territories and nations.

**Purposes/Aims:** This presentation will describe strategies used to turn a passive interest or abstract interest in a problem into active participation and leadership in finding solutions.

**Rationale/Conceptual Basis/Background:** The USAPI nations are the gateway to the Pacific and Asia for the US, and are strategically important in terms of military, health and commerce affairs. Serious health disparities exist for the children in the USAPI. Infant mortality rates, tuberculosis, and obesity affects the children of this region at much higher rates compared to the mainland U.S. Nursing is the largest segment of the healthcare workforce in the USAPI, and building capacity for CBPR health initiatives among nursing in this region will serve to mitigate existing health disparities.

**Methods:** A train-the-trainer approach was developed and implemented in order to maintain the power base with each local group in the USAPI, rather than with the university researchers. A community-based participatory research (CBPR) workshop training program was initially delivered to 150 nurse leaders throughout the USAPI; four (4) territories/nations volunteered to participate (Chuuck, Marshall Islands, Guam and Kosrae). Upon identification of the topic, the university partners conducted additional onsite CBPR training for the nursing leadership. Each territory/nation's nursing leadership formed local advisory committees and planned their own community forums. A Regional Advisory Board was established with representation from the US Public Health Service Pacific Region Office, the Pacific Island Health Officers Association (physicians), and key health leaders from each of the participating USAPI territories/nations.

**Results:** The community partners (nurses in the US Affiliated Pacific Islands [USAPI]) were initially quiet and became introspective at the initial large group meeting. We did not intervene and respectfully allowed the silence. After a 10-15 minute period one of the nurses spoke up and said "how can we be role models for our children when we are obese ourselves?" Immediately the group concurred and it was obvious this [previously unspoken] issue was endorsed. Suggestions for activities immediately flowed from the group. Active interest ensued from the moment a member of the group identified the unspoken situation.

**Implications for Translation to Practice/Further Research:** The academic researchers were privy to this interchange because of our long-standing (17-year) consistent relationship with the nurses in the USAPI. Based on our interactions with nurses in the USAPI, our willingness to endure the group's silence communicated trust and respect in the capacity of the group to identify their own problems and craft their own solutions. Translational aspects include empowering the nurse leaders from each territory/nation to modify the CBPR activities for their own locale's built environment, economics and political policies. Our role as the academic researchers was to coalesce the ideas and partner with the group to conceptualize how the intervention would be structured.

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**Funding:** NIH/NICHD, R13HD063139.

## SOCIAL JUSTICE

### Social Justice: Ongoing Inconsistencies in Foundational Nursing Documents

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**Purposes/Aims:** The purpose of this study was to examine the integration and conceptualizations of social justice in the latest editions of the American Nurses Association's *Social Policy Statement*, *Scope and Standards of Practice*, and *Code of Ethics*. The aims were to: 1) identify the definitions of social justice utilized in the three foundational documents and 2) compare the integration of social justice concepts across the documents.

**Rationale/Background:** Social justice is a core professional value of nursing practice and education. The American Nurses Association's *Scope and Standards of Practice*, *Code of Ethics*, and *Social Policy Statement* declare the promise of nursing practice, thus serving as a beacon and blueprint for nursing education. The degree to which these documents uphold and outline the value of social justice directly impacts the education and professional identity of generations of nurses to come.

**Methods:** Critical discourse analysis examines language as a form of social practice and is particularly interested in the often hidden dynamics of power in which discourse is embedded. The analysis of the three ANA documents focused on vocabulary, argumentation, textual structures, idioms, agency, and sources of knowledge within broader contexts of society and ideology in order to make explicit power dynamics with relation to social justice concepts.

**Results:** The primary finding of this study is that while the *Code of Ethics* presents a definition of social justice and is more explicit and expansive of its integration of social justice principles, the other two documents are much more focused on professionalism and professional identity, indicating ongoing inconsistencies and contradictions of the nursing value of social justice. Related to this is the tension between professional nursing at the bedside and the need for broader systems change to promote and protect health at the aggregate level, which is required for health equity. The fault lines along which health inequities exist, namely the constructs of race, gender, ability, sexuality, nativity, age, and religion are largely cursory or completely absent, rendering the associated health inequities invisible.

**Implications:** These findings indicate the need for a deeper exploration of the contradictions between the declaration of social justice as a professional nursing value and the inconsistent conceptualizations and integration of social justice in foundational texts. Greater consistency in these documents can support collective and concerted efforts across nursing education programs to prepare nurses who will promote health equity.



## Abstracts of Podium Presentations

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### SYMPTOM MANAGEMENT

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FATIGUE AND DISTURBED SLEEP TRAJECTORIES  
ARE ASSOCIATED WITH CO-OCCURRING SYMPTOMS

*Meagan Whisenant, Sandra Mitchell, Susan Beck, Bob Wong, Kathi Mooney*

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QUALITATIVE VALIDATION FOR MANDARIN  
PAIN CARE QUALITY SURVEY

*Jia-Wen Guo, Hui-Ying Chiang, Susan L. Beck*

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IMPACT OF OPIOID SAFETY INITIATIVES IN THOSE  
AT HIGH RISK FOR OPIOID-RELATED PROBLEMS

*Manu Thakral, Rod Walker, Kathleen Saunders, Susan Shortreed, Sascha Dublin,  
Michael Parchman, Ryan N. Hansen, Evette Ludman,  
Karen J. Sherman, Michael Von Korff*

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EFFECTIVENESS OF FOOT REFLEXOLOGY AMONG  
PATIENTS UNDERGOING MAJOR ABDOMINAL SURGERY

*Poongodi Mohan, Aruna Subramaniam, Ardith Z. Doorenbos*

# SYMPTOM MANAGEMENT

## Fatigue and Disturbed Sleep Trajectories Are Associated with Co-Occurring Symptoms

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*Sandra Mitchell, PhD, CRNP, FAAN, Professor<sup>1</sup>*

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**Purpose/Aims:** The purpose of this study was to explore whether membership in distinct symptom subgroups based on experiences of fatigue and disturbed sleep is also associated with the presence of moderate or greater levels of other symptoms.

**Rationale/Conceptual Basis/Background:** Individual symptoms and symptoms clusters are dynamic and may change over the course of treatment for breast cancer. Fatigue and disturbed sleep are reported to co-occur with other symptoms, including depressed mood, anxiety, pain, nausea, and trouble thinking. Guided by constructs shared across 4 symptom theories, this study assumed that symptoms co-occur in individuals in such a way that those individuals can be classified based on their unique symptom trajectories. Using data across cycle 2 and 3 in women initiating chemotherapy treatment for newly diagnosed breast cancer, we previously identified 3 patterns of fatigue and 2 patterns of disturbed sleep described by a Latent Growth Mixture Model.

**Methods:** In a secondary analysis of a subset of data from 2 multi-site randomized clinical trials, independent samples *t*-tests and ANOVA were used to distinguish between subgroups of women previously determined to demonstrate distinct trajectories of fatigue and disturbed sleep on co-occurring symptoms. Sample inclusion criteria included women diagnosed with breast cancer undergoing initial chemotherapy treatment, with at least 3 symptom reports during cycle 2 and 3. The severity of 7 symptoms was self-reported daily by women (0-10 scale) during cycles 2 and 3 of chemotherapy, using an automated telephone system. Summative scores were calculated for each symptom individually within each cycle, including the number of days subjects scored a severity of 4 or higher, and then compared to class membership for fatigue and disturbed sleep.

**Results:** Participants (n=166) had a mean age of 53 years (S.D.  $\pm 10.8$ ); approximately half (52.4%) had early stage breast cancer. Membership in higher severity fatigue classes was associated with sleep disturbance (cycle 2:  $p < .001$ ; cycle 3:  $p < .001$ ), depressed mood (cycle 2:  $p < .001$ ; cycle 3:  $p = .01$ ), nausea and vomiting (cycle 2:  $p < .001$ ; cycle 3:  $p < .001$ ), anxiety (cycle 2:  $p = .02$ ; cycle 3:  $p < .01$ ), and trouble thinking (cycle 2:  $p < .01$ ). Membership in the worsening disturbed sleep class was associated with fatigue (cycle 2:  $p = .01$ ), depressed mood (cycle 2:  $p = .01$ ; cycle 3:  $p = .01$ ), anxiety (cycle 3:  $p = .01$ ) and trouble thinking (cycle 3:  $p = .02$ ).

**Implications for Translation into Practice/Further Research:** Clinicians need to be aware that symptoms co-occur and that the dynamic process of multiple symptoms may be influenced by management of a single symptom. Further study is needed to examine associations between inter-individual variability in co-occurring symptoms and molecular or genomic factors. Identification of women at greatest risk for high symptom burden during chemotherapy allows clinicians to target those individuals for intervention, potentially avoiding poor outcomes that may be associated with symptom burden, including decreased functional status, decreased vocational functioning, problems with adherence, and increased health care utilization.

**Funding:** Supported in part by a T32 Institutional Training Grant in Cancer, Aging, and End of Life Care (T32NR013456), National Institutes of Health, NIH/DHHS (R01 CA89474 Mooney, PI), and NIH/DHHS (R01 CA120558 Mooney, PI).

# SYMPTOM MANAGEMENT

## Qualitative Validation for Mandarin Pain Care Quality Survey

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**Purpose/Aim:** This purpose of this study was to examine the conceptual equivalence of the translated Mandarin Pain Care Quality Surveys (PainCQ®).

**Rationale/Conceptual Basis/Background:** Cancer pain is one of the most common and severe symptoms in cancer patients. Lack of an appropriate evaluation tool for assessing the quality of pain care is one of numerous barriers that prevent patients from receiving effective pain treatment. There is evidence to support the reliability and validity of the English version of the PainCQ surveys which rate the quality of pain care from patient's perspective. Our research group took the initial step of translating the PainCQ (33 item version with two surveys, one focusing on interdisciplinary care quality and the other focusing on nursing care quality) into Mandarin using multicultural translators who were from Taiwan, China, and U.S. Examining translation equivalence by target users, Mandarin speaking cancer patients, is necessary.

**Methods:** Participants were included if they were greater than 18 years-old, admitted to inpatient unit with an expected length of stay of at least 24 hours, had a diagnosis of cancer or a suspected cancer diagnosis, spoke and read Mandarin, and experienced pain. Those who were mentally, cognitively, or physically unable to participate in an interview were excluded. We conducted this study in a medical center in Taiwan because Mandarin is one of the official languages in Taiwan. Participants completed the Brief Pain Inventory, a demographic survey, and Mandarin the PainCQ before a cognitive interview. Cognitive interviews assessed conceptual equivalence by asking patients to review and interpret translated PainCQ questions. Each question was reviewed by at least five participants. Descriptive statistics was used to analyze numerical data; cognitive interview data were manually reviewed to extract feedback for revising translated statements.

**Results:** Forty cancer patients with pain who ranged in age from 39 to 77 years (Mean=52.78, SD=8.54) were interviewed. The majority of them were male (n=23, 57.5%), married (n=32, 80%), greater than 10th grade education (n=23, 57.5%), late cancer stage (n=25, 62.5%), and hospitalized due to chemotherapy or pain control (n=25, 62.5%). On a 0 to 10 scale, the average pain was 3.22 (SD=1.62) and their pain relief by pain treatment was 2.48 (SD=2.34). Based on their feedback, the expected number of questions in a survey was between 10 and 30. Most of the translated survey questions were easy to understand while couple questions do not make sense to patients. Some unclear questions could be contributed to the cultural aspects. For example, a patient stated, "My pain is my business which does not involve in other people", when he reviewed the question, "My healthcare team asked about how my pain affected my relationship with others." Some translated questions were suggested to change the wordings to be understood easily.

**Implications:** The result of the study provided valuable information for revising the current Mandarin version of the PainCQ Surveys. Appropriate adjustments will be made on the basis of the results of cognitive interviews to refine existing items.

## SYMPTOM MANAGEMENT

### Impact of Opioid Safety Initiatives in Those at High Risk for Opioid-Related Problems

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**Aims:** An integrated healthcare system in Washington State implemented dose reduction initiatives to alter providers' expectations regarding best practices for safe opioid prescribing among chronic opioid therapy (COT) patients with chronic pain from 2008-2014. We aimed to determine if dose reduction initiatives implemented in primary care had a differential impact on doses of COT patients at higher risk for opioid-related adverse outcomes, namely those with mental health conditions; substance use disorders (SUD); sedative use; and male gender, compared to lower risk patients.

**Rationale/Conceptual Basis/Background:** The term "adverse selection" has been used to characterize the prescribing pattern where persons at higher risk for opioid use disorder and overdose are more likely prescribed high-dose COT. In order to understand the impact dose reduction initiatives may have on opioid-related morbidity and mortality, evaluating prescribing patterns among higher risk subgroups is critical.

**Methods:** COT patients were defined as receiving 70-days or more supply of opioids in 90 days using electronic pharmacy data for filled prescriptions. The characteristics we used to define the four higher risk groups were: (1) a history of mental health conditions and (2) history of SUDs, both identified using electronic administrative data of recorded diagnoses in the prior 3 years; (3) sedative use concurrent with opioids, and (4) male gender. We calculated the average daily morphine equivalent doses (MED) dispensed to each COT patient in each 3 month window (quarter) of the study period from 2006-2014. We used interrupted time series methods to examine average daily MED from 2006-2014 in the four higher risk subgroups of COT patients compared to their lower risk counterparts.

**Results:** There were 23,809 COT patients meeting eligibility criteria over the 8.75-year study. The average number of person-quarters contributed was 8.5. As of their first eligibility quarter, the sample was 63.8% women, 47.1% were aged 46-64 years and 87.6% resided in Western Washington State area. Of the high-risk characteristics we considered, the most common was a diagnosis for mental health condition(s) (56.2%), followed by sedative use (32.4%) and SUD (9.9%). Adjusted for covariates, the decline in absolute average daily MED across the entire study (2006-2014) was greater in the higher risk subgroups compared to the lower risk subgroups for all 4 characteristics of interest, i.e. with mental health conditions vs. without (38.2mg versus 25.9mg,  $p=0.003$ ); with SUDs vs. without (49.9mg versus 31.1mg,  $p=0.030$ ); with sedative use vs. without (41.8mg versus 28.6mg,  $p=0.002$ ); in men vs. women (40.6mg versus 28.7mg,  $p=0.021$ ). Higher risk patients also had a greater starting doses compared to lower risk patients, creating a greater potential for dose reduction.

**Implications:** Practice guidelines implementing a high-dose COT threshold along with medical supervision were integral parts of the clinical policy changes that resulted in the greatest decline in opioid dosing trends. This study provides evidence for the impact of policy initiatives aiming to promote safe opioid prescribing consistent with the recently released CDC recommendations. Further study is needed to determine whether policy initiatives at the institutional level can reduce opioid prescribing without state-wide guidance to promote safe opioid prescribing.

**Funding:** This research was supported by a grant the Patient-Centered Outcomes Research Institute (R-IHS-1306-02198, Von Korff). The contribution from Dr. Thakral was supported by National Institute on Aging, grant number: T32AG02767709.

# SYMPTOM MANAGEMENT

## Effectiveness of Foot Reflexology among Patients Undergoing Major Abdominal Surgery

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**Purpose/Aim:** The objectives of the study were to determine the effectiveness of foot reflexology on post operative pain, anxiety and quality of life among patients undergoing major abdominal surgery.

**Rationale/Background:** Pre operative pain and poorly controlled acute post operative pain have been associated with development of chronic post operative pain. Pain has significant functional, cognitive, emotional and social consequences. As well, post operative anxiety causes increased pain, because anxious patients have been shown to have a lower pain threshold. Pain can affect the patient's physical, psychological, social, mental functions and decreases quality of life.

**Methods:** A Randomized Clinical Trial with 360 participants (180 intervention and 180 control) was used to evaluate the effectiveness of foot reflexology on post operative pain, anxiety and quality of life of patients undergoing major abdominal surgical procedures. The investigator delivered foot reflexology for the patients from the 1st post operative day to the 5th post operative day for 45 minutes on both feet and foot reflexology was taught to the patient's caregiver. Additionally, the patient and caregiver received a manual of how to conduct reflexology. Caregivers were asked to give reflexology three times a week for three weeks from the day of discharge. The control group received routine care from the hospital. Pain was assessed each day from post-op day 1 till the 5th post operative day. Anxiety data were collected post-op day one and 5th post operative day. Quality of life was collected two weeks before surgery and then 4 weeks post-op. Data was analyzed using descriptive and inferential statistics.

**Results:** Independent t test revealed that over all 5 post-op days the intervention group had significantly less pain than the control group ( $p < 0.001$ ). Anxiety was also significantly lower in intervention group compared to control at post-op day one and five ( $p < 0.001$ ). Quality of Life was also found to be significantly different between intervention and control four weeks post-op ( $p < 0.001$ ).

**Implications:** Foot Reflexology is an intervention with no harmful side effects. It can also be performed anywhere and at any time. This study provides evidence of Foot Reflexology as effective on acute post operative pain and anxiety. It also suggests that it may improve the quality of life in weeks after surgery.





**Abstracts of Podium Presentations**

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**TOPICS IN GERONTOLOGY**

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THE EXPERIENCE OF WOMEN MOVING TO ASSISTED  
LIVING WITHIN A PLANNED RETIREMENT COMMUNITY

*Judith M. Scott*

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A MEASURE OF SOCIAL ISOLATION IN THE NATIONAL  
HEALTH AND AGING TRENDS STUDY

*Janet S. Pohl, Barbara B. Cochrane, Karen G. Schepp, Nancy Fugate Woods*

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COMORBID CONDITIONS ASSOCIATED WITH ADVERSE  
OUTCOMES IN PATIENTS WITH PRESSURE ULCERS

*Ruth A. Bryant, Kenn B. Daratha, Cynthia F. Corbett, Gail Oneal*

## TOPICS IN GERONTOLOGY

### The Experience of Women Moving to Assisted Living within a Planned Retirement Community

*Judith M. Scott, PhD, RN*

*Nursing and Health Sciences*

*Helen and Arthur E. Johnson Beth-El College of Nursing  
Colorado Springs, CO*

**Purpose/Aims:** The study purpose was to explore the lived experience of older single women living in a Continuing Care Retirement Community (CCRC) who transitioned from their independent homes to the assisted living apartments.

**Rationale/Background:** Reports indicate older adults move to assisted living within a CCRC when the independent home becomes too much for them to manage, their physical or psychological needs require support, or when recommended by family or facility staff. For some women such a move can be perceived as an opening to a new chapter of life. However, for other older women, the transition can be a challenging event, many of whom are recently widowed and facing increasing frailty.

**Methods:** This study employed a hermeneutical phenomenological research approach to explore the lived experience of 17 older women over 75 years of age, with no apparent cognitive problems, who moved from their independent homes to assisted living within two CCRCs. The residents, on average, had lived in the independent residents for ten years. Themes developed from individual participant interviews were analyzed using Van Manen's research approach to data analysis.

**Results:** Three major themes surfaced from the interviews: *Preplanning*, *Executing*, and *Adjusting* to the transition. *Preplanning* was the experience of having foreknowledge of the on-campus AL, the decision to add one's name to the waiting list, the knowledge of bodily changes that signaled a possible time to move, and feelings about preventing burden on their families. *Executing* was the experience of distributing possessions, enlisting and receiving assistance with the move, and acknowledgement the types of emotions that surrounded the move. *Adjusting* was the experience of incorporating new daily routines, needing to stay in control of activities, and feeling an acceptance or grudging acknowledgment of AL as the place to live. Even with facility familiarity and family/staff assistance, the move was challenging, and adjustment was especially difficult when the women had physical or sensory impairments, had recently lost a spouse, or had given up driving.

**Implications:** Opportunities exist for nurses and assisted living staff to incorporate supportive strategies into the plans of care for residents during the transition between independent and assisted living. The findings of this study add to the understanding of these transitions providing a clearer picture of experiences that promoted satisfying transitions. The experience of cognitively impaired older adults was not included in this study. Further research is needed to capture the perspectives and needs of these older adults as well as the perspectives of older men. Knowledge about aging and transitions could be collected to better prepare nurses and assisted living staff to care for these older adults, possibly improving the quality of life of these older adults as well as their own level of work satisfaction.

## TOPICS IN GERONTOLOGY

### A Measure of Social Isolation in the National Health and Aging Trends Study

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**Purpose:** The objectives of this study were to describe the development of a social isolation construct, based on the social domains of Berkman and Syme's Social Network Index (SNI, 1979), and to establish convergent validity of the measure by examining the relationship between social isolation and depression in the National Health and Aging Trends Study (NHATS).

**Background:** The social isolation of older adults contributes to multi-morbidity and mortality. However, there is a lack of conceptual clarity and consistent measurement of social isolation in the research literature. Precision in measuring social isolation is needed to compare findings across studies and develop future social isolation interventions.

**Methods:** This construct development study involved a secondary analysis of cross-sectional (baseline) data from the NHATS, a nationally representative sample of Medicare beneficiaries ( $n = 7,609$ ). In-person interviews were conducted by trained interviewers. Items included the following domains: marriage, family and friends (talked with family, talked with friends, visited with family or friends), religious participation, and club participation. Items were recoded to ensure that a higher construct score indicated greater isolation, with a construct score of 0-6 calculated for each participant. A cutpoint of 4 (scores of 4, 5 or 6) was considered socially isolated. A descriptive correlational design was used to examine the association between the social isolation construct and depression. Depression was measured with the Physician's Health Questionnaire-2 (PHQ-2).

**Results:** Mean age of participants in the analytic sample was 78.37. Those participants who scored  $\geq 4$  on the social isolation construct represented 21.9% (CI = 20.6 – 23.3) of the sample. Those who scored  $\geq 3$  (cutpoint) on the PHQ-2 represented 14.5% (CI = 13.4 – 15.8) of the sample. The correlation between social isolation and depression (2-tailed Pearson's  $r$ ) was 0.23 ( $p < .01$ ).

**Implications:** This study was the first to examine a well-conceptualized, comprehensive, and domain-inclusive social isolation construct created with data from NHATS. As expected, convergent validity with the depression measure was demonstrated. This social isolation construct is theoretically appropriate and consistent with Berkman and Syme's use of social domains for predicting outcomes. This measure of social isolation may be particularly useful for future research with NHATS data and as an outcome measure for social isolation interventions.

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**Funding:** In part by the Myrene C. McAninch Doctoral Scholarship, de Tornyay Center for Healthy Aging, University of Washington School of Nursing.

## TOPICS IN GERONTOLOGY

### Comorbid Conditions Associated with Adverse Outcomes in Patients with Pressure Ulcers

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*Gail Oneal, PhD*  
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**Purposes/Aims:** The purpose of this study is to identify comorbid conditions associated with adverse outcomes in patients with pressure ulcers (PrUs). This poster will report the demographic and clinical characteristics of the adult patient with a hospital acquired PrU (HAPU) and a present on admission (POA) PrU, differences in rates of adverse outcomes and independent risk factors for adverse outcomes in adult patients with a HAPU or POA PrU.

**Rationale/Conceptual Basis/Background:** PrUs are a significant threat to the hospitalized patient. PrUs occur in 4.5% of all hospitalized patients; 8-12% of ICU patients. Patients with a PrU experience prolonged hospital stays, increased pain and suffering, increased risk of infection, greater costs of care, and decreased quality of life. However, it is not known what comorbid conditions are associated with adverse outcomes in the patient with a PrU; in addition it is not known if the comorbid conditions differ between patients with a HAPU or POA PrU.

**Methods:** After exempt status determination from the Washington State University Institutional Review Board, data on hospitalizations was obtained from the Washington State Comprehensive Hospital Abstract Reporting System (CHARS). The CHARS dataset includes electronically abstracted encounter information from each acute care hospital discharge in Washington State. Between 2009 and 2013, records for 44,843 adult patients were identified as having a PrU during hospitalization (any ICD9-CM diagnosis code of 707.0\* or 707.2\*). After applying inclusion/exclusion criteria, 10,275 records were available for analysis. Records were sorted into the HAPU cohort and POA cohort based on coding.

The association between each comorbid condition (using the Elixhauser comorbidity method) and each adverse outcome was analyzed for both cohorts using binomial logistic regression.

**Results:** The HAPU cohort was younger ( $M = 65$ ) than the POA cohort ( $M = 72$ ), had a higher frequency of elective admissions, and based on younger ages had a higher frequency of Medicaid enrollees and commercial insurance enrollees. The leading primary diagnosis upon admission in both cohorts was septicemia. Fully adjusted models demonstrated the only statistically different adverse outcome between the two cohorts was the odds for prolonged LOS, which were 8 times greater in the HAPU cohort as compared to the POA cohort. Weight loss and HF were common statistically significant independent factors associated with adverse outcomes in both cohorts. In the HAPU cohort, the odds of in-hospital death was 4.6 times greater for non-White/non-Hispanic compared to other races ( $OR = 4.61$ , 95%  $CI = 2.2, 9.66$ ,  $p < 0.001$ ).

**Implications:** This research has implications for clinical care, nursing education, public policy and research. First and foremost, further research is needed to understand the factors contributing to the race difference in the odds of in-hospital death in the HAPU population. It is not clear if this is a due to darker skin tones or a reflection of an increased severity of illness. In addition nursing education is needed to reinforce the significance of routine and frequent skin inspection and assessment for pressure induced skin changes.

**Abstracts of Podium Presentations**

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**UNDERGRADUATE NURSING STUDENT  
EXPERIENCE**

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**OBJECTIVE STRUCTURED CLINICAL EXAMINATIONS/  
ASSESSMENTS: BEST PRACTICES**

*Rana Halabi Najjar, Angie Docherty, Nick Miehl*

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**BSN STUDENT EXPERIENCE  
WITH MEDICATION ERRORS**

*Debra Wilson, Deborah Boschini*

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**UNDERGRADUATE HONORS PROGRAM IN NURSING:  
FOSTERING NURSE SCIENTISTS**

*Catherine Jankowski, Madalynn Neu*

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**DEVELOPMENT OF AN INTERPROFESSIONAL COURSE  
FOR DISTANT RURAL CAMPUS NURSING STUDENTS**  
*Deborah C. Messecar, Joanne Noone, Tamara Rose, Rachel Richmond, Sheri Noble*

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**HACKING CASE-BASED LEARNING: AN INNOVATIVE  
CURRICULUM DEVELOPMENT STRATEGY**

*Jessica E. Draughon Moret, Kupiri Ackerman-Barger,  
Jenna Shaw-Battista, Andrew Corbett*

# UNDERGRADUATE NURSING STUDENT EXPERIENCE

## Objective Structured Clinical Examinations/Assessments – Best Practices

*Rana Halabi Najjar, PhD, RN, CPNP, Assistant Professor*

*Angie Docherty, NursD, MPH, RN, Assistant Professor*

*Nick Miehl, PhDc, MSN, RN, Clinical Instructor & Simulation Specialist*

*School of Nursing*

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### **Aims:**

1. To evaluate best practices for implementing Objective Structured Clinical Examinations/Assessments (OSCE/As) emerging from a mixed methods study
2. To share lessons learned from implementing OSCE/As in an undergraduate nursing curriculum

**Background:** The Objective Structured Clinical Examination (OSCE) is a multi-station simulation with each station focused on a specific task. An adaptation is the OSCA (Objective Structured Clinical Assessment) which has one station with integrated tasks such as communication, medication administration, and client education. The OSCE/As allow for the assessment of all three domains of learning, cognitive, psychomotor, and affective, as well as challenge students to use critical thinking, clinical reasoning and judgment in an educator-controlled environment.

A mixed methods study was utilized to assess the psychometric properties of an OSCA rubric and to ascertain the students' experiences with the OSCE/As. The quantitative results have been published in *Clinical Simulation in Nursing*. The qualitative findings are being prepared for publication and dissemination. This presentation focuses on the important findings pertaining to faculty learning and the subsequent best practices developed from the study.

**Methods:** The mixed methods study was conducted at one site of a multi campus university in the Pacific Northwest. The quantitative component assessed the content validity and inter-rater reliability of OSCE/As rubrics. The qualitative component, using 3 focus groups ranging from 6-11 students, examined experiences of formative and summative assessment as part of the OSCE/A process.

**Results:** The data collection and analysis process of both components has facilitated considerable learning from a faculty perspective. Best practices in implementing OSCE/As include: 1) adequate and timely training of the standardized patient and rater, 2) iterative, curriculum specific development of reliable and valid rubrics, 3) facilitating adequate planning and resources, 4) supporting adequate simulation preparation of students, and 5) designing clinical scenarios adaptable to the student vs RN role. The implementation and roll out of the OSCE/As also helped to identify educational gaps and thus the process has directly contributed to curricular improvement.

**Implications:** The development of a robust, valid and reliable rubric for assessing aspects of clinical performance is important in the changing climate of nursing education. There is a distinct process required to implement OSCE/As in any curriculum which requires time and resources. Our data provide a template for this process including the implementation of OSCE/As and the development and testing of rubrics. We believe best practices can support the transition of faculty and students to the adoption of simulation as both a testing and learning medium and that OSCE/As have application as a strong educational strategy in all nursing programs.

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**Funding:** Study funded by OHSU Innovations Award - Betty Gray Rural Health Development Fund.

# UNDERGRADUATE NURSING STUDENT EXPERIENCE

## BSN Student Experiences with Medication Errors

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**Purpose:** This study was conducted to evaluate undergraduate nursing student understanding regarding medication safety. Specifically, participants were asked about their personal experience with medication errors as well as their more general understanding of how medication errors should be managed.

**Background:** Patient safety is a focus of concern for the Joint Commission as well as other professional reports such as the IOM. Medication errors make up a large percentage of errors that affect patient outcomes. Didactic education regarding medication administration is included in nursing education programs, but the clinical application of this teaching can be varied due to time constraints, differences in faculty supervision, and agency policies that impact student practice. In order to ensure patient safety and support quality nursing education, undergraduate nursing programs must monitor student performance, evaluate the effectiveness of instruction, and revise curricula and policies as needed. As part of a comprehensive medication safety initiative, one BSN program conducted a baseline survey to evaluate nursing student experiences with medication errors and near-miss errors.

**Methods:** The Medication Safety survey elicited both quantitative and qualitative responses regarding 1) students' experience with medication errors/near-miss errors; 2) students' experience with consequences as a result of the error/near-miss error; and 3) general questions about medication error reporting and how one should respond if an error is made. After IRB approval, the survey was sent to all Junior and Senior nursing students (N=101) using SurveyMonkey.

**Results:** Forty-six respondents provided complete data for evaluation. Twenty-six students (56.5%) reported no errors; 15.2% reported a near miss that was self-corrected; 21.7% reported a near miss that was faculty/staff corrected; and 6.5% reported that they actually made an error. Analysis of qualitative data revealed that anxiety and lack of experience were common themes for those who made either an error or near-miss error. All participants were asked about managing medication errors. Most (63%) said that the error needed to be reported, but most were unclear about to whom the error should be reported. Half (50%) discussed the documentation of the error but most responses were vague and unclear as to exactly what needed to be documented. Less than half (45.7%) addressed the need to assess the patient and follow up appropriately.

**Implications:** This study evaluated the experiences of students in one BSN program, and thus cannot be generalized to all undergraduate nursing students. A small sample size and self-selection bias further limits the generalizability of the data. The results do draw attention to the need for better faculty-student and faculty-faculty communication regarding medication safety and medication errors. Many nursing programs rely on part-time faculty members for clinical instruction; communicating expectations can be a challenge when these instructors are not regularly on campus. Near-miss errors provide teachable moments in which faculty can facilitate communication regarding the consequences of the near-miss error as well as the issues regarding reporting and documentation should an error occur.



# UNDERGRADUATE NURSING STUDENT EXPERIENCE

## Undergraduate Honors Program in Nursing: Fostering Nurse Scientists

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*Madalynn Neu, PhD, RN, FAAN  
Associate Professor*

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**Purpose:** The objective is to discuss successes and barriers of providing a research experience to undergraduate nursing students.

**Background:** Engaging undergraduate nursing students in research is essential to preparing nurse scientists for future academic and research positions. In 2013, we began an Honors Program in Nursing that engages incoming junior year students in research projects that culminate in a thesis and conference presentation prior to graduation.

**Methods:** Students who are accepted into the CU College of Nursing (CON) Bachelor Degree Program are eligible to apply to the Honors program. Written applications include a resume/curriculum vitae, essay, and letters of recommendation. The undergraduate program coordinator provides applicants' academic transcripts. Students submitting applications are interviewed by a faculty panel comprised of PhD-prepared, research-focused faculty in the CON. The faculty submits recommendations for invitations to the 6 top-ranked applicants. We accept no more than 6 students in each cohort to maintain a balance with faculty capacity. The Honors curriculum adds 6 credits to the BS program, including four 1-credit small group seminars during the junior and senior years and two 1-credit independent study courses in the senior year. Two faculty members teach the seminars and coordinate the Honors activities. The seminars are focused on research skills including the development of research questions and hypotheses; literature search strategies and reference management software; research ethics; written and oral communication; and the role of the nurse scientist. In the first semester, each student is matched with a faculty mentor, based on common interests and availability of data suitable for a thesis project and presentation at a state or national research conference. Students maintain logs of meetings with their mentors for successful completion of the senior thesis and presentation. Financial support for student (and mentor) travel to conferences, poster production, and publication costs is provided by the College.

**Outcomes:** We have enrolled 17 students who have collaborated with 11 faculty mentors; 4 mentors have collaborated with multiple students. The 8 graduates have presented posters at Western Institute of Nursing (WIN) conferences in 2015 and 2016 and 6 students will submit abstracts for the 2017 WIN conference. Thesis topics include infant feeding interactions, pediatric obesity, cancer survivorship, and refugee health. Students and mentors co-authored two peer-reviewed publications. Barriers to the program include availability of mentors with on-going research or data for secondary analyses that are scalable to a novice scientist and can be completed in two years. Although students are required to add 6 credit-hours to their tuition, this has not dissuaded their participation. Students related that the research experience is rewarding and may offer an advantage in the job market.

**Conclusions:** An undergraduate nursing honors program focusing on research skills and experience is rewarding to students and faculty mentors. Students are graduating with publications and conference presentations in addition to their Bachelor's degree. Faculty are enthusiastically mentoring students for two years. Scaling the honors program to the capacity of faculty mentors and institutional financial commitment for students' travel expenses and conference preparation are key components to success.

# UNDERGRADUATE NURSING STUDENT EXPERIENCE

## Development of an Interprofessional Course for Distant Rural Campus Nursing Students

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*Joanne Noone, PhD, RN, CNE, Campus Associate Dean, Ashland*

*Tamara Rose, PhD, RN-BC, Campus Associate Dean, Klamath Falls*

*Sheri Marie Noble, RN, BSN, PCCN, Clinical Instructor, Klamath Falls*

*Rachel Richmond, MSN, RN, Clinical Instructor, Ashland*

*Oregon Health & Science University  
School of Nursing*

Although many high quality Interprofessional Practice and Education (IPE) experiences have been developed in urban areas, processes and strategies for creating rural partnerships to provide IPE have less commonly been explored or developed.

**Aims:** The goal of this project was to develop viable interprofessional/academic partnerships to address the recruitment of interprofessional students and faculty to become committed full partners in IPE education in rural Oregon.

**Methods:** This project was conducted in three stages. In the first stage, a total of 15 key stakeholders, as well as experts in IPE and creating academic partnerships were interviewed who could inform and suggest possible solutions to recruiting other professional students and faculty in a rural area. Based on recommendations received in the first stage, academic partnership meetings were convened with possible interprofessional partners. Skills and approaches in identifying mutual goals and needs to form a successful academic partnership gleaned from the stage one interviews were used to suggest ways to approach our collaboration and develop the proposed course. During stage three, we piloted the regional course option at the rural campus in Spring 2016. Participants in the pilot course initially included a total of N= 64 students from undergraduate nursing, radiology, respiratory therapy, and vascular science, and N=12 course faculty in addition to our three main course coordinators (two nurse faculty and one respiratory therapy). The course had two intensive face-to-face (FTF) sessions, and was otherwise online via a Sakai website.

**Results:** Of the 64 students who originally registered for the course, 5 dropped before the course started. A total of 16 nursing, 15 radiology, 13 respiratory therapy, and 16 vascular students completed the first FTF session. Seventeen students (7 radiology and 10 vascular science) dropped before the second FTF session due to competing demands related to preparing for their senior year off-site rotations. Evaluations were collected from faculty for each in person session. Student evaluations were completed at the end of the course. Verbatim faculty comments and summaries of student comments were analyzed and were very positive. A total of 24 students completed a 19 item pre/post survey called the Readiness for Interprofessional Learning. The purpose of this questionnaire was to examine the attitude of health and social care students and professionals towards interprofessional learning. Each item is on a 5 point Likert - Maximum score is 95. Mean pretest scores were very high (85.4) indicating strong positive attitudes at baseline. There were no significant increase at posttest measure (mean = 85.1). However, on a 20-item pre post quiz on student knowledge of other healthcare disciplines, there was a substantial and significant change in post-test IPE quiz scores (15.3 versus 17.3, p=.000).

**Implications:** Lessons learned from interdisciplinary collaborator stakeholder interviews, the identification of partners, and the process used to formalize these partnerships and then implement a program of IPE can be used as a blueprint for developing these critical interprofessional opportunities for other nursing programs located in rural areas.

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# UNDERGRADUATE NURSING STUDENT EXPERIENCE

## Hacking Case-Based Learning: An Innovative Curriculum Development Strategy

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**Purpose:** We aimed to create a repository of robust longitudinal clinical case studies for active-learning exercises using the popular “hack-a-thon” model for technology assessment and development. In a traditional hack-a-thon people engage in collaborative computer programming. We decided to “hack” our case studies, bringing together people with diverse backgrounds from within and outside our academic community. Cases were collaboratively developed to elicit different perspectives and ways of thinking about health professions education and public health, while sharing the common goal of enriching our pre-licensure nursing curriculum with realistic clinical scenarios. Cases were designed to align with student academic and professional development milestones, while reflecting regional and national trends in population health and priorities for workforce development.

**Rationale:** Case-based learning is an integral component of our accelerated pre-licensure nursing program. The concept-based curriculum was designed to maximize student engagement with a variety of technology enhanced active-learning strategies that support and extend case studies. During classes cases are discussed in small group and whole class formats with faculty guidance. Realistic case scenarios are presented in several courses during the same time period, and evolve across multiple terms so students learn new concepts and engage with pseudo patients in deep and complex ways over time and from varied perspectives.

**Approach:** Students, faculty and staff from the health system were invited to join an interprofessional group to create and expand case studies. We drew upon the diversity of our academic and hospital community to collectively create engaging course content in two Case-a-Thon events to date (March and July 2016). Prepared materials for participants included a curriculum concept map and information about types of cases and pseudo patients already developed and existing needs in the repository. The Case-a-Thons focused on developing cases to be introduced in the first two academic terms in a range of courses from theory (e.g. social determinants of health) to clinical (e.g. psychological health and wellness).

**Outcomes Achieved:** Thirty-nine participants attended two events; 5 Students, 17 Faculty, 11 Staff, and 4 from outside the Schools of Health (alumni and donors). Participants stated “this was a great exercise that provoked diversity of thought” and that the changes made would “stimulate [student] thinking about social determinants of health.” Nine cases were developed in the first Case-a-Thon, ten in the second. Case development ranged from creating new cases, to minor revisions of existing cases (e.g. chief complaint or patient demographics) to “fleshing out” and making early case iterations more realistic and nuanced with greater detail and inclusion of additional resources. Case-a-thon participants were asked to keep the pre-licensure curriculum in mind and considered how cases could be used in future quarters, e.g. evolving health conditions in the index patient, or family members who might be featured in future quarters as the family case study evolves over time.

**Conclusions:** Our Case-A-Thons were fun and energetic events to crowd-source participants’ diverse clinical and community experiences with health to collaboratively develop 19 longitudinal cases. The cases developed are contextually rich enabling myriad active-learning activities.

**Abstracts of Podium Presentations**

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**UNDERSTANDING PATIENTS THROUGH  
COMMUNICATION ALTERNATIVES**

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**THE PATIENT VOICE IN HEALTHCARE**

*Susan S. Tavernier, Mary A. Nies, Carmen C. French*

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**EXPRESSING THE UNSPOKEN: FAMILIES COMMUNICATING  
OPENLY ABOUT END OF LIFE**

*Djin Lai, Lee Ellington, Gail L. Towsley, Cynthia A. Berg*

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**A FOCUSED ETHNOGRAPHIC QUALITATIVE STUDY  
ON DINÉ (NAVAJO) HÓZHÓ, A LIFE-WAY PHILOSOPHY**

*Michelle Kahn-John*

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**“GOOD DAYS” AND “SICK DAYS” FOR CHILDREN  
WITH CANCER REPRESENTED THROUGH THEIR DRAWINGS**

*Lauri A. Linder, Susanna Phinney, Heather Bratton, Kori Parker, Anna Nguyen*

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**DRAW-AND-TELL CONVERSATIONS WITH EGG-DONOR  
CONCEIVED CHILDREN ABOUT THEIR FAMILIES**

*Martha Driessnack, Patricia E. Hershberger*

# UNDERSTANDING PATIENTS THROUGH COMMUNICATION ALTERNATIVES

## The Patient Voice in Healthcare

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**Purpose:** The purpose of this prospective exploratory pilot study was to explore the impact of using the electronic Patient Generated Index (ePGI) as a communication tool at the point of care in adults receiving therapy for cancer. Specifically, pre- and post-intervention comparisons of patient satisfaction with care and with clinician communication were measured. Audio recordings were analyzed to identify if the ePGI had an impact on the patient/provider communication during routine visits.

**Background:** Areas most important to a person define their quality of life. Yet evidence shows a lack of oncology clinician initiated assessment and communication about patient health related quality of life (HRQL) issues. All too often patients are unable to articulate what is important to them, prioritize their needs or learn how treatment may affect their quality of life during visits with their health care provider(s). The ePGI is a novel tool designed to address HRQL assessment from a patient-centric paradigm. However, the impact of the ePGI on patient-provider communication has not been evaluated.

**Methods:** Convenience sampling of adult patients undergoing active therapy seen by two consenting clinicians were recruited. Usual patient/provider communication was audio recorded during two routine visits of seven patients. For two visits, an additional thirty-five patients completed the ePGI with the responses available during the visit. Visits were audio recorded after which participants completed the Patient Satisfaction Questionnaire-MD (PSQ-MD) and the Communication Assessment Tool (CAT). Differences between the two sets of survey scores were compared. Content analyses of the recordings was used to determine the degree to which the ePGI topics were discussed and who (patient or provider) initiated the topic discussion.

**Results:** Two clinicians and 41 patients consented to participate. Eighty percent of the patient sample were Caucasian, 53% had high school or less education and 68% had a household income of \$35,000 or less. The intervention group scores were negatively skewed; Wilcoxon Signed Rank test indicate there was no statistical difference in ePGI ( $p=.19$ ), CAT ( $p=0.7$ ) scores or PSQ-MD ( $p=0.6$ ) scores between the first and second measurement times. However, there was an upward trend in all three scores by nine to 10 points indicating improved quality of life and increased satisfaction with communication and provider. Seventy-one percent of topics identified on the ePGI were discussed during the visits, 59% of which were patient initiated.

**Implications:** Patient satisfaction is an outcome measured by nearly all clinical agencies. Satisfaction with communication of one's clinician may impact the overall clinical experience of the patient experiencing the complexities involved in cancer care. The study findings indicate an upward trend in patient satisfaction with communication when the areas most important to them were incorporated into the patient/provider visit. Moreover, having a tool to assist the patient articulate what is most important led to the discussion of those areas 71% of the time. Larger, randomized trials using the ePGI are needed to determine if the preliminary findings are supported.

# UNDERSTANDING PATIENTS THROUGH COMMUNICATION ALTERNATIVES

## Expressing the Unspoken: Families Communicating Openly about End of Life

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**Purposes/Aim:** The purpose of this paper is to describe a systematic process of developing a dyadic coping-based intervention for improving shared decision-making and communication between home health patients and their family member for future end-of-life care.

**Rationale/Background:** Chronically ill home health (HH) patients represent a clinically frail population at greater risk for unintended hospitalizations; yet only 29% of HH patients have completed advance directives. Patients with documented end-of-life care preferences are more likely to receive care aligned with their wishes, have lower likelihood of dying in hospital, and experience better quality of life in their last week of life. End-of-life communication is challenging for many families; avoidance of end-of-life discussions is common, and may be associated with negative effects such as increased anxiety, depression, and decisional uncertainty. As such, HH patients and their family members may benefit from engaging in end of life communication that facilitates collaborative decision-making about advance care planning earlier. Few end-of-life communication interventions have been developed to improve communication skills among HH patients and their family members. Thus, an HH intervention was developed to improve communication, emotional support and mutual engagement in decision-making among this population.

**Undertaking/Best Practice/Approach/Methods/Process:** An Intervention Mapping process was implemented, beginning with development of a logic map detailing constructs in the end-of-life decision making, collaborative coping, and general decision-making literature across disciplines. Targeted outcomes of increased collaborative coping, emotional disclosure, concordance in end-of-life decisions, comfort in end of life communication and readiness to participate in advance care planning were identified. Specific intervention strategies were developed by a nurse researcher with an HH nursing background with input from experts in end of life communication, collaborative coping and advance care planning. Strategies were designed to promote individual cognitive appraisals, perspective-taking, emotional disclosure, and emotional support as guided by the Developmental-Contextual Model (DCM) of dyadic coping. An iterative design to conduct feasibility testing of the intervention was developed.

**Outcomes Achieved/Documented:** The finalized two-part intervention consisted of a 5-10 minute long, vignette-based, individual think-aloud activity and a dyadic conversation encouraging the sharing of the major concerns previously identified. The think-aloud task would prompt targeted perspective-taking, cognitive and emotional processing, and enhance ability to set future goals, and is hypothesized to prime HH patients and their family members to engage in collaborative problem solving, express emotional concerns and receive emotional support in the dyadic conversation. Patients and family members would then be given the opportunity of completing a section of a living will together to practice making joint decisions. Prior to feasibility testing, informal testing was conducted over two months, which garnered positive feedback about the applicability and relevance of the intervention. This phase resulted in fine-tuning the protocol and intervention strategies.

**Conclusions:** Intervention mapping provided a structured process in which a novel application of the DCM was used to develop an end-of-life communication intervention. This intervention may provide HH agencies with a structured, theory-driven program to assist families in broaching the sensitive topic of end-of-life planning.

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**Funding:** This study was funded by a graduate student research award from the Consortium for Families and Health Research at the University of Utah.

# UNDERSTANDING PATIENTS THROUGH COMMUNICATION ALTERNATIVES

## “Only You Can Create Hózhó”: A Focused Ethnographic Qualitative Study on Diné (Navajo) Hózhó, a Life-Way Philosophy

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**Purpose/Specific Aims:** The purpose of this study was to explore the cultural wisdom of the Diné (Navajo) Hózhó life-way philosophy in three generations of Diné. **AIM 1:** Describe Hózhó from the perspective of Diné Elders (55 and older), Diné Adults (18-54), and Diné Adolescents (13-17). Questions examined how individuals define Hózhó, how they attain Hózhó, and how Hózhó sustains health. **AIM 2:** Compare and contrast Hózhó within three generations of Diné. **AIM 3:** Compare findings from this qualitative study with existing literature on Diné Hózhó.

**Background:** There are 566 federally recognized American Indian/Alaska Native (AIAN) tribes, villages, and pueblos in North America (United States Department of Health and Human Services, 2014). Cultural wisdom is a source of resilience for AIs and may hold meaningful and relevant knowledge that may promote the health in present and future generations of AIANs (Grandbois & Sanders, 2009; Kirmayer, Dandeneau, Marshall, Phillips, & Williamson, 2011). Research findings have suggested that pertinent protective AIAN cultural knowledge must be further explored to discern the protective elements within cultural wisdom. Historical trauma in AI communities has contributed to dissolution of cultural wisdom in younger generations of AIs however, few studies demonstrate this reality. The dissolution of AI cultural wisdom in AI communities may contribute to AI health inequities and disparities.

**Methods:** Focused ethnography, qualitative design, and photovoice methods were used to guide this study. Two semi-structured qualitative interviews were conducted with 22 Diné (6 adolescents, 10 adults, 6 elders) in Arizona. Participants took digital photographs to offer a visual expression of Hózhó. Qualitative data and the photographs were analyzed by two reviewers for content, emergent themes, and new insights into Hózhó. Results from the three generations were compared. The findings from this study were compared to previous literature on Diné Hózhó. Member checks were conducted with participants to offer the opportunity to review, confirm or correct study findings.

**Results:** Hózhó is a complex *life-way philosophy* that guides individuals to achieve physical, psychological, social, spiritual and environmental health. There was general understanding of Hózhó across all three generations, indicating there is transfer of Diné cultural wisdom across generations. Diné elders demonstrated greatest understanding of Hózhó. This study confirmed cultural wisdom is diminished in younger generations of Diné (adolescents and adults). All three generations believed the practice and understanding of Hózhó benefits physical, psychological, social and environmental health. Findings from this study were consistent with previous literature on Diné Hózhó.

**Implications:** The findings from this study substantiate the reality of both the successful and diminishing transfer of cultural wisdom across generations of American Indians. AI cultural wisdom is health protective for AIs. This study reinforces the importance of cultural preservation programs in AI communities as a mechanism for health promotion and offers validating insights into the complex meaning of Diné Hózhó.

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**Funding:** University of Arizona-College of Nursing Emmons Award.

# UNDERSTANDING PATIENTS THROUGH COMMUNICATION ALTERNATIVES

## “Good Days” and “Sick Days” for Children with Cancer Represented through Their Drawings

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**Purpose:** This study compared school-age children’s descriptions of “good days” and “sick days” using “draw and tell” interviews. Study findings are guiding the development of a mobile technology-based symptom assessment app for school-age children with cancer.

**Background:** Children receiving treatment for cancer experience multiple distressing symptoms that adversely affect their daily activities. Understanding children’s illness experiences from their perspectives is essential to optimize health outcomes both during and following completion of treatment. Because children’s verbal and cognitive abilities are common barriers for having their experiences understood, alternate approaches are needed. Arts-based approaches, including “draw and tell” interviews facilitate children’s recall of information and promote verbalization of their experience, which can enhance understanding of the child’s individual experience.

**Methods:** Participants in this descriptive study were 27 school-age children (median 9 years; range 6.33 – 12.83 years) receiving treatment for cancer at a tertiary pediatric hospital in the Intermountain West. Children received a packet of art materials and participated in “draw and tell interviews” describing both a “good day” and a “sick day.” Drawings were analyzed descriptively using content analysis procedures, guided by narratives related through the “draw and tell” interviews.

**Results:** The majority of children included themselves in both their “good” (n=19) and “sick” (n=24) day drawings. Six children included a favorite object or character rather than themselves in their “good” day drawings.

Most drawings featured the child in a specific location. “Good days” more frequently included an outside (n=11) rather than an inside location (n=7). “Sick days” featured the child in an inside location only (n=18). Thirteen children depicted themselves as engaged in activities during “good days” whereas only one child depicted himself as engaged in an activity on his “sick day.” “Good day” activities included both outside physical activities (n=7) activities such as sports and playground activities and inside activities (n=7) such as games and crafts. “Sick day” pictures emphasized limitations associated with the illness experience and frequently depicted the child lying down (n=12).

Children related 26 physical and 12 psychosocial symptoms through their drawings and interview narratives. Nausea (n=15) and sadness (n=22) were most frequently reported; however, children also depicted treatment-specific symptoms such as hearing loss. Twenty children depicted strategies they use to manage their symptoms.

Both “good” and “sick” day drawings also reflected the isolation associated with the cancer treatment experience. Only 12 drawings (5 “good” and 7 “sick” day) included other individuals, specifically parents, siblings, and hospital staff. None included same-age peers.

**Implications:** Study results demonstrate children’s capacity to provide rich personal data related to their illness experiences and to distinguish between “good days” and “sick days.” Results highlight commonalities among children receiving treatment for cancer as well as unique, individual experiences. Children’s drawings relate the associated meaning of their illness experience, specifically its impact on their activities. Results also demonstrate children’s capacity to identify and implement self-management strategies to help alleviate symptoms. Using drawings to complement traditional symptom measures may support clinicians in gaining a more child-centric perspective for managing the child’s illness and its symptoms.

**Funding:** National Institute of Nursing Research: Mentored Patient-Oriented Research Career Development Award K23NR014874.



# UNDERSTANDING PATIENTS THROUGH COMMUNICATION ALTERNATIVES

## Draw-and-Tell Conversations with Egg-Donor Conceived Children about Their Families

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**Background:** Despite the upward trend in the use of donor eggs to establish pregnancy, little is known about if and how parents disclose genetic origins to resultant children and/or how children process information about new family forms. Disclosure of genetic origins is not only becoming increasingly important in identifying risk and aiding clinical decision making, but non-disclosure has been shown to affect individual/family functioning.

**Purpose:** To engage egg-donor conceived children in conversations about their genetic origins and kinship families. The goal is to strengthen family functioning among the growing numbers of non-traditional, genetically-linked families by improving counselling and/or education about disclosing genetic origins to children within new family forms.

**Methods:** As part of a 10-year follow-up study exploring disclosure decisions in kinship families using donor eggs, we engaged a group of six children using cooperative inquiry to co-create a study-specific interview guide and then piloted the guide with four egg-donor conceived children, two of whom came from families who had disclosed genetic origins and two from families who had not. All children were 7-12 years of age. The guide was used in parallel with a child-centric, art-based approach to data collection: the *Draw-and-Tell Conversation* (DTC). The art directive was to “Draw your whole family.” The interview guide included questions, such as: 1) “How did you come to be a part of this family?” and, 2) “Was there anyone else who helped to make this family?” The guide was shared with parents for feedback, prior to interviewing the children and children were also asked to provide feedback. Field notes were kept throughout and children’s drawings and accompanying narratives were analysed using qualitative content analysis.

**Results:** The process of engaging children as content experts in the co-creation of a research interview guide was instrumental in anticipating questions and comments from pilot study participants. The children-only content expert panel provided nuanced language, interpretations, and insightful commentary about common adult communication errors, such as a tendency to “mix metaphors when they start talking about sex or having babies”. The children’s DTC from the pilot were notable for children’s 1) matter-of-fact explanations, such as you are either born into a family and/or family develops around you after you are born, and 2) inclusion of pets as equal family members. Parents/child participants offered no edits to the co-created guide during the pilot.

**Implications for Translation to Practice/Further Research:** New family forms not only include families created by assisted reproductive technologies, such as egg donation, sperm donation, embryo donation, and surrogacy, but also lesbian mother families, gay father families, and families headed by single mothers by choice. These parents are asking for the best way to disclose to their children and the evidence continues to mount that it is never too early to let children know about their origins. By engaging children in the co-creation of the interview guide, pilot findings are providing key insights into developing communication prompts and explanations that are child-sensitive.

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**Funding:** International Society of Nurses in Genetics (ISONG).

**Abstracts of Podium Presentations**

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**USE OF TECHNOLOGY IN PATIENT  
MANAGEMENT**

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**A BEST PRACTICE ASSESSMENT PROTOCOL  
FOR MOBILE TECHNOLOGY HOME VISITS**

*Kimberly Shea, Graciela Silva Torres, Bronwynne Evans*

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**STANDARD SMOKING CESSATION VERSUS  
ADDITION OF A MOBILE APPLICATION**

*Annie Huynh*

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**TWEET ME INTO OLD AGE: AGING WITH  
THE DIABETES ONLINE COMMUNITY**

*Michelle L. Litchman, Perry Gee, Christopher Snider*

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**MOBILE HEALTH TECHNOLOGY ENABLED N-OF-1  
TRIALS FOR CHRONIC PAIN: PATIENT EXPERIENCES**

*Robin Whitney, Deborah H. Ward, Maria Marois,  
Ida Sim, Christopher Schmid, Richard L. Kravitz*

# USE OF TECHNOLOGY IN PATIENT MANAGEMENT

## A Best Practice Assessment Protocol for Mobile Technology Home Visits

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**Purposes/Aims:** The purpose of this project is to develop and pilot a best practice protocol for remote assessment of patients in their homes, using mobile technology. The protocol aim is for remote healthcare providers to have a guide to assure the use of an integrated visualization approach.

**Rationale/Background:** Mobile devices such as phones and tablets are frequently used by people of all ages for social visits and can be used for professional visits as well. Skype, Google + Hangout and many other, more secure, meeting software's are being used increasingly to assess patients in their homes. Remote visits using such software are especially beneficial for extremely ill patients who cannot tolerate travel to a healthcare provider's office. Although live video can be used to "see" patients in their environment, cameras are limited to a targeted view. Several limited views are necessary to enable a healthcare provider to assess the whole person. A protocol that will remind the healthcare provider to use an integrated approach, defined as considering social, emotional, mental, home environment and physical well-being of patients (Houston and Cowley, 2002), is needed. Shea and Effken (2008) describe strategies for establishing trust during the remote visit, in addition, best practice protocols are needed to assure the use of an integrated approach that can prompt a holistic assessment that can also empower patients.

**Brief Description of Best Practice:** The protocol was developed using a checklist based on an Empowerment Framework (Kuokkanen, 2000) that supports an integrated approach to home health visits. The checklist includes items to observe in four areas of concern: *patient physical characteristics, treatment equipment functioning, environmental quality and medications available*. When visualized by the remote nurse, these areas of concern aimed to trigger an integrated assessment, mirroring an assessment done when a home health nurse physically visits the home. The checklist was piloted with 6 home health dyads using Mini iPads with supporting straps that enabled the caregiver to easily manipulate the device while displaying the items that the nurse requested. The Mini iPads have been found to be useful and easy to use (Shea, Silva-Torres & Evans, 2015). HIPAA compliant Lifesize meeting software captured the images and Verizon cellular service transmitted the video. The remote nurse visualized the patient and evaluated areas of concern for items to be observed.

**Outcomes:** Items identified in this study that required addition to the checklist areas of concern were: 1) *patient characteristics*: breathing (rates, depth), skin (color, turgor, integrity), distress (hand and facial expression), and positioning in bed; 2) *treatment equipment functioning*: urinary collection (quantity and quality), oxygen delivery (rate, placement of tubing), feeding tools (electronic or mechanical), evidence of non-medical therapies (fans, music, massage, etc.); 3) *environmental quality*: cleanliness, lighting, safety, and bedding; and 4) *medications available*: types, dosages, and administration organization.

**Conclusion:** The additions to the checklist resulted in an integrated protocol to guide remote home visits, providing a comprehensive, detailed list of items to support clinical decision making.

# USE OF TECHNOLOGY IN PATIENT MANAGEMENT

## Standard Smoking Cessation Versus Addition of a Mobile Application

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**Purpose:** To assess the effectiveness of standard tobacco cessation education versus standard tobacco cessation education plus the *No Nonsense*© mobile application for patients.

**Background:** Tobacco use, especially smoking, poses an enormous health care threat to the public. Tobacco use has been embedded as acceptable in American culture. Research indicates tobacco use is linked to many illnesses and premature death. Smoking has unhealthy consequences for non-smokers through second-hand smoke exposure.

Primary care providers have “golden opportunities” to intervene since they encounter numerous tobacco users during office visits. Primary care providers have access to effective therapies and interventions, as outlined in evidence-based clinical practice guidelines. However, variations in primary care practice and inconsistent tobacco cessation education creates barriers to success in smoking cessation. With modern technological advances, mobile technology is a useful tool to provide consistent educational assistance.

**Methodology:** Descriptive, quantitative, exploratory design was utilized. The null hypothesis was that there would be no difference between those accepting a prescription who had conventional tobacco counseling based on USPSTF and those who had conventional tobacco counseling based on USPSTF plus the *No Nonsense* application. The research was conducted in a physician’s private clinic. The effectiveness of standard tobacco cessation counseling in primary care was measured for 10 days. Then, a new standard of care was implemented and the effectiveness of tobacco cessation counseling enhanced with the *No Nonsense* application was measured for 10 days. A total of 49 patients participated in the research, 29 subjects with standard counseling and 20 with the enhanced counseling. Data were analyzed using Predictive Analytics Software 20.0.

**Results:** Subjects ranged in age from 21-65, 86%, of women accepted a prescription, but only 15% of men did,  $2(1) = 9.38$ ,  $p = .002$ , ES = 70%, 95% CI [25%, 86%]. Eighty percent of non-Hispanic patients accepted a prescription, but only 27% of Hispanics did,  $2(1) = 4.44$ ,  $p = .04$ , ES = 42%, 95% CI [2%, 71%]. All of the patients (100%) who had previously attempted to quit accepted a prescription, but only 29% of those who had never attempted to quit did,  $2 = 5.29$ ,  $p = .02$ , ES = 71%, 95% CI [10%, 87%]. Three of 29 patients (10%) who received standard tobacco cessation counseling accepted a prescription to assist with quitting tobacco, while eight of the 20 (40%) who received counseling using the *No Nonsense* application, accepted a prescription,  $2(1) = 5.98$ ,  $p = .01$ . The enhanced counseling was most effective among non-Hispanic patients ( $p = .04$ ), women ( $p < .01$ ), moderate smokers ( $p < .01$ ), and patients who had attempted to quit before ( $p = .02$ ).

**Nursing Implications:** The results indicate that an application such as *No Nonsense* can be used to increase the effectiveness of tobacco cessation counseling in primary care. Therefore, primary care providers not only need to use standard smoking cessation education, but incorporate a mobile application like *No Nonsense* to assist their patients in stopping smoking. Additional research needs to be conducted on which application enhances stopping smoking in patients best.

# USE OF TECHNOLOGY IN PATIENT MANAGEMENT

## Tweet Me into Old Age: Aging with the Diabetes Online Community

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**Purpose:** The purpose of this paper is to: 1) assess the use of tweet chat data as a method for analyzing the patient perspective and 2) examine the thoughts and concerns individuals with diabetes having regarding aging.

**Background:** Individuals with diabetes are increasingly accessing social media to engage in conversations with peers. Tweet chats, scheduled discussions on Twitter using a pre-identified hashtag and topics or questions, are occurring to have discussions about diabetes. The #DSMA (Diabetes Social Media Advocacy) tweet chat, a component of the diabetes online community, occurs weekly.

**Methods:** This qualitative descriptive study was conducted by examining a #DSMA tweetchat focused on diabetes and aging. Five topical questions included: 1) How do you define successful aging with diabetes? 2) What are your concerns about aging with diabetes? 3) How can healthcare providers help or hinder successful aging with diabetes? 4) How can technology help or hinder successful aging? and 5) How can the diabetes online community support you and your diabetes as you age? Symplur Signals, a healthcare based social media analytics tool, was used to pull individual tweet data and associated analytics related to the scheduled tweet chat. Individual tweets and conversations were analyzed using qualitative content analysis.

**Results:** The #DSMA tweet chat focused on diabetes and aging included 494 tweets from 59 individual twitter handles. Of those individual twitter handles, 61.5% were patients and 23.1% were caregivers/advocates. Sentiment analysis indicated that 71% of the tweets were positive. Themes from the analysis include: 1) concern about personal decline now and in the future (complications, cognition, feeling older than peers), 2) worry about access to treatment (pumps, continuous glucose monitors, insulin), 3) desire for personalization of care (health care provider more educated about diabetes and aging, patient education), and 4) interest in lifelong online peer support to facilitate diabetes self-management.

**Implications:** Focused discussions that engage patients, such as the #DSMA tweet chat, are adequate sources to gain information about the patient perspective. This research found that patients do have concerns about aging with diabetes, but were able to have a positive conversation about a potentially negative topic. Patients are concerned that healthcare providers may not be adequately trained to support their diabetes into old age, especially in the case of type 1 diabetes. Older individuals in online groups have opportunities to provide anticipatory guidance to others about aging with diabetes through personal experience. Patients already engaged in the diabetes online community have a strong sense of group cohesion and planned to continue to connect with one another into old age in order to support one another. Healthcare providers should consider the positive effects the diabetes online community may have on individuals now and into the future.

# USE OF TECHNOLOGY IN PATIENT MANAGEMENT

## Mobile Health Technology Enabled N-of-1 Trials for Chronic Pain: Patient Experiences

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**Purpose:** To describe patient experiences using a mobile health technology application for individualized (n-of-1) comparative effectiveness trials to manage chronic pain.

**Background:** Chronic pain affects millions of Americans and is difficult to manage, for both patients and clinicians. A smart phone app was developed to test the feasibility of patients and clinicians carrying out individually-tailored (n-of-1) comparative effectiveness trials. Two hundred fifteen (215) patients with chronic musculoskeletal pain were enrolled, with 107 in a control group receiving usual care in a primary care setting, while 108 intervention patients were supplied with the phone-based app. Intervention patients worked with their clinicians to create small comparative treatment trials, and tracked symptoms via the app. Results were made available for viewing in a variety of displays, and a final results review visit with each intervention patient and clinician dyad was held. Multiple outcomes were measured, including pain intensity, adherence and patient satisfaction. In addition, patients from the intervention group were invited to participate in qualitative interviews. We report on the patient interviews.

**Methods:** Purposively sampled patients from the intervention group (n=33) completed semi-structured interviews consisting of questions and open-ended prompts, which were developed a-priori to assess usability and acceptance of the app, as well as understanding of individualized (n-of-1) study results. Interview data were organized using Dedoose Version 7.1.3. A thematic analysis was conducted to identify themes related to patient experiences and perceptions.

**Results:** Patients reported complex symptom management considerations and therapy decisions. Themes identified included 1) the value of documenting symptoms 2) patients' use of data to establish their own treatment approaches 3) the credibility added by the data in communicating with clinicians and 4) patients' clear desire for simple presentations of data. Patients found value in the daily documentation of pain symptoms and medication side effects, because it promoted adherence and shed light on lifestyle factors that contributed to these outcomes (e.g., exercise and sleep). The process of recording and tracking these outcomes motivated some to experiment with changes to their pain management regimen. Documentation of results gave patients confidence in communicating with clinicians. Patient recommendations for improving the app included the need to simplify the presentation of results and provide a brief summary that would better support decision-making. Implications for chronic condition management and population health concerns are discussed.

**Implications:** Patients reported many benefits to participation in a mobile health technology-enabled N of 1 trial for chronic pain management. As the science of symptom management grows and deepens, patient control and use of data will become an even larger part of clinical care and population health. Nurses care for patients with chronic pain at multiple levels: at the bedside, through institutional management, through care-standard testing and setting, as well as at the system design and policy level. Understanding patients' experience is essential to re-shaping delivery systems to hold patients at their center.

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**Funding:** National Institute for Nursing Research (RO1 NRO1 3938).



**Abstracts of Podium Presentations**

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**THE VULNERABLE PEDIATRIC PATIENT**

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SERVING VULNERABLE CHILDREN: THE ABCS  
OF CLINICAL PLACEMENTS IN SCHOOLS

*Samantha Blackburn*

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EXPERIENCES OF FOSTER PARENTS CARING FOR  
CHILDREN MOVING FROM HOSPITAL TO FOSTER HOME

*Max Veltman*

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EXPERIENCES OF GRANDPARENTS CARING FOR  
GRANDCHILDREN AFFECTED BY HIV/AIDS IN UGANDA

*Schola Matovu, Margaret Wallhagen*

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THE ASSOCIATION OF INTIMATE PARTNER VIOLENCE  
AND MARITAL STATUS ON CHILD MALTREATMENT

*Janet H. Bonome, Asma A. Taha*

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TRAUMA AT THE CELLULAR LEVEL: TWINS EXPOSED  
TO INTIMATE PARTNER VIOLENCE IN ADOLESCENCE

*Candace W. Burton*



# THE VULNERABLE PEDIATRIC PATIENT

## Serving Vulnerable Children: The ABCs of Clinical Placements in Schools

*Samantha Blackburn, RN, MSN, PhD*  
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*School of Nursing*  
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*Sacramento, CA*

**Purpose:** Schools of nursing can improve the health of vulnerable children by placing nursing students in schools for their community health clinical practica. This session will outline effective practices for partnering with K-12 public schools, so that nursing students and school administrators, health providers, children, and their families feel a direct benefit from the partnership.

**Rationale:** Many children require life-saving medical care, supportive mental health services, and chronic disease management at school. Schools are also an ideal setting for providing health promotion programs to establish healthy behaviors that can lead to improved long-term health outcomes. However, some nursing faculty do not yet understand how to form and sustain partnerships with schools, which could lead to a missed opportunity for nursing students to learn how to assess and care for our most vulnerable children and families.

**Description:** Working effectively with school districts requires that nursing faculty focus on the ABCs: attendance, behavior, and collaboration. *Attendance:* many schools focus on improving student attendance because chronic absenteeism is directly associated with poor academic achievement, school dropout, and unemployment later in life. These academic and employment outcomes are also associated with worse health outcomes. Nursing students can help collect and analyze data on student absenteeism, assess why students are absent, and plan and implement interventions to address these issues (e.g., inadequate access to physical or emotional support services). *Behavior:* first and foremost, schools are responsible for student safety, and see health services as an important component of liability prevention. Nursing students can collect and analyze data on student misbehavior, identify some of the root issues contributing to misbehavior or lack of safety at school, and plan and implement interventions to address these issues (e.g., bullying). *Collaboration:* as the saying goes, “it takes a village to raise a child.” Schools sometimes reject potential service providers who seem to want to come in and do things “to” their children, without taking the time to learn about existing programs and processes. Nursing faculty and students alike should collaborate with school personnel to find out how nursing students can best contribute to each school’s health program, whether it be through direct service, case management, or health promotion efforts.

**Outcomes:** Building sustainable partnerships with schools offers multiple benefits. Children – some of whom don’t receive health care outside of school – can benefit from the individualized attention that school nurses rarely have the time to provide. Nursing students learn how to develop and implement community health programs while growing their understanding of the inter-relationships between schooling, social determinants, and health outcomes. Schools of nursing benefit from more numerous and sustainable community health clinical sites.

**Conclusion:** By focusing on the ABCs of working with schools, nurses can learn how to better support student attendance and behavior, establish mutually beneficial partnerships, and contribute to children’s educational success and health outcomes. Schools of nursing will also help prepare a new generation of school and public health nurses who can take a leadership role in establishing stronger community health programs in the future.

# THE VULNERABLE PEDIATRIC PATIENT

## Experiences of Foster Parents Caring for Children Moving from Hospital to Foster Home

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**Purposes/Aims:** The purpose of this study was to identify and explore the common issues that foster parents encounter as they care for children making the transition from the acute care setting to the foster home.

**Rationale/Conceptual Basis/Background:** For many reasons, children with significant health issues and complex care needs are placed in foster care while they are hospitalized. This often requires the child welfare caseworker to recruit a qualified foster parent to care for the child as they are discharged from the hospital into the foster parent's home. Yet while the incidence of this phenomenon seems to be increasing, there is a scant amount of published research devoted to the specifics of what this experience is like for the foster parents who provide the necessary care for these children. In the past, children who were victims of serious maltreatment or who were born with significant health conditions would not survive. But advances in medical technology are allowing more of these children to survive and leave the hospital. Caseworkers often find it challenging to recruit qualified foster parents to take on the duties of caring for these children as they often have demands that require significant amounts of time, energy and resources. Previous research involving foster parents who work with children with Special Health Care Needs (SHCN) has described many challenges faced by foster parents including communication with caseworkers and/or health care providers, transportation demands for foster parents, and problems dealing with the various health care, legal and child welfare systems. These issues are a significant factor in the growing attrition rate of qualified foster parents, yet virtually nothing is known about how the hospital discharge phenomenon plays into these issues.

**Methods:** Interpretive Description (ID) was the primary methodology guiding this study. 18 qualified participants were interviewed using several open-ended questions, data was collected, the ideas and understandings were clustered, sequenced and woven together allowing patterns, themes and sub-themes to be identified and described.

**Results:** The results produced several themes. Communication breakdown with social services, lack of critical information prior to fostering and conflicts with child welfare policies were some of the challenging aspects of the experience of participants. Feeling supported by health care workers and making a positive impact on both the foster child and the biological parent were noted as positive themes. The motivation to foster or continue to foster children was also a significant theme coming from participants.

**Implications:** This study adds knowledge to the experience of foster parents who work with children with special health care needs. This study adds insight into the experience foster parents have when working with nurses, physicians, child protection workers, and the various systems (child welfare, health care, legal, etc..) that foster parents deal with while ensuring quality care of the children moving from the hospital into the foster home.

# THE VULNERABLE PEDIATRIC PATIENT

## Experiences of Grandparents Caring for Grandchildren Affected by HIV/AIDS in Uganda

*Schola Matovu, RN, BSN  
Doctoral Candidate*

*Margaret Wallhagen, RN, PhD, GNP-BC, AGSF, FGSA, FAAN  
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**Purpose/Aims:** The purpose of dissertation grounded theory study was to seek understanding of the experiences and mental health of 50-years and older Ugandan grandparents who provide primary care for their grandchildren that are affected by HIV/AIDS. It's specific aims were to: **1)** Explore the range of factors that influence the experience of older Ugandan grandparent caregivers of grandchildren affected (directly or indirectly) by HIV/AIDS; **2)** Describe the caregivers' perceptions of how their decision to care for their grandchildren affects their health, quality of life, and relationship satisfaction with significant others; **3)** Explore the prevalence of mental health symptoms in this population using the Cultural Formulation Interview of the DSM IV.

**Background:** Despite the overall global decrease in AIDS-related deaths, sub Saharan Africa remains the most affected region with death rates between 1.4 -1.3 million in 2001 and 2009 respectively among adults and children (UNAIDS, 2012). In Uganda, as in the rest of sub-Saharan Africa, the AIDS epidemic has placed a tremendous burden on elderly caregivers. Extended family members, particularly grandparents, with limited resources have been increasingly reported to provide care for their infected adult children and a growing number of orphaned grandchildren. Despite the acknowledgement of elderly caregivers as the backbone and safety net of the African family in this HIV/AIDS era, very limited research has been conducted to explore the impact of this grandparental burden on the individual physiological and mental health of this elderly population.

**Methods:** Using Grounded Theory qualitative method, semi-structured qualitative interviews were conducted with 32 grandparents recruited from general population impacted by the HIV/AIDS epidemic. The one-on-one interviews are audio-recorded, transcribed and analyzed using both open and axial coding as well as reflexive and analytic memoing congruent with the methodology.

**Results:** Narratives revealed underlying factors that influenced grandparents' caregiving experiences. The findings revealed that this caregiving phenomenon was embedded in complex socio-economic, cultural and familial dynamics and constellations. Themes on *Loss*, *Social Network* and *Caregiver burden* emerged. The caregiving burden reported included financial, emotional and physical burden.

**Implications:** Therefore, the overall findings provide an explanatory model upon which clinicians can create care plans and researchers design family-centered and community-based interventions or tailor social services such as childcare and respite care for these older caregiving grandparents.

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**Funding:** Grant # 2T06SM060559-04 of the SAMHSA (MFP) and the UCSF President's Dissertation-Year Fellowship.

# THE VULNERABLE PEDIATRIC PATIENT

## The Association of Intimate Partner Violence and Marital Status on Child Maltreatment

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**Purposes/Aims:** The purpose of this study was to identify aspects of family structure that may shape both maternal and paternal risk of engaging in child maltreatment. A second aim was to test the relationships among child maltreatment, intimate partner violence (IPV), and marital status.

**Rationale/Conceptual Basis/Background:** Child maltreatment is a significant public health problem affecting at least one of five children in their lifetimes (Corso, Fang, & Mercy, 2011). According to the United States Department of Health and Human Services (USDHHS), in 2013 there were 678,932 reported cases of child maltreatment in the 50 states and the District of Columbia (USDHHS, 2015). The National Data Analysis System showed that 2.04 per 100,000 children, an estimated 1,520 children nationally, died as a result of maltreatment (USDHHS, 2015). In the state of California, 121 child maltreatment fatalities were reported, with newborn to three years being the most vulnerable age. This group accounted for 73.9% of fatalities due to maltreatment, with 46.5% occurring during infancy.

The act of child maltreatment involves more than the child. Marital support acts as a buffer against the impact of non-marital stressors on health behaviors. It has been shown that father's support of mothers during pregnancy can produce a healthier pregnancy and birth (Hohmann-Marriott, 2009). As such, the support of fathers can offer important psychological and emotional support to women during pregnancy and delivery.

**Methods:** Children with injuries of suspected abuse are assessed by the division of Pediatric Forensics at Loma Linda University Children's Hospital. However, only those children considered to be victims of violence and who had an admitting diagnosis of non-accidental trauma were included in this study. Children who were victims of non-accidental trauma but did not have IPV present in their households served as controls. Approximately 200 cases of child maltreatment were assessed and an average of 8 fatalities were seen annually at LLUCH. Patient's data from the years 2008-2011 were analyzed. All fatality cases in the four-year period ( $n = 28$ ) were included in the sample. A random sample of 122 of the non-fatality cases was collected to have sufficient sample size. A total of 150 subjects were assessed.

**Results:** Results from a logistic regression indicated that a high frequency of IPV in a family predicted the severity of child maltreatment ( $OR = 2.70$ , 95%  $CI = [1.66, 3.45]$ ,  $p < 0.05$ ). Multiple linear regression of the child's Glasgow Coma Score (GCS) was conducted on IPV and marital status. IPV was a significant predictor of the severity of child maltreatment ( $B = 0.11$ , C.I.  $[0.01, 0.23]$ ,  $p < .05$ ).

**Implications:** The findings from this study highlight the need for increased public health support for children affected by child maltreatment. Children exposed to IPV are nine times more likely to be neglected (Hamby, Finkelhor, Turner, & Ormond, 2010). Our study found that a high incidence of IPV was a significant predictor of child maltreatment. If intimate partner violence is recognized, child maltreatment intervention can be implemented decreasing the potential for a range of negative outcomes.

# THE VULNERABLE PEDIATRIC PATIENT

## Trauma at the Cellular Level: Twins Exposed to Intimate Partner Violence in Adolescence

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**Purposes/Aims:** The health impact of intimate partner violence during adolescence—or teen dating violence (TDV)—is not well described or well contextualized in terms of developmental and biobehavioral outcomes. The unique intersection of growth, development, and socialization occurring in adolescence imbues in particular with unique and pernicious risks, both long and short-term. The goal of this study was to explore the biobehavioral sequelae of TDV. Aims were to examine the relationships among epigenetic alterations, acquired chromosomal changes, biologic stress measures, and biobehavioral characteristics in a sample of female, monozygotic twin pairs ages 18-21, discordant for an experience of TDV.

**Rationale/Conceptual Basis/Background:** Intimate partner violence has been shown to correlate with numerous mental and physical health conditions, but the behavioral and biologic pathways that lead to these conditions are not yet well elucidated. Using a biobehavioral framework, we explored differences between monozygotic, female twins with discordant histories of TDV. Such a same provides a near-perfect genetic and cellular control for changes related to a particular experience.

**Methods:** Participants were recruited via the Mid-Atlantic Twin Registry and at the Research Section of the annual Twin Days Festival held in Twinsburg, OH. Using electronic and paper surveys, we assessed individual and environmental characteristics, TDV experiences and severity, sleep status, exercise habits, social support, perceived daily stress, depressive and trauma symptoms. Peripheral blood samples were collected to quantify mean telomere length, acquired chromosomal instability and acquired genome-wide DNA methylation changes.

**Results:** Results indicate that Beck Depression Inventory-II mean score was higher among the affected women ( $m=32$ ,  $n=16$ ,  $sd=8.5$ ) than among the unaffected women ( $m=26.82$ ,  $n=11$ ,  $sd=5.08$ ) and that T/S ratios (mean telomere length) were higher among the unaffected than affected women.

**Implications:** The findings from this study stand to provide nurses and other health care providers with understanding of potential symptom or illness clusters and other indicators of long-term health related to experiences of TDV. Such understanding will allow providers to both better support affected women and identify women who may have undisclosed histories of TDV or IPV and therefore be at risk for related health problems.

**Abstracts of Podium Presentations**

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**WHAT HISTORY CAN TEACH US**

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50 YEARS OF THE *COMMUNICATING NURSING  
RESEARCH* CONFERENCE: HISTORICAL ANALYSIS  
*Elaine Sorensen Marshall*

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THE ROLE OF THE *USS SOLACE* IN THE CARE  
OF CASUALTIES, DECEMBER 1941  
*Gwyneth Milbrath*

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DENVER DEU COLLABORATION:  
TEN YEARS AND GOING STRONG!  
*Lisa S. Zenoni, JoAnn Crownover, Susan Zabala*

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THINKING UPSTREAM AT 25: A SEMANTIC  
REVIEW AND PROTOTYPE CONCEPTUAL MODEL  
*Patricia Butterfield*

## WHAT HISTORY CAN TEACH US

### 50 Years of the *Communicating Nursing Research* Conference: Historical Analysis

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**Purpose:** To examine the history, progress, and significance of the annual *Communicating Nursing Research* conference of the Western Society for Research in Nursing of the Western Institute of Nursing across its 50 years.

**Background:** In 1956, the Western Interstate Commission on Higher Education (WICHE) launched the first regional organization to advance nursing: the Western Council on Higher Education for Nursing (WCHEN). It later became the independent organization, the Western Institute of Nursing (WIN). From the beginning, research development and dissemination were among the highest priorities of the organization. Thus, in 1968, the first *Communicating Nursing Research* conference was convened. It was among the first such annual meetings in nursing, and soon became a model for the entire discipline. It is important to understand the development and subsequent impact of the conference as well as to know its leaders as models in order to continue the advancement of nursing research to improve health care.

**Methods:** Descriptive historical method included analysis of primary sources, including published direct written accounts, conference proceedings, and archival documents of the Western Institute of Nursing. Secondary sources included published sources, such as journal articles and documents contemporary to events explored. Validation and review was performed by selected senior members of WIN who had participated in much of the 50 year history of the conference.

**Results:** The *Communicating Nursing Research* conference reflects the vision of pioneer nursing leaders in the West who were risk-taking, attentive to resources and quality, daring to take a futuristic view, and committed to advancing the science and practice of nursing. It started with one keynote address and just five presentations. From the beginning, the conference included (1) broad regional representation, (2) research presentation and critique, (3) mechanisms for development and recognition of new researchers, and (4) a significant edited volume of proceedings. Across its 50 years, the conference has grown to include (1) participants who have become legends and leaders in the discipline, (2) presentations that have become seminal classic works in the literature, (3) awards and recognition at all levels of research and leadership, and (4) increased opportunities for professional development, socialization, and collaboration.

**Implications:** The *Communicating Nursing Research* conference continues to be a national and international exemplar for effective research dissemination and professional networking and collaboration. Its foundation within the Western Institute of Nursing also provides a model for stability, quality, effectiveness, and stature of the regional organization.

# WHAT HISTORY CAN TEACH US

## The Role of the *USS Solace* in the Care of Casualties, December 1941

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**Purpose:** Much has been written about the military events of December 7, 1941; however, little has been documented about the nurses' work and experience in Pearl Harbor, Hawaii. This paper describes the role and experience of Chief Nurse Grace Lally, and the twelve nurses aboard the *USS Solace* that cared for Navy sailors injured during the Japanese attack on Pearl Harbor, Hawaii.

**Background:** December 7, 2016 marked the 75<sup>th</sup> anniversary of the “date that will live in infamy” when Pearl Harbor was attacked by the Japanese, causing the United States to declare war on Japan. During the attack on Pearl Harbor, over 2,400 Americans sacrificed their lives for their country, and hundreds of others were wounded. The Naval casualties at Pearl Harbor exceeded those in the Spanish American War and World War I combined. Without warning, preparation, or training in the care of war casualties, the thirteen nurses aboard the *USS Solace* had to care for hundreds of severely burned sailors.

**Methods:** Traditional historical methods with a social and military history framework were used in this investigation. Primary data sources include oral histories, historical documents, and photos from the Navy Bureau of Medicine and Surgery, the Navy Office of History, and the Navy Nurse Corps. Secondary sources include articles written in the *American Journal of Nursing* and other peer-reviewed publications.

**Results:** The *USS Solace* was afloat in Pearl Harbor during the Japanese attack. The nurses remembered watching as the Japanese dropped bombs and rained bullets down on the US Pacific Fleet. Although the *Solace* was unharmed during the attack, nearby battleships including the *USS Arizona* burst into flames as sailors desperately jumped overboard into the oil-covered water. The nurses quickly discharged and relocated their patients to make room for casualties while preparing supplies and medications. Hundreds of casualties were hoisted aboard the *Solace* as the nurses assisted in triage, the operating room, and on the wards. Nurses gave morphine to relieve pain, administered life-saving blood plasma to prevent shock, and treated the severely burned with sulfa and tannic acid to prevent infection. The nurses, corpsmen and physicians aboard the *Solace* worked tirelessly while under attack, and their collaboration and hard work saved lives and eased the suffering of the sailors injured during the attack on Pearl Harbor.

**Implications:** Mass shootings, disasters, terrorism, and war continue to be an almost common occurrence locally and globally. Nurses in both military and civilian contexts have the potential to be on the front lines of a response to a disaster in their communities and workplace. Many lessons can be learned from nurses' experiences in past disasters. The story of the nurses on the *USS Solace* can be used to inform the training, preparation, and resiliency of nurses who care for victims of trauma. As we remember Pearl Harbor, we must not forget the women who bravely cared for those suffering and dying for their country.



## WHAT HISTORY CAN TEACH US

### Denver DEU Collaboration: Ten Years and Going Strong!

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*Susan Zabala, BSN, RN, CBN  
Clinical Educator  
Medical Surgical Division,  
APS, and Bariatrics  
Saint Joseph Hospital  
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**Purpose/Aims:** The aim of this project is to describe the evolution of an ongoing academic practice collaboration to provide excellent clinical learning experiences for both students and staff.

**Rationale/Background:** Both education and practice agencies face significant challenges. During an ongoing faculty shortage, nursing education is challenged with finding available quality clinical sites for their students. Many students note the gap between the academic setting and clinical practice. When working with students from multiple schools during clinical rotations, staff nurses often verbalize a lack of support from faculty while continuing to provide care for their typical patient load. To better meet the needs of both education and practice, Regis University and Saint Joseph Hospital created a partnership in 2006. The founding members identified the importance of the clinical nurses' role in developing students' professional skills and knowledge. They drew upon the experiences of Flinders University in South Australia and the University of Portland in establishing a dedication education unit (DEU) model.

**Undertaking/Best Practice/Approach/Methods/Process:** Leaders from both the school and hospital identified two initial DEUs to be used for students during their senior practicum clinical experience. Over time, significant changes have occurred in both settings. Changes in the hospital include merging of specialty units and shifting expectations, evolving leadership, and relocating the hospital in 2012. Changes in the school have been similar including retiring faculty and administration and revising the curriculum. Despite these changes, the DEU partnership remains strong. The current DEUs on Medical and Surgical units are considered excellent models for clinical education by the hospital and the school. Students complete summer practicum, medical surgical clinical rotations, and senior practicum experiences on these units. The managers interview potential students to ensure fit with the units. Representatives from both the school and hospital have formed a DEU steering committee, which meets quarterly to review identified concerns, future plans, and project goals.

**Outcomes Achieved/Documented:** Over the past 10 years, both the hospital and school report positive results. Despite challenges in obtaining outcome numbers due to leadership changes, the hospital reports hiring 21 of the DEU new graduates since 2012 with 13 remaining employed by the larger organization, a retention rate of 52%. School benefits include ongoing, quality placements for students and scholarship opportunities. Unit benefits include established protocols for student progression and familiarity with returning students. Staff nurses report attracting staff to the units, being more comfortable with teaching, growing their mentoring skills, and creating an open learning environment for everyone. Student outcomes include being more prepared for clinical, feeling part of the team, progressing faster in meeting course expectations, and focusing care on the patients. New graduate outcomes include easier transition to practice and decreased orientation time.

**Conclusion:** Open communication and flexibility between academic and practice partners can provide ongoing benefits despite significant changes. Both the school and hospital look forward to new opportunities and the ongoing partnership.

# WHAT HISTORY CAN TEACH US

## Thinking Upstream at 25: A Semantic Review and Prototype Conceptual Model

*Patricia Butterfield, PhD, RN, FAAN*

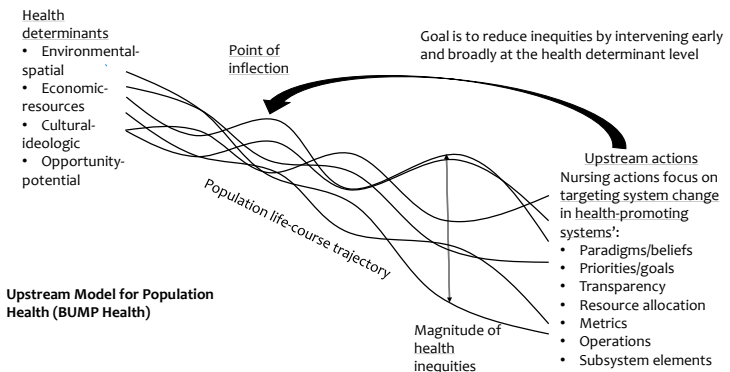
**Purpose/Aims:** This paper addresses: 1) a semantic review of the concepts ‘thinking upstream’ and ‘upstream’ as characterized by nursing authors, and 2) a new conceptual model (BUMP Health) focused on strategically re-orienting nursing actions upstream. The overall aim is to strengthen conceptual underpinnings of nursing at the population health level through the development and dissemination of models that emphasize actions within nursing’s purview. The long-term goal of this approach is to increase conceptual capacity in community/public health nursing and others who practice at the population level.

**Description/Definition of Theory/Concept:** The concept of ‘upstream’ was introduced into the vernacular of medicine in the 1970’s and into nursing in 1990. First introduced as parable, upstream was used as reframing device in the characterization of health problems; implicit was the notion that health providers, though well-intended, were trapped in a system that provided care within a narrow bandwidth of reactive (versus preventive) strategies. Nurses and physicians were characterized as so busy rescuing patients from the river of illness that they never had time to look upstream to see what pushed them in. Use of upstream characterizations in the literature waxed and waned prior to the passage of the 2010 Affordable Care Act. Recently upstream language has become increasingly prominent in national policies addressing health system transformation. However, despite this emphasis, few conceptual tools/models have been developed for those who wish to critically analyze population health using an upstream lens. To address this gap and provide an additional conceptual tool, BUMP Health was developed. Still at the prototype level, the model emphasizes strategic thinking in developing system-level actions, the weighing of alternative actions, points of inflection, and the selection of actions most likely to yield health improvements.

**Internal Consistency of the Theory/Concept:** The concepts of upstream and thinking upstream have evolved since their introduction into the literature, changing concurrently with advancements in the conceptual foundations of nursing. Recent references reflect more dynamic versus dyadic (e.g., up- vs. downstream) interpretations of upstream and stronger associations with social/environmental health determinants and health equity-related topics. BUMP Health concepts include: 1) multi-outcome trajectories of disease, 2) health inequities, and 3) approaches to system-level change.

**Logic Linking Theory/Concept to Practice/Research Problem:** Upstream perspectives and BUMP health have broad applicability to a number of health problems. Although yet to be tested, it is logical that the model is best suited to the analysis and deconstruction of problems that have deep roots in political and social economy; such drivers have historically perpetuated health inequities. Issues would include, but are not limited to, wage and employment policies, healthcare access, and substandard housing.

**Conclusions, Including Utility to Theory/Concept:** Continued advancements in healthcare transformation will require that nurses tap into their full potential to enact change. Such work can be accelerated through the use of conceptual tools that facilitate both a broader awareness of health as well as a sharper skill set for change. The reversal of inequities is predicated on an awareness of how, when, and where opportunities for change are hand.





**Abstracts of Poster Presentations**

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**BIOLOGICAL MEASURES**

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THE RELATIONSHIP BETWEEN WORK PLACE RACISM  
AND OBESITY IN AFRICAN AMERICAN WOMEN

*Deborah F. Curtis*

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COMPARISON OF TEMPERATURE MEASUREMENTS  
ON AN ACUTE CARE TRAUMA UNIT

*Julie Fitzwater, Michael Schippers, Beth Norman*

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AEROBIC EXERCISE IMPROVES CARDIAC AUTONOMIC  
FUNCTION FOR PATIENTS WITH ICD

*Afnan Hammad Alswyan, Di Wang, Makayla Cordoza,  
Cynthia M. Dougherty, Robert L. Burr*

## BIOLOGICAL MEASURES

### The Relationship between Work Place Racism and Obesity in African American Women

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**Purpose:** African American (AA) women have a higher rate of obesity when compared to Caucasian women, 57.6 percent in AA women, and 33.5% in Caucasian women.<sup>1</sup> The rate of obesity in AA women continues to climb despite health promotion education and interventions.<sup>2,3</sup> Obesity rates continue to rise independent of socioeconomic position indicating socioeconomic status is not a predictor.<sup>4</sup> The potential role of work place racism (WPR) for obesity has not been studied in AA females. Shiftwork (SW) has been associated with weight gain<sup>5,6</sup> but this has not been studied in AA women in relationship to WPR or obesity. The effects of WPR and SW have been independently correlated with stress<sup>7</sup>, and chronic stress has been correlated with obesity.<sup>8,9,10</sup> The primary aim of this pilot study is to examine the relationship between WPR and obesity in AA women. Two sub-aims are to evaluate chronic stress as a potential mechanism underlying this relationship and to evaluate potential moderating effects of SW.

**Conceptual Framework:** This study is based on three theoretical frameworks: the theory of allostatic load; intersectionality; and ecosocial epidemiology. Allostatic load describes the biological response to chronic stress and its physiological consequences.<sup>11</sup> The second theoretical framework guiding this study is intersectionality; this theory posits that the effects of gender and race are not separate or additive but interactive.<sup>12</sup> This theory is ideal for health disparities research in African American women as it is rooted in black feminism and critical race theory.<sup>13</sup> Ecosocial theory, an emerging theory developed by Nancy Krieger, integrates biological and social processes with a historical and ecological approach to explain social inequalities and resultant health disparities.<sup>14</sup> **Methods:** This is a cross sectional correlational study to examine the association of racism, shift work and chronic stress with obesity in African American nurses. Recruitment is aimed at African American nurses greater than 25 years of age who are employed in any area of nursing for one year or longer. Recruitment is by email, referral, or direct approach. Data acquisition is by self-report questionnaires, blood, and saliva biomarkers of stress and anthropometric measures. Statistical analyses will include descriptive statistics, correlations, and stepwise logistic correlation.

**Results:** Recruitment is in process. I currently have data for n=20. Goal recruitment is n=90. Recruitment will close December 2016. Analysis of preliminary results is in process.

**Further Research:** Future research will include a larger longitudinal study to examine the effects of occupational racism and shiftwork on obesity and cardiovascular risk in African American and Hispanic working women and compare biological markers of stress with those of Caucasian workers. The long-term goal is to develop a work based, culturally sensitive behavioral intervention, and educational program to alleviate the effects of occupational racism and shiftwork thereby improving total worker health.

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## BIOLOGICAL MEASURES

### Comparison of Temperature Measurements on an Acute Care Trauma Unit

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**Purpose:** To determine the level of agreement between a reference electronic oral thermometer (reference device) and; a temporal artery thermometer, a non-disposable electronic thermometer (room device) and digital disposable thermometers via the oral and axillary routes.

**Background:** Registered nurses routinely perform assessment of body temperature in hospitalized patients. Accurate temperature measurements are essential to optimally guide patient care. Trauma patients may have injuries or neurological conditions that prohibit use of the oral temperature route. The accuracy of other temperature methods compared to oral measurements has not been thoroughly studied.

**Methods:** A method-comparison design was used to examine level of agreement between different methods of obtaining temperature using the Bland-Altman plot. Clinically acceptable level of agreement for each route compared to the oral reference device was  $\leq 0.5^{\circ}\text{C}$  and  $\text{SD} \leq 1^{\circ}\text{C}$ . After informed consent was obtained, bedside clinical nurses collected six temperature measurements from each participant using four devices. Temperatures were assessed in the same order and included; temporal artery, oral reference device, room device-oral, disposable-oral, disposable-axillary and room device-axillary. For comparison, the room and reference device were from the same manufacturer, and the same temporal artery and oral reference device were used for all patients. Temporal artery measurements were obtained using an Exergen ProTemporal Artery Scanner™, the reference and room device measurement were obtained using a Welch Allyn SureTemp Plus™ 692 thermometer, and the disposable device was the Medline™ Oral Digital thermometer. Measurements were obtained following manufacturer's directions for use.

**Results:** A total of 70 patients and 420 temperatures were included, and ages ranged from 18 to 87 ( $\pm$  SD 20.3) years, with 42 (60%) males. Reference oral temperatures ranged from  $36.2^{\circ}\text{C}$  to  $37.9^{\circ}\text{C}$  (mean  $36.8^{\circ}\text{C} \pm \text{SD } 0.30^{\circ}\text{C}$ ). When compared to the reference oral device, the limits of agreement and precision (bias  $\pm$  1 SD) for the test devices were; temporal artery:  $0.44^{\circ}\text{C} \pm 0.63^{\circ}\text{C}$ , room device-oral:  $-0.02^{\circ}\text{C} \pm 0.20^{\circ}\text{C}$ , disposable-oral:  $-0.02^{\circ}\text{C} \pm 0.40^{\circ}\text{C}$ , disposable-axillary:  $-0.29^{\circ}\text{C} \pm 0.51^{\circ}\text{C}$ , room device-axillary:  $-0.08^{\circ}\text{C} \pm 0.44^{\circ}\text{C}$ . The temporal artery scanner had 8 measurements  $> \pm 1^{\circ}\text{C}$  different from reference oral, and one measurement  $> \pm 2^{\circ}\text{C}$  different. The disposable thermometer had 1 oral and 5 axillary measurements  $> \pm 1^{\circ}\text{C}$  different. The room device had no oral and 1 axillary measurement  $> \pm 1^{\circ}\text{C}$  different.

**Implications:** When compared to the standard electronic oral thermometer, all devices were within the acceptable level of agreement and precision for the range of temperatures recorded. The temporal artery device had the most readings  $> 1^{\circ}\text{C}$ , with the lowest level of agreement compared to the other devices. Bedside nurses conducted this study in one acute care site mostly with nonfebrile patients and suggest further investigation of the temporal artery device in febrile patients may be warranted.

## BIOLOGICAL MEASURES

### Aerobic Exercise Improves Cardiac Autonomic Function for Patients with ICD

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**Purpose:** To outline the effects of a home-based aerobic exercise training program on autonomic nervous system function measured by heart rate variability (HRV), in patients with an implantable cardioverter defibrillator (ICD) who are at high risk for sudden cardiac arrest (SCA).

**Background:** Fatal ventricular arrhythmias are thought to be related to increased sympathetic and reduced parasympathetic mechanisms. Importantly, low HRV has been linked to higher cardiac mortality. Aerobic exercise training is a non-pharmacologic intervention that enhances parasympathetic function, potentially increasing HRV and stabilizing cardiac autonomic function.

**Methods:** 160 subjects who had received an ICD for primary or secondary prevention of SCA were randomized to 8 weeks of aerobic exercise training (EX) via home walking (1 hour/day, 5 days/week) at 60-80% of maximum HR, or to usual care with no exercise program (UC). HRV was calculated from 24-hour ECG Holter recordings of baseline heart rate and recordings taken after the EX program at 8 weeks. Parasympathetic HRV measures included: 1) percentage difference in adjacent normal R-R intervals exceeding 50 ms (pNN50), 2) root mean square of successive differences in normal R-R intervals (RMSSD), 3) high-frequency (HF) power, and 4) ratio of low-frequency to high-frequency (LF/HF) power. Change in aerobic capacity was measured using a modified Balke cardiopulmonary exercise test at baseline and after 8 weeks. ANOVA was used to evaluate group x time effects on aerobic capacity and HRV outcomes.

**Results:** EX=84 and UC=76 with prior ICD implant (40% primary 60% secondary prevention indication), mean age 55 ±12 years, 77.5% male, 84% Caucasian, 100% beta-blocked, and EF%=40% completed baseline and 8 week measures. Exercise significantly increased aerobic capacity over UC in peak VO<sub>2</sub> ml/kg/min,  $p=0.01$  (EX 26.4±7.1, UC 24.0±6.6); VO<sub>2</sub> at anaerobic threshold (AT) ml/kg/min,  $p=0.008$  (EX 22.4±6.1; UC 20.0±5.5); O<sub>2</sub> pulse  $p=0.054$  (EX 18.4±5.2; UC 17.1±5.0); and metabolic equivalents (METs),  $p=0.005$  (EX 7.6±2.0; UC 6.8±1.9). Parasympathetic measures of HRV improved significantly with EX in pNN50,  $p=0.03$  (EX 0.60±0.34, UC 0.41±0.91) and RMSSD,  $p=0.03$  (EX 1.15±0.28, UC 0.29±1.2), while HF power and LF/HF ratio did not improve significantly with EX. For those in the secondary prevention group, EX significantly improved pNN50 ( $p=0.01$ ) and RMSSD ( $p=0.01$ ). Primary prevention patients in the EX group did not experience significant improvements in HRV with aerobic training.

**Implications:** Home-based aerobic exercise training strenuous enough to increase aerobic capacity in persons with an ICD was associated with improved HRV, primarily for those receiving an ICD for secondary prevention indications. Improving parasympathetic cardiovascular function with exercise may confer protection against subsequent SCA. However, not all persons who have an ICD experience the same benefits in HRV with aerobic exercise training.

**Funding:** Research was supported by a grant from the NIH, NHLBI, R01HL084550, "Anti-Arrhythmic Effects of Exercise After an ICD Trial".

Clinical trial registration: NCT 00522340.

## Abstracts of Poster Presentations

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### CHRONIC ILLNESS

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#### PSYCHOSOCIAL DISTRESS SCREENING FOR THE PATIENT WITH CANCER

*Nancy Jo Bush*

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#### IMPROVING SELF-CARE IN HEART FAILURE PATIENTS

*Sible Rebello, Karen Macauley, Ashis Mukherjee*

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#### MONITORING PHYSICAL ACTIVITY IN PERSONS LIVING WITH FIBROMYALGIA USING FITBIT ONE

*Kira Kitchens, Alice Running, Linda Torma, Susan Luparell, Jeannie Osellame*

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#### THE CHRONIC CARE MODEL: WHERE DO RESEARCHERS FIT IN?

*Sarah Llewellyn*

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#### EFFECTS OF SPIRONOLACTONE ON QUALITY OF LIFE AFTER AN ICD

*Ana Carolina Sauer Liberato, Cynthia M. Dougherty,  
Merritt H. Raitt, Karen S. MacMurdy, Ignatius G. Zarraga*

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#### ROLE OF NURSES IN HELPING HEMATOPOIETIC CELL TRANSPLANTATION PATIENTS

*Nicole Ganey, Sunny Kim, Debra Hagler*

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#### UNDERSTANDING ED USE AMONG PEOPLE WITH MULTIPLE CHRONIC CONDITIONS

*Karen Colorafi, Crystal Lederhos Smith,  
Amy Barrett Thomas, Cynthia Fryhling Corbett*



GOAL SETTING IN A CARE PLANNING CONTEXT:  
WHAT PATIENTS WANT AND WHAT WORKS

*Crystal Lederhos, Rachel N. Foster, Mariah Petersen,  
Colleen Butler, Terri Garpestad, Cynthia Fryhling Corbett*

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HEALTH-RELATED QUALITY OF LIFE IN RETINOBLASTOMA  
SURVIVORS: REVIEW OF THE LITERATURE

*Paula Belson, Nancy Pike*

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A RE-EVALUATION OF SLEEP APNEA  
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*Eunjoo An, Paul M. Macey*

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SYMPTOM EXPERIENCE AND COMORBIDITY  
IN OLDER CANCER SURVIVORS: A CRITICAL REVIEW

*Cheryl Lacasse*

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CHRONIC DISEASE SELF-MANAGEMENT  
PROGRAM IN A CORRECTIONAL FACILITY

*Kelsey J. Hirsch, Johanna Crane, Sara Hall*

# CHRONIC ILLNESS

## Psychosocial Distress Screening for the Patient with Cancer

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**Purposes/Aims:** Using the Plan, Do, Study, Act (PDSA) framework, the purpose of this pilot project was to institute screening for psychosocial distress for patients with cancer being interviewed to join the Cancer Support Community. This community provides psychosocial services including support groups, education, and complimentary alternative treatments such as yoga, Tai Chi, and mindfulness training. The tool administered was the CancerSupportSource® (CSS) distress screening instrument developed by the Cancer Support Community's National Headquarter research department in Washington, D.C. Tested for validity and reliability, the CSS examines psychosocial issues ranging from disease and treatment symptoms, psychosocial concerns, to practical needs.

**Rationale/Background:** The journey across the cancer trajectory usually brings distress for patients and families due to the threat of mortality and the unforeseen treatments that ensue. Distress in the context of cancer has been defined by the National Comprehensive Cancer Network (NCCN) as an unpleasant emotional experience of a psychological (cognitive, behavioral, emotional), social and/or spiritual nature that may interfere with the ability to cope effectively with cancer, its physical symptoms, and its treatment. The Institute of Medicine (IOM) released *Cancer Care for the Whole Patient* in 2008 thus changing cancer care. It recommended that psychosocial services such as identification of patient distress be integrated into routine cancer care. The American College of Surgeons (ACOS) Commission on Cancer, to receive accreditation for oncology programs, has mandated screening for distress. Distress screening should be carried out across all transitions of the cancer care continuum—initial diagnosis, active treatment, following treatment, recurrent disease, and end-of-life. The goal of psychosocial care is to maximize the patient's quality of life.

**Methods/Process:** Using a Likert scale, the CSS is a 15-item tool that was used either on a tablet or in pen/ pencil form on a minimum of 20 patients. Application of the CSS allowed the nurse to appropriately assess the patient for their risk of depression, assign to support services, and refer to individual therapy if needed. A Patient Support Care Plan based upon patient concerns identified in the CSS also provides psychoeducational resources and referral sites. The CSS proved to be a valuable resource for providing psychosocial care.

**Outcomes Achieved/Documented:** The CSS has been found to be a valid and reliable, user-friendly tool that can be incorporated into institutional, private practice, and community settings to identify distress and risk for depression in the patient experiencing cancer.

**Conclusions:** Assessing for emotional distress in the patient with cancer should be carried out across all oncology settings at major transitional points across the disease trajectory. Nurses are in a prime position to carry out distress screening, intervene as needed, and refer appropriately. Nurses should be aware of distress screening tools available, the requirements for oncology practice settings, and the positive benefits of screening for identifying the emotional needs of each patient thus individualizing care.

# CHRONIC ILLNESS

## Improving Self Care in Heart Failure Patients

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**Purpose:** The purpose of this evidence-based project is to improve self-care and decrease the 30-day readmission rates in cardiology clinic heart failure (HF) patients.

**Background:** More than \$40 billion is spent annually for HF care in the United States, and there are more than 1 million hospitalizations per year with a primary diagnosis of HF. Mortality rates among HF patients persist at nearly 50% within five years of diagnosis. Thirty-day HF readmission rates, pose a financial burden to hospitals after the Centers for Medicare and Medicaid Services, in 2013, began to penalize hospitals if risk-adjusted HF readmission rates are greater than an anticipated rate. Non-adherence to medication, lack of awareness of exacerbating HF symptoms, ignorance of a treatment plan, and irregular follow-up visits result in frequent readmissions. Consistent patient engagement and education in self-care can empower patients to independently recognize early warning signs of worsening HF ultimately, decreasing HF health care utilization, reducing mortality and improving quality of life. Health care professionals can play a vital role by providing HF education on self-care skills, including weight monitoring, maintaining a low sodium diet, medication adherence, symptom monitoring, exercise, preventive care, and fluid restriction.

**Project Approach:** Data were obtained from 114 medical records to determine the readmission rate for the study site between 07/02/2015 and 08/19/2016. The 30-day readmission rate of HF patients at the site was 20.1%, compared with the national average of 21.9%. To increase the follow-up visits and increase the knowledge of HF self-care, patients will be contacted via telephone between 48-72 hours post-hospital discharge to make clinic appointments within in one week. The Self-Care of Heart Failure Index (SCHFI) will be administered during the first post-hospital discharge clinic visit to assess baseline knowledge of the self-care. During this visit, patients will also receive HF education (along with an educational handout) regarding medication adherence, low sodium diet, daily weight monitoring, symptom monitoring, exercise, preventive care, and fluid. After this visit, patients will receive weekly telephone calls to assess for signs and symptoms of HF, and intervene with clinic appointments if necessary. Four weeks post-hospital discharge, patients will be seen again in the clinic to assess for HF signs and symptoms and to complete the SCHFI. Follow-up weekly telephone calls and monthly visits will continue for three months. Patient will fill out the SCHFI at the end of three months to examine improvement in the knowledge scores.

The benchmark for 30-day readmission rate is <15% and the self-care benchmark is at least a 10% increase in SCHFI scores in maintenance, management, and confidence level.

**Outcomes:** It is expected to improve the self-care in HF patients and reduce the 30-day readmission rates.

**Conclusions:** It is expected to improve HF patient's self-care knowledge and an associated decrease in 30-day readmissions.

# CHRONIC ILLNESS

## Monitoring Physical Activity in Persons Living with Fibromyalgia Using Fitbit One

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**Purpose/Aim:** The aim of the project was to explore the feasibility and acceptability of using a smart, wearable body sensor, in this case a Fitbit One, to monitor physical activity in persons living with fibromyalgia. Also explored was use of the Fitbit One to examine the relationship between number of steps per week and fibromyalgia impact.

**Rationale/Conceptual Basis/Background:** Physical activity is an important component of symptom management in patients with fibromyalgia. A means to aide fibromyalgia patients in developing, monitoring and achieving physical activity goals may be useful in fostering resilience. This healthcare delivery innovations project utilized a feasibility study design. This project took place in the northwestern United States. All participants were asked to wear the Fitbit One during regular living.

**Methods:** The Fitbit One was chosen as a valid and reliable smart, wearable body sensor that is widely available to the population of interest. After a one-on-one instruction session participants were then asked to wear a Fitbit One for 4 consecutive weeks performing their usual routines. At the end of each week participants filled out an online formatting of the Revised Fibromyalgia Impact Questionnaire (FIQR). FIQR results and daily step totals were recorded in a spreadsheet. At the end of the 4-week period, the DNP student interviewed participants about their experience wearing the Fitbit One.

**Results:** Participants (n=8) all identified as white females and had a previous diagnosis of fibromyalgia. Content analysis was used for interview analysis. Three qualitative themes arose: 1) Device usability; a majority (n=7) felt the device was easy to use 2) personal awareness; a majority (n=7) stated that the Fitbit One increased their exercise awareness and 3) device feedback; most (n=6) participants felt that device feedback lead to physical activity goal setting. No participant felt that the device impacted pain. 7 of 8 participants had decreased or unchanged FIQR total scores over the length of the study, indicating decreased or unchanged symptom impact in daily living. Steps vs. FIQR analysis showed that for 6/8 participants the number of steps did not decrease from time one to time four while the FIQR scores did not increase during the same time.

**Implications for Translation to Practice/Future Research:** Findings suggest that smart, wearable body sensor use and wear are acceptable to individuals with fibromyalgia. Most participants cited increased awareness of physical activity related to device wear as a benefit. Graphical analysis of steps compared to fibromyalgia impact suggests a potential pattern of interest. Given participants responses to usefulness and acceptability of the device, it seems that integration of smart, wearable body sensors into healthcare may be effective as another means to enable fibromyalgia self care.

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# CHRONIC ILLNESS

## The Chronic Care Model: Where Do Researchers Fit in?

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**Aims:** The aim of this poster is to review the current clinical practice guideline (CPG) literature and integrate CPGs and research into the essential elements of the Chronic Care Model (CCM). This integration is lacking in the literature; however, it provides guidance for how providers and researchers can work together to enhance chronic care management. The CCM guides healthcare improvements using a team-based approach, a current emphasis in quality healthcare. Since its development in 1998, with additions in 2003, the CCM has been applied to clinical practice redesigns around the world. The model incorporates team members from the community, organization, clinical practice, and patient levels. The top level comprises the six essential elements: community resources and policies, health systems organization, self-management support, delivery system design, decision support, and clinical information systems. The second level extends from the first and is based on productive interactions between the informed, activated patient and the prepared, proactive practice team. The goal of CCM application is improved patient outcomes. Despite the extensive literature and application of the CCM, it is a heuristic.

**Internal Consistency:** Internal consistency of the elements in the model has not been established. An evaluation tool for assessing application of the CCM, the Patient Assessment of Chronic Illness Care (PACIC) is freely available. The scale includes five factors assessing only the patient's perspective on chronic care management. Psychometric evaluations of this tool have resulted in Cronbach  $\alpha$  scores of 0.87-0.94; however, validity results have varied from poor fit on four factors to good fit for two factors.

**Linking the Theory to Nursing Practice and Research:** While proactive and evidence-based care is a focus in the model, research has only an implied presence. One research area that continues to grow is the translation of evidence-based care into useable formats such as clinical practice guidelines. Several studies focused on CPG adherence and interventions for increased CPG use in practice specifically touch on essential elements of this model and will be reviewed in this poster. For example, the disease-specific registry is a prime illustration of *delivery system design*. The use of registries involves designing office workflows to include a team-based approach CPG-based protocols and close follow-up on treatment plans. Additionally, leveraging the electronic health record to facilitate CPG use, to include CPG-based patient education, and to coordinate care are key factors in *decision support*. Further interventions implementing provider audits and feedback are important aspects of *clinical information systems*.

**Utility of the Theory for Nursing Practice and Research:** Despite previously shown utility, further work needs to be done to support CCM incorporation into clinical practice guidelines studies and dissemination. Initial steps include determining consistency of the model essential elements and redesign of the PACIC. Next, development of a healthcare team focused tool allows for cross-validation of model application. The CCM is designed to be integrated into practice cultures, therefore further research is needed on how best to incorporate and evaluate all elements of the model.

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# CHRONIC ILLNESS

## Effects of Spironolactone on Quality of Life after an ICD

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**Background and Purpose:** The implantable cardioverter defibrillator (ICD) is highly effective at terminating ventricular tachycardia (VT) and ventricular fibrillation (VF) in patients at high risk for cardiac arrhythmias. The Anti-Arrhythmic Effects of Spironolactone in Patients with ICDs (SPIRIT) trial was designed to determine whether once daily spironolactone would: 1) reduce the incidence of VT and VF and 2) improve health related quality of life (HRQOL). Evidence suggests that spironolactone may be an effective and well tolerated adjunctive therapy to prevent VT and VF, and therefore reduce the risk of shocks in patients with ICDs. Therapies that reduce the incidence of VT and VF would be expected to enhance return to normal physical functioning and reduce psychological morbidity. The purpose of this report is the outline results of the HRQOL outcomes over a 24 month period, and to describe the effect of ICD shocks on HRQOL.

**Methods:** The SPIRIT trial was a prospective multi-center randomized double-blind placebo controlled trial testing the effects of daily spironolactone on number of ventricular arrhythmias and ICD shocks in participants with an ICD. Participants were randomized to either spironolactone 25 mg qd or placebo with a 24-month follow-up period. HRQOL was measured at baseline and every 6 months using the SF-36V Veterans Health Study Version, Patients Concerns Assessment (PCA), and Kansas City Cardiomyopathy Questionnaire (KCCQ). Shocks were determined by ICD interrogation. Linear mixed modeling was used to compare changes in HRQOL for the groups across 24 months. ANCOVA was used to compare HRQOL for persons getting an ICD shock compared to those with no shocks.

**Results:** 90 persons with an ICD were randomized, 44/spironolactone and 46/placebo group. Participants were primarily white (96.7%), male (97.7%), with mean age of 66.55±10.1, receiving an ICD for secondary prevention (85.5%), with an average EF%=34%. During the study 58 (64.5%) experienced at least one ICD shock, the range of shocks was 0-98/person. Over 24 months, there were no differences in HRQOL for the spironolactone vs. placebo groups using the SF-36V, PCS (F=1.81, p=0.18) or MCS (F=1.29 (p=0.26) component scores; PCA (F=0.10, p=0.75); or KCCQ overall summary score (F=0.07, p=0.79). On average, those in the placebo group reported higher HRQOL over time. In contrast, those who experienced ICD shocks vs. no ICD shocks reported significantly lower quality of life at 6 months [SF-36V-PCS: 28.07±10.76 vs. 39.61±18.03, p<0.05; SF-36V-MCS: 48.59±15.94 vs. 60.04±21.98, p<0.004; PCA: 25.46±11.38 vs. 17.61±9.76, p<0.0001; KCCQ: 46.92±21.61 vs. 67.53±24.70, p<0.0001]. Similar group differences in HRQOL between shock and no shock groups were found at 24 months [PCA: 23.38±12.29 vs. 16.8±10.08, p<0.01; KCCQ: 54.51±27.43 vs. 67.00±25.32, p<0.005].

**Implications:** The use of spironolactone over a two year period did not significantly affect quality of life in persons with an ICD. However, patients receiving one or more ICD shocks reported a significant reduction in HRQOL. Further study to developed interventions to reduce ICD shocks will likely improve patients HRQOL in living with an ICD.

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# CHRONIC ILLNESS

## Role of Nurses in Helping Hematopoietic Cell Transplantation Patients

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**Purpose:** The objective of this qualitative study is to understand patient perspectives concerning nurses' roles in helping hematopoietic cell transplantation (HCT) patients cope with their emotional distress before, during, and after HCT, as well what actions nurses can take to help improve the quality of life of those faced with HCT.

**Background:** HCT can be a potentially life-saving treatment for many hematopoietic malignancies such as lymphoma, myeloma, and leukemia. However, patients undergoing HCT continue to suffer substantial emotional distress due to the unique nature of the transplant experience such as prolonged immunosuppression and frequent hospitalizations. Approximately 44-55% of transplant patients exhibit symptoms of depression, anxiety, or post-traumatic stress disorder. Numerous studies have been conducted on how to improve nursing care for HCT patients, but they center solely on medical interventions and disregard the emotional aspects of experiencing such distress. Because these patients interact with their nurses so directly and frequently, the nurse becomes such an integral part of both the physical and emotional healing processes. Therefore, it is crucial to explore nursing interventions that were beneficial to patients' levels of emotional distress. However, there is little to no information in the research regarding the nurse's role in helping HCT patients cope with emotional distress before, during, and after their transplants.

**Methods/Approach:** The project was approved by the Institutional Review Board. Utilizing convenience and snowball sampling methods, participants were recruited through social media by posting on support group pages. Inclusion criteria were English speakers over the age of 18 who had HCT. Data collection consisted of demographic surveys and in-depth semi-structured interviews conducted over the phone for 30-60 minutes, and subsequently transcribed verbatim. Using a qualitative descriptive design, content and thematic analysis was conducted on the interview data. Three coders participated in coding and resolved inter-coder discrepancies.

**Results:** To date, 5 HCT patients have participated in interviews. Mean age was 58 years old and 80% of participants were female. 60% of these patients had received their transplant for leukemia, and 60% are married. All transplants took place within the last 4 years, with 80% of them being allogeneic and 20% autologous. Preliminary findings show that helpful nursing interventions included education, progress updates, and providing comfort/emotional support during times of high distress; night shift nurses were especially helpful when sitting with patients who could not sleep.

**Implications:** As HCT patients continue to suffer high emotional distress, nurses need to be educated about the extent of patient needs, the kinds of support patients desire, and available psychosocial supportive resources. Further, the study will inform future nursing intervention design for HCT patients experiencing emotional distress.

# CHRONIC ILLNESS

## Understanding ED Use among People with Multiple Chronic Conditions

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**Purpose:** To better understand, from the perspective of the patient with multiple chronic conditions and frequent (3 or more in 12 months) emergency department (ED) visits, the reasons for seeking care at the ED.

**Rationale/Conceptual Basis/Background:** With a growing aging population, the number of persons with chronic conditions continues to escalate and challenges related to chronic care quality, effectiveness, and cost remain unresolved. Effectively managing chronic conditions is particularly challenging for both patients and health professionals. Using the Expanded Chronic Care Model as a framework, patients with multiple chronic conditions that had a Federally Qualified Health Home, high baseline acute care use, and agreed to participate in a clinical trial were randomized to receive either 12 months of home-based, person-centered care management, delivered by a nurse and a social worker or an attention control intervention. Despite the interventions, many participants continued to have frequent ED visits. This study seeks to understand, from the perspective of patients with multiple chronic conditions, the reasons for frequent ED use.

**Methods:** Participants that completed the parent study who (i) indicated that they wished to be notified of future, related research, and (ii) who experienced 3 or more ED visits during the 12 months in which they were enrolled in the parent study are being contacted by the research team. Those interested in providing informed written consent are being interviewed in face to face meetings. The interviews begin by asking them to recall the reason they sought care for each visit to the ED. Follow-up prompts include: (i) What types of support or care would have helped so that you didn't need to get care at the emergency department?; (ii) Was managing your pain an important factor in your decision to go to the emergency room? Can you tell me about that? Interviews are transcribed by a professional transcriptionist and then analyzed by at least two members of the research team. Low inference qualitative descriptive techniques are used to identify major themes and subthemes. Participants are being recruited from both arms of the parent study (intervention and attention control) and each arm will be analyzed separately to determine thematic differences and similarities.

**Results:** Interviews are ongoing and results are pending, but preliminary results will be available in Spring 2017.

**Implications:** The current health care system has very few resources to help people self-manage their chronic conditions. Despite one arm of the parent study providing home-based person-centered care management with a focus on promoting patient activation and engagement in self-management, many participants had frequent ED visits. The findings from this study will help us understand the reasons for ED use from the patient perspective. In turn, that knowledge may assist us in designing interventions to assist patients with multiple chronic conditions to better self-manage their chronic conditions and meaningfully engage as members of their own healthcare team, thereby improving health outcomes and reducing acute care use, including ED visits.



## CHRONIC ILLNESS

### Goal Setting in a Care Planning Context: What Patients Want and What Works

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**Purpose:** The purpose of this study is to examine health related goals set by persons with multiple chronic conditions (MCC) while receiving care management services aimed at facilitating activation and care engagement. The aims are to: 1) describe the types of goals identified by participants during home based services delivered by a nurse and a social worker; 2) quantify participants' successes in meeting their self-identified goals; and 3) determine whether goal attainment varies by goal type.

**Rationale/Conceptual Basis/Background:** Aging adults with MCC have many health related needs. Patient engagement in care planning is increasingly viewed as paramount to improving care quality and to achieving health outcomes that are important to the patient. This study provides knowledge about the types of goals participants self-identified and their success in goal attainment.

**Methods:** Using the Expanded Chronic Care Model as a framework, patients with MCC, 45 years of age or older, who received ambulatory care from a Federally Qualified Health Center (FQHC), had high baseline acute care use, and agreed to participate in a clinical trial were randomized to receive either 12 months of home-based, person-centered care management, delivered by a nurse and a social worker, or an attention control intervention. Participants (n will be ~ 90) in the care management intervention arm of the clinical trial self-identified goals based on their values and situation-specific needs. Longitudinal, prospective data consisting of participants' self-identified goals and the chart notes recorded by the RN and MSW care managers regarding goal progress and attainment are being analyzed. Descriptive qualitative document analysis methods are being implemented by the research team.

**Results:** Approximately 85% of participants have completed the study and the last participants will complete the study in January 2017. Data analysis has been initiated. Currently, the top 4 goals set by participants are: 1) Lose weight; 2) Manage diabetes; 3) Control blood pressure; and 4) Manage depression. Preliminary analysis for aims 2 and 3 suggest that larger, more complicated goals and goals that are not explicitly defined (e.g. lose weight rather than lose 10 pounds) appear to be less well obtained. Final results that include all participants will be presented at the conference.

**Implications:** Findings are expected to provide information about: 1) common health goals that are important for aging adults with MCC; 2) goal attainment rates for differing types of goals; and 3) strategies that clinicians can use to assist patients in identifying attainable goals such that successes are realized. Findings from this study will provide foundational knowledge for future research about the relationships between attainment of patient-identified goals, patient activation and strategies to promote engaging patients as members of their own health care teams.

# CHRONIC ILLNESS

## Health-Related Quality of Life in Retinoblastoma Survivors: Review of the Literature

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**Purpose/Aims:** A literature review will be performed to examine health-related quality of life (HRQOL) of retinoblastoma survivors.

**Background:** Retinoblastoma is a malignant tumor of the eye that typically presents in early childhood and occurs in approximately one in 20,000 births. Treatment for retinoblastoma includes a combination of chemotherapy, radiation, and enucleation. While active treatment of the tumor is typically completed in childhood, survivors continue to require repeated eye examinations to assess for effects of treatment, potential for recurrence, and visual acuity. Survivors often suffer from a variety of long-term effects from treatment including visual impairment, facial deformities, and psychosocial consequences including fear of recurrence or secondary cancer. However, little is known how these long-term effects will impact their HRQOL.

**Methods:** A literature search was performed in PubMed, CINAHL, and PsycINFO to identify studies examining HRQOL in retinoblastoma survivors. Included in this search were all empirical studies published between 2005 and 2016 that were written in English. Combinations of the following keywords: HRQOL, quality of life, and retinoblastoma were used. However, this produced only a limited number of articles. The search was expanded to include keywords “outcomes” and “psychosocial”. A total yield of 217 articles were critically appraised. Inclusion criteria consisted of articles related to HRQOL, quality of life, and outcomes in retinoblastoma. Exclusion criteria included textbooks, review articles, and articles focusing primarily on medical factors associated with retinoblastoma.

**Results:** A total of six articles were identified assessing HRQOL in retinoblastoma survivors. Three articles included both children and adolescents in the study sample, one assessed adults only, and two were parent proxy-reports. All studies were cross-sectional or exploratory, small to moderate size samples, conducted outside of the US, and utilized a variety of instruments to measure HRQOL [e.g. PedsQL, SF-36, KIDSCREEN]. Only two studies utilized a conceptual definition of HRQOL, while no studies included a HRQOL theoretical framework. One study incorporated a framework for the relationship between participation in daily activities and HRQOL. Results ranged from worse, similar, or better HRQOL compared to controls [either recruited or normative data]. In addition, three US based studies were identified measuring concepts often used as a surrogate for HRQOL [psychosocial and neurocognitive outcomes] with results showing issues related to post-traumatic stress symptoms, declining developmental functioning, and mild cognitive deficits in retinoblastoma survivors. The literature review identified a lack of US based HRQOL studies in adolescent retinoblastoma survivors. Results were inconsistent, lack generalizability to a US cohort, and warrant future research to assess the long term effects associated with treatment on HRQOL.

**Nursing Implications:** By identifying any potential deficits in specific domains of HRQOL, early interventions can be developed to improve psychosocial issues and HRQOL in retinoblastoma survivors.

## CHRONIC ILLNESS

### A Re-Evaluation of Sleep Apnea as a Causal Factor for Hypertension

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Obstructive sleep apnea (OSA) is a risk factor for cardiovascular disease. There is a strong correlation between hypertension and OSA. In fact, JNC7 identified sleep apnea as one of the causal factors for hypertension. Therefore, we hypothesized that the OSA diagnosis should precede HTN. We analyzed 10518 subjects with a diagnosis of OSA obtained from the UCLA Medical System database over a 10-year period. Times of diagnoses of HTN was compared to the earliest OSA diagnosis using 1 sample t-tests; age factors were determined by linear regression. Relationships were assessed by sex or mixed groups separately by independent samples t-tests. The 10518 subjects had a diagnosis of OSA (4122 F, 6392 M). In 4874 subjects (2006 F, 2868 M), HTN was diagnosed substantially earlier than OSA ( $P < 0.001$ ; mean time to diagnosis = -697 days; median = -64 days. Females showed significantly earlier HTN diagnoses than males ( $P < 0.05$ : female: mean time before = -786 days; median = -559 days; males: mean time before = -634 days; median = -388 days). Age was negatively related to time from OSA to HTN diagnosis in both sexes ( $P < 0.05$ ). These results suggest that sleep apnea is underscreened. However, an alternative hypothesis is that there are possible undiscovered mediating or moderating factors between sleep apnea and hypertension.

# CHRONIC ILLNESS

## Symptom Experience and Comorbidity in Older Cancer Survivors: A Critical Review

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**Purpose:** The purpose of this presentation is to critically review the current evidence regarding the relationship between cancer, chronic illness, and the symptom experience in older adults, including the influence of chronic illness on the symptom experience, symptom and comorbidity measurement, and conceptual frameworks used to inform studies of these concepts.

**Background:** Approximately 60% of all cancer survivors are aged 60 years and older with nearly half (45%) of all older cancer survivors being aged 70 years and older. Understanding the interrelationship between the cancer experience in older adults, acute and chronic symptoms, and chronic illness is essential in coordinating ongoing survivorship care for this complex population.

**Methods:** A literature search was conducted in several databases including MEDLINE, CINAHL, PsychInfo, EMBASE, Academic Search Complete, and Dissertation Abstracts using the following search terms: aged, elderly, geriatric cancer survivor, gero-oncology, cancer symptoms, symptom distress, symptom clusters, comorbidity, and chronic illness. The search string which yielded the most relevant studies was aged/ elderly, cancer survivor, symptoms, and comorbidity. Literature included in the review had the following characteristics: publication in peer-reviewed journals from 1993 – 2016, study population of cancer survivors either on or beyond treatment with a mean age of 60 years or older, focus on cancer-related symptoms, greater than two symptoms and comorbidity measured and analyzed in the study, and articles written in the English language. Exclusion criteria included: review articles, case studies, primary focus on cancer diagnoses or specific treatments, and supportive care and symptom interventions. The initial search yielded 123 unique publications. An in-depth review of identified publications yielded 20 relevant publications. Eight studies included participants from one large database and were clustered into one unit of analysis. In addition, 12 unique studies were analyzed representing over 4000 participants.

**Results:** All studies reviewed were classified as descriptive, exploratory and reflected strong quality of evidence. Seven studies demonstrated that individuals with an increased number of comorbidities had increased symptoms. Two studies suggested that cancer survivors with chronic illnesses had a higher symptom burden. Each study used different symptom assessments including self-report and interview surveys. Comorbidity assessments included a variety of interview surveys and simple self-report checklists. Six out of 20 studies identified a specific conceptual framework to guide the research including the Symptom Experience Model, Common Sense Model, and Theory of Unpleasant Symptoms.

**Implications:** By understanding the complex nature of symptoms in older cancer survivors with chronic illnesses, nurses can carefully plan and deliver evidence-informed symptom management and have a profound impact on quality of life outcomes. The results of this review also suggest a role for the use of Patient-Reported Outcome Measurement Information System measures and a universal symptom science model in cancer-related symptom research.

# CHRONIC ILLNESS

## Chronic Disease Self-Management Program in a Correctional Facility

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**Background:** The Chronic Disease Self-Management Program (CDSMP) is a Stanford-designed, peer-led intervention that has been shown to increase energy, exercise, psychological well-being, self-efficacy and improve physician relationships; as well as decrease fatigue, social role limitations and pain symptoms among individuals with chronic health conditions (Galloway). In September of 2015, the Washington State Department of Corrections (DOC) decided to implement the CDSMP in two facilities, adapting the program for use with an incarcerated population. While it has been successful in community settings, the efficacy of the CDSMP in prison populations is not yet known. The Washington State DOC's implementation of the program offers an important opportunity to assess the effectiveness of the CDSMP for incarcerated individuals, particularly given the belief that incarceration is, in itself, a chronic condition.

**Purpose:** The purpose of this pre-post, mixed methods study is to assess the effectiveness of the CDSMP for incarcerated individuals.

**Method:** The first aim is to compare changes in self-efficacy, quality of life, and management of chronic illness between baseline and end-of-treatment, as measured by a pre- and post-survey designed and validated by the Stanford team (K. Lorig, Stewart, A., Ritter, P., Gonzalez, V., Laurent D., & Lynch, J., 1996). In addition to surveys, one-hour interviews will be conducted with each participant following completion of the program. Participants will have the opportunity to discuss what they gained from the program and what aspects have been most influential. The intention is to use this qualitative data to augment the quantitative findings. The second aim is to measure objective indicators of effectiveness, as evident in each offender's online tracking system (e.g. decreased infractions and reduced outside hospital visits). The last aim is to identify the characteristics of the participants who appear to benefit from the intervention, including the participants' diagnoses of chronic/mental illness, sentence length, race, gender, and age. **Results:** This study is currently in the data collection phase, and interviews will be scheduled throughout the fall and winter. At the time of the presentation, preliminary data will be available. In addition, the authors will be able to discuss the research process, including the challenges of conducting research within a correctional setting, the interdisciplinary collaboration that took place, and the successes and struggles of beginning a research study as a first-year PhD student.

**Implications:** The success and failures of this program have large implications for healthcare both within the prison and upon release, as well as for the reduction of infractions and emergency hospital visits. More importantly, the program has the potential to enhance self-efficacy and empowerment among incarcerated individuals, thereby contributing to self-enhancement and the rehabilitation process. Funded by UW Royalty Research Fund eGC1#97203.

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- Lorig, K., Stewart, A., Ritter, P., Gonzalez, V., Laurent D., & Lynch, J. (1996). *Outcome measures for health education and other health care interventions.* Thousand Oaks, CA: Sage Publications.

## Abstracts of Poster Presentations

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### DIABETES

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FOOT-CARE IN DIABETES:  
AN EVOLUTIONARY CONCEPT ANALYSIS

*David Oni*

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A NEEDS ASSESSMENT: RETAIL CLINIC PROVIDER  
DIABETES KNOWLEDGE AND ATTITUDES

*Gamila Sharifi, Patricia Daly*

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AN INTEGRATIVE REVIEW: SHARED MEDICAL  
APPOINTMENT IN PATIENTS WITH DIABETES

*Janet Hildebrand*

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EFFECT OF FOOT CARE NURSE CLINICS  
ON PATIENT OUTCOMES

*Kathy Lopez-Bushnell*

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NURSING STUDENT RETENTION OF DIABETES  
KNOWLEDGE: THE DIABETES CAMP EXPERIENCE

*Lori Hendrickx, Linda Burdette, Nancy Hartung*

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KNOWLEDGE, SELF-EFFICACY, & SELF-MANAGEMENT  
AMONG PATIENTS WITH TYPE 2 DIABETES

*Razel Bacuetes-Milo, Cynthia D. Connelly*

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PARENTS OF TYPE 1 DIABETICS: EXPERIENCES  
WITH HEALTHCARE PROVIDERS

*Elizabeth Kerr, Donna Freeborn*

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AN ELECTRONIC MEDICAL RECORD CHANGE TO  
IMPROVE TYPE 2 DIABETIC PATIENT FOOT OUTCOMES

*Nicole Woollard, Karen Sue Hoyt, Maria Villa*

# DIABETES

## Foot Care in Diabetes: An Evolutionary Concept Analysis

*David Oni, MSN, RN  
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**Purposes:** This study explored and clarifies the concept of foot care in diabetes, given the lack of consensus on a universal definition of foot care and disparity in criteria to determine a standard definition of foot care.

**Background:** The term foot care in diabetes has been used many times in published literature in connection with preventing the occurrence of foot ulcers in patients with diabetes. However, there is presently no universal or standardized definition of this concept. This limitation indicates the critical need for further conceptual efforts in clarifying the meaning of foot care to have a practical use most especially in clinical settings. The theoretical conceptualization of the term “*foot care*” needs to be translated into an operational definition that is best suited for the needs of patients and health care practitioners. This study provided an operational definition for the term “*foot care*” and a reconceptualization of the concept foot care to improve care and construct a measuring and teaching instrument on foot care for patients with diabetes.

**Method:** This concept analysis was performed using Rodgers’ evolutionary method, which is particularly useful when attempting to understand evolving concepts over time because the method can incorporate extended contexts for concept usage and emerging evidence in the literature. This method outlined the primary constituent of concept analysis as follows: recognizing the concept of interest including surrogate terms and exemplar if applicable; selection and analysis of relevant data, identification of antecedents and attributes, development of hypothesis; and discussion of implication for practice and future research.

**Result:** The review of literature identifies foot inspection, toenail care, and good foot wear as specific attributes of foot care. However, feet skin care is a relevant and significant terms which was excluded from all definitions of foot care. This study provided a hypothesize definition of foot care which included feet skin care.

**Implications:** The lack of a standardized definition of foot care is one of the best indicators of the need for this analysis. A definition of the term “*foot care*” was hypothesized through this study. This definition can be used the operational definition of foot care. In practice, this definition may also help nurses who need to teach patients with diabetes, to have a better understanding of the meaning of foot care and be effective in achieving better clinical teaching outcomes. However, further scientific inquiry is needed to advance the concept of foot care and its importance in for patients with diabetes. This analysis can be considered as a starting point for additional inquiry on this concept.

# DIABETES

## A Needs Assessment: Retail Clinic Provider Diabetes Knowledge and Attitudes

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**Purpose:** Two current growing health care trends in the United States are the escalating rates of obesity and the use of retail health care clinics. This needs assessment will explore the intersection of these trends, as retail health care clinics expand beyond delivering urgent care, to providing comprehensive diabetes care. The purpose of this project is to assess provider knowledge of diabetes and personal attitudes towards diabetes in a retail health setting. The assessment data will include diabetes general knowledge and attitudes regarding diabetes. Research questions will include: What is the baseline knowledge of diabetes in nurse practitioners and physician assistants in a retail health setting? Do personal attitudes affect the baseline knowledge of these practitioners? This assessment may guide development of future provider education programs including ongoing comprehensive diabetes management which may improve diabetic patient outcomes.

**Background:** Poorly controlled diabetes can lead to long lasting health complications including renal and cardiac disease. Competency in provider diabetes care and education has been studied in many settings and continues to be an important area of research. Provider attitude has been shown to impact adherence to recommended delivery practice guidelines. Little is known about the recent trend of retail clinics expanding their scope and providing care for chronic diseases. These health clinics located in retail stores, have continued to rise in numbers. They offer convenience and affordability. As of September 2016, The Little Clinic initiated providing diabetes management as part of their expanding scope of practice. The purpose of this project is to assess a possible relationship between the diabetes knowledge base of Arizona Little Clinic providers and personal attitudes regarding diabetes.

**Methods:** Participants will complete an on-line diabetes knowledge survey based upon the current standards of care for patients with diabetes from the American Diabetes Association and the Diabetes Attitude Survey (DAS-3). All Arizona Little Clinic providers (nurse practitioners and physician assistants) will receive an email with information about the project and survey links. The survey will be used to collect data about diabetes knowledge and attitudes. Ideally at least 75% of the eligible participants would complete the surveys. Participants will not receive any compensation and any participation or lack of participation in the project will be kept confidential except for the sole researcher. Participants will need to give consent through the online survey program prior to completing the surveys.

**Results:** Following IRB approval, data is anticipated Spring of 2017.

**Implications:** This project will assess retail health care providers' diabetes knowledge and attitudes towards diabetes. As the utilization and practice scope of retail health care clinics increases providers, diabetes knowledge will be key to patient outcomes. This needs assessment will identify potential provider knowledge deficits guide development of a diabetes education program for retail health providers. This needs assessment may also be used in future studies to assess provider knowledge and the quality of the chronic illness management delivered in a retail health setting, compared to primary care settings.



# DIABETES

## An Integrative Review: Shared Medical Appointment in Patients with Diabetes

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**Purpose/Aim:** The primary aim of this integrative review is to examine the effectiveness of providing shared medical appointment (SMA) to patients with diabetes mellitus (DM) to improve clinical biomarkers and psychological outcomes.

**Background:** Diabetes mellitus is a complex chronic disease that is increasing in epidemic proportions and requires extensive healthcare monitoring and self-management education. The SMA is one practical strategy to provide multidisciplinary care and consistent DM self-management education in a group environment.

**Methods:** Publications were reviewed based on the following criteria: (a) randomized controlled trials or quasi-experimental studies that were written in English from January, 2000 to May, 2016; (b)  $\geq 18$  years of age with either type 1 or type 2 DM; (c) the SMA visit must include a healthcare provider who has the ability to manage patient care and institute necessary medication changes; and (d) clinical and psychological outcomes. Data extracted from the selected studies included: research design, demographics, type of health care provider -- physician, pharmacist or advanced nurse practitioner – clinical outcomes (HbA1c), psychological and behavioral measurement instruments and outcomes, and risks for bias.

**Outcomes Documented:** A total of 20 articles were included for this study; two pairs of the studies included in this review reported on different variables and one study reported on three sequential long-term outcomes with the same initial study participants. As a result, only 15 distinct studies were analyzed. Protocols for the group visits varied across the studies but there were positive clinical and psychological effects. Improvements in outcomes were not associated with the type of health care provider. Seven studies demonstrated significant improvement in HbA1c. Programs that provided long term and multidisciplinary services had sustaining effects.

**Conclusions:** Diabetes is a complex chronic disease that requires a cooperative interdisciplinary approach to meet both national standards of care and the basic health care of the patient. The SMA is a practical systematic approach that improves clinical and psychological outcomes in patients with DM. As chronic care shifts from specialty services to primary care providers and more patients receive health coverage through the Affordable Care Act, it is imperative that health care systems offer effective programs that promote primary and secondary prevention. Providing chronic care in an acute care schedule does not provide the extent or caliber of care that patients require. Although the literature lacks standard group visit protocols, the basic structure is similar across studies. Additional longitudinal research is required to demonstrate that SMAs are a sustainable paradigm shift and not just a limited-time research study.

# DIABETES

## Effect of Foot Care Nurse Clinics on Patient Outcomes

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**Purpose/Aims:** The purpose of this IRB approved two-group posttest clinical research study is to measure the effects of Certified Foot Care Nurses (CFCN) interventions and education on the outcomes of patients in ambulatory care clinics. The aim was to have ten ambulatory care nurses become certified as foot care nurses and to measure their effect on patient outcomes including amputations, hospitalizations, emergency room visits, infections, foot problems, patient knowledge of foot care and diabetes and cost. The ultimate aim is for all primary care patients with foot problems to receive cost effective, comprehensive and effective care for their foot problems by CFCN.

**Rationale/Conceptual Basis/Background:** Diabetes is the leading cause of non-traumatic lower limb amputations in the US.<sup>1</sup> Only 12% of patients are given a foot examination during their clinic appointments.<sup>2</sup> Foot disease and injuries in primary care are common problems which can result in significant pain and disability leading to economic burden for patients and their families.<sup>3</sup> Most foot problems are initially noted in primary care and the nurse is often the first person to assess the patient and identify any foot issues.<sup>2</sup> The primary care nurse also establishes a relationship with the patient and family and is readily accessible to care for problems related to the feet. Therefore, it is essential that these nurses are competent in the assessment and management of foot problems. The role of the “certified foot care nurse” is a new role and there has been no research to measure the effect of their interventions.

**Methods:** This a case-controlled two-group study with one group receiving care from the CFCN and the other group receiving standard care which includes the podiatrist. There will be 100 subjects in each group and the recruitment of intervention group will be through the ambulatory care clinics with referral from the primary care provider to the Foot Care clinics. The intervention data will be documented by the CFCN or their assistant, and the non-intervention patient’s clinical data will be gathered through the Electronic Medical Record. All data will be entered into RedCap for analysis.

**Results:** There ten ambulatory care nurses at a southwest teaching hospitals who have received their certification as “certified foot care nurses (CFCN)” and will provide care to patients in their nurse run “foot-care clinic.” The results being measured include below the knee amputations, infections, hospitalizations and cost.

There will be 100 subjects in each group. Means and statistical test results will be reported for each measure. Analysis of covariance (ANCOVA) models should be used to test for differences in study outcomes at every six months for three years. Descriptive statistics will also be run to be able to describe the participants. In addition, statistics looking at the reliability of the measures will be run.

**Implications for Translation to Practice/Further Research:** The findings from this research may result to an independent CFCN ambulatory care nursing practice that results in improved patient outcomes and decreased health care costs.

# DIABETES

## Nursing Student Retention of Diabetes Knowledge: The Diabetes Camp Experience

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Diabetes is a chronic disease affecting 29.1 million people in the United States with 208,000 people with diabetes under the age of 20. The highest rate of newly diagnosed cases of diabetes is in the under-20 age group (CDC, 2015). Dealing with diabetes is particularly challenging for children as it affects the way they eat and play and results in the need for extensive education about disease management. Adjusting to a chronic illness that impacts every facet of their lives and requires constant monitoring of blood sugar levels is most always a difficult transition for the child and family. It is estimated that over 400 South Dakota residents under the age of 18 have diabetes and the rural nature of the state greatly impacts access to health care and services for children with diabetes. The publication “2020 Priority Areas” by the South Dakota Department of Health (2014) identifies ways to improve the lives of South Dakota residents living with chronic disease. Among the strategies is to reduce the burden of diabetes. The rural nature of South Dakota makes access to diabetes education more challenging for children with diabetes. Participation in a summer diabetic camp offers these children the education and support they need. Nurses play an important role in caring for diabetic children. Nursing students are exposed to significant content about diabetes throughout their nursing curriculum but rarely have the opportunity to care for diabetic children in the clinical setting. Providing nursing students a pediatric clinical experience at a diabetes camp provides a supervised, fun environment where they interact with children with diabetes, learn how to manage their nutritional needs, recognize the effects of exercise on diabetes and signs of hypoglycemia, and how to manage diet and lifestyle. The purpose of this research project was to measure nursing students’ retention of knowledge about diabetes after participating in a diabetes camp clinical experience. Students who agreed to participate in the study were randomly assigned to either diabetes camp or the traditional pediatric clinical experience. All students received the standard nursing theory content about diabetes with content being delivered by the principal investigator. A pre-test, post-test design was used to measure retention of diabetes knowledge with a questionnaire developed by the investigators and reviewed by a practicing certified diabetic educator for content validity. Selected students and their clinical instructor attended the week long camp, staying in cabins and interacting with the campers in all activities. The Diabetes Knowledge Assessment pre-test was completed prior to the clinical experience and following the camp experience, all nursing students completed the post-test. Initial calculation of the scores indicate that the students attending diabetes camp had better retention of diabetes knowledge compared to the control group. Statistical analysis is pending. Preliminary data shows that the use of a camp for diabetic children may provide a valuable pediatric clinical experience and increase retention of knowledge of diabetes.

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**Funding:** South Dakota State University Scholarly Excellence Award for Teaching and Learning.

# DIABETES

## Patient Knowledge, Perceived Self-Efficacy, and Self-Management among Patients with Type II Diabetes Mellitus

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*San Marcos, CA*

*Cynthia D. Connelly, PhD, RN, FAAN*  
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**Purpose:** The purpose of the study is to examine the relationships between patient characteristics, diabetes knowledge, perceived self-efficacy, self-management abilities, and glycemic control in patients with TYPE II Diabetes Mellitus (T2DM).

**Background/Conceptual Framework:** T2DM is one of the leading health concern in the United States (U.S.). In the U.S., diabetes mellitus has reached epidemic levels with the prevalence reaching an approximately 29.1 million people. It is the seventh-leading cause of death in the U.S. The U.S. spent an estimated of \$245 billion in direct medical costs and indirect costs. The indirect costs included disability and lost productivity.

Extant studies examining self-management and treatment outcomes for persons with T2DM have paid limited attention to the relationships between patients' disease knowledge, self-efficacy, self-management practices, and glycemic control. Nola Pender's Health Promotion Model composed of conceptually related variables will be used to study factors associated with HgbA1C levels among persons with T2DM. The focus of the conceptual design is the correlation of the patient individual characteristics with the three independent variables include diabetes knowledge, perceived self-efficacy, and self-management activities. The outcome is the participants' pattern of responses compared and analyzed with their HgbA1C.

**Methods:** A prospective descriptive correlation design. A purposive sample (N = 100) will be recruited from a large urban community clinic and community centers located in Southern California, June 2016 through December 2016. Inclusion criteria: 18 years and older living with T2DM, English or Spanish Speaking. A survey comprised of 3 standardized measures (Summary of Diabetes Self-Care Activities (SDCA) survey, Diabetes Knowledge Questionnaire (DKQ), and Self-Efficacy for Diabetes Scale and Demographic Questions will be administered in the language of participant's choice. Descriptive statistics will be used for all analysis variables to describe participant characteristics. Bivariate and multiple regression analysis will be used to examine the relationships between patient characteristics, diabetes knowledge, perceived self-efficacy, self-management abilities, and glycemic control.

**Results:** Pending

**Nursing Implications:** Study outcomes will provide valuable information to inform practitioners, administrators, and policymakers in the development and implementation of more efficient, patient-based care to increase T2DM patient engagement in self-management practices, improve patient satisfaction, health, and lower healthcare costs.

# DIABETES

## Parents of Type 1 Diabetics: Experiences with Healthcare Providers

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*Donna Freeborn, APRN, PhD, FNP*  
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Provo, UT

**Purpose/Aims:** The purpose of this research is to help nurses better serve families with children who have type 1 diabetes. By learning from experiences of parents who have raised a child with diabetes to adulthood, nurses can provide more appropriate, therapeutic care.

**Rationale/Conceptual Basis/Background:** Most people with type 1 diabetes are diagnosed as children. This life-changing diagnosis affects the whole family. Parents experience fear of complications, constant monitoring and treatment, and stress from caring for a child with a chronic disease. Although there is research about parents currently raising children with diabetes, no research has looked at the perspective of parents who have raised their child with diabetes to adulthood. Looking back on the entire experience, a parent has greater perspective and added insight as to how healthcare professionals can best help families with a child with diabetes.

**Methods:** My project is based off of a larger research project exploring the experiences of parents who have raised their children with type 1 diabetes. After IRB approval, we interviewed eighteen parents who had a child (or children) diagnosed before the age of eighteen, and who have now raised that child to adulthood. We first conducted an interview where participants were simply asked to describe, in their own words, their experiences raising their child (or children) with type 1 diabetes. In a second interview, we asked parents eight specific questions, such as, “What challenges do you remember?” We transcribed the interviews and then analyzed them for patterns and major themes. My research focuses on parent insights on their interactions with healthcare professionals. This theme was a common topic of discussion by research participants.

### **Results:**

- Families of a newly diagnosed child go through a great deal of grief. Healthcare professionals must address emotional needs and provide support.
- Healthcare professionals should teach children in an age-appropriate manner. Both parents and children need to be involved in the education process.
- It is distressing for parents of a newly diagnosed child when healthcare professionals make the negative consequences of poorly controlled glucose levels the focal point of the discussion on diabetes management.
- In the weeks following a new diagnosis, it is helpful for parents to have someone they can call 24/7.
- Families need to have a close-working relationship with trusted healthcare professionals as they raise their children with type 1 diabetes.

**Implications for Translation to Practice:** Nurses can provide better care to families with a child (or children) with diabetes by addressing emotional needs of families, educating families in a thorough and positive manner, and providing continual support. These results may also be applied to families raising children with other chronic diseases.

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**Funding:** Brigham Young University College of Nursing and Brigham Young University Office of Research and Creative Activities Grant 2016.

# DIABETES

## An Electronic Medical Record Change to Improve Type 2 Diabetic Patient Foot Outcomes

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*Maria Villa, MD  
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**Purpose/Aims:** The purpose of this project was to implement the American Diabetes Association (ADA) foot assessment guidelines utilizing an electronic medical record (EMR) template. Aims of this evidence based practice (EBP) project were to improve documentation of the comprehensive diabetic foot exam, increase identification of loss of protective sensation (LOPS), and increase podiatry and vascular surgery referrals.

**Rationale/Background:** Diabetes Mellitus (DM) causes many health complications including peripheral neuropathy, foot ulcers, and peripheral artery disease (PAD). The lifetime risk of foot ulceration in diabetic patients is 25%. For adults 18 and older in the United States in 2007, 113,000 individuals were hospitalized secondary to diabetic foot ulcers; 75,000 were hospitalized with a diagnosis of diabetic peripheral neuropathy, and 84,000 were hospitalized for PAD. Healthy People 2020 reported that 68% of adults with DM greater than 18 years had a foot exam performed by a health care professional in the last year. The goal of Healthy People 2020 is to increase this number by 10% to a total of 21,617,200 individuals. Healthy People 2020 reported that 3.5 out of 1,000 lower extremity amputations are in diabetic patients. The ADA recommends annual comprehensive foot exam for all patients with DM and visual foot assessments every visit. The literature supports the use of the 10-g monofilament and the 128 Hz tuning fork to assess for LOPS. In the clinic, visual foot and sensory exams are performed but currently there is no EMR documentation for the comprehensive diabetic foot exam.

**Brief Description of Undertaking:** This EBP project included randomly selected chart reviews of 180 type 2 DM patients. The charts were chosen by selecting every third patient visit that contained the diagnosis of type 2 DM from May 2015 to May 2016. A total of 15 charts per month were selected. The chart reviews identified if visual and/or sensory foot exams were documented, if foot ulcers or deformities were documented, and if referrals were made to podiatry and/or vascular surgery. A comprehensive diabetic foot exam EMR template was created and implemented between August 2016 and January 2017. This assessment included visual examination, sensory examination assessing for LOPS using the 10-g monofilament and the 128 Hz tuning fork, and vascular exam assessing pedal pulses.

After the EMR template was inserted into the EMR, data were retrieved tracking the numbers of comprehensive DM foot exams were EMR documented, podiatry referrals, and vascular surgery 2016 through January 2017.

**Outcomes Achieved/Documented:** From May 2015 to May 2016, 47 visual foot exams, 83 sensory exams, 3 podiatry referrals, 1 vascular surgery referral, 1 foot ulcer, 2 foot deformities, and 1 leg ulcer were documented in type 2 DM patient charts without the comprehensive foot exam EMR template.

**Conclusions:** An EMR template for the comprehensive DM foot exam allows for improved documentation. Annual comprehensive foot exams in diabetic patients can ultimately lead to improved patient outcomes in primary care. Implications for clinical practice will be discussed at the completion of this project.



**Abstracts of Poster Presentations**

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**FROM EXPERT TO NOVICE:  
LEARNING FROM LATINO COMMUNITY  
PARTNERS**

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OVERVIEW: FROM EXPERT TO NOVICE:  
LEARNING FROM LATINO COMMUNITY PARTNERS

*Janice D. Crist*

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UNIQUENESS OF LATINO SUBGROUPS IN THE  
SOUTHWEST: IMPLICATIONS FOR RESEARCH

*Evangeline M. Dowling*

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FROM EXPERT TO NOVICE: COMMUNITY PARTNERS'  
PERSPECTIVES AND STRATEGIES

*Nancy A. Allen, Ana C. Sanchez-Birkhead, Bryan Smith-Gibson, Michelle Litchman*

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COMMUNITY BASED PARTICIPATORY RESEARCH  
WITH ETHNICALLY DIVERSE POPULATIONS

*Heather Coats, Marylyn M. McEwen*

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LATINO PARENTS: ACCULTURATION, CULTURAL  
VALUES, AND CULTURAL STRESS

*Janet U. Schneiderman, Elizabeth Reifsnider*

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CODE SWITCHING: NON-VERBAL COMMUNICATION  
AMONG HARD-TO-REACH POPULATIONS

*Kathleen O'Connor*



# FROM EXPERT TO NOVICE: LEARNING FROM LATINO COMMUNITY PARTNERS

## Overview: From Expert to Novice: Learning from Latino Community Partners

*Janice D. Crist, PhD, RN, FNGNA, FAAN  
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A group of interdisciplinary scientists conducting research with Latino individuals, families, and communities acknowledged at the 2016 WIN conference a common experience of gaining invaluable knowledge and experience from community partners. Thus five topics will be presented related to: The importance of understanding characteristics of specific Latino sub-groups; using community-based participatory research (CBPR) principles from partners' and researchers' perspectives; and understanding and addressing acculturation, language, and code switching issues, in working to improve the care of Latino individuals and groups throughout the lifespan.

First, in **“Uniqueness of Latino Subgroups in the Southwest: Implications for Research,”** the author identifies specific needs and resources for the Mexican American (MA) sub-group which is predominant in the Southwest. Discussion of this exemplar of culture, supported by the literature, research findings, and personal experiences, demonstrates the importance of being aware of defining intra-group characteristics of partners in disparities research.

Second, in **“Community Partners as our Teachers”** the researchers present their community partners' perspectives on the specific insights that Community Health Workers (CHWs) and community leaders contribute to research studies with diverse cultures. Racially/ethnically diverse populations experience disparities for many chronic conditions. Community partnerships operate best on principles of mutual respect, common goals, equality/equity, and multi-directional learning. A CHW and Community Leader were key partners in shaping a PCORI grant. Ten strategies were used by a CHW and Community Leader to build the community advisory group. Including these strategies in Tier III PCORI resulted in funding a clinical study to help Latino individuals self-manage their diabetes.

Third, in **“Community Based Participatory Research with Ethnically Diverse Populations”** two researchers report on how select CBPR principles guided their community based research, challenges encountered, strategies used, and lessons learned. The contribution of community resources/stakeholders to recruitment, cultural tailoring, and building a collaborative partnership are discussed. Finally, the researchers describe strategies used to minimize power imbalances and address diabetes, hypertension, and cancer health disparities experienced among their participants—African American and Mexican American adults.

Fourth, in **“Latino Parents: Acculturation, Cultural Values, and Cultural Stress,”** the researchers report about interviewing Latino parents. They contend that researchers should acknowledge that culture significantly influences how Latinos parent their children. The extent to which parents are acculturated, their cultural values, and cultural stress affect their parenting styles and practices. The Acculturation Rating Scale for Mexican Americans-II, the Hispanic Stress Inventory, and the Mexican American Cultural Values Scale are measures that can be used to obtain a more valid picture of parenting. The presenter details use of these measures.

Fifth, in **“Code Switching: Non-Verbal Communication among Hard-to-Reach Populations,”** a multilingual anthropologist explains how a researcher must switch between not only spoken language, but embodied communication in participant observation methods. This methodology can be challenging but deeply informative. Challenges can include understanding the subtle messages being communicated and received by the messenger. Code switching, a linguistic term, is an existential phenomenon involving power and history as well as communication. The usefulness and challenges of code switching are illustrated vis-à-vis research and practice implications.

## FROM EXPERT TO NOVICE: LEARNING FROM LATINO COMMUNITY PARTNERS

### Uniqueness of Latino Subgroups in the Southwest: Implications for Research

*Evangeline M. Dowling, PhD, RN  
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Much research is conducted related to Latino/Hispanic populations. Generalizations about a group that contains many subgroups, especially Mexican-descent, Puerto Rican, and Cuban, can be misleading. Each subgroup has geographic, immigration, cultural, political, historical, and healthcare decision-making unique differences.

In addition, the Mexican-descent population comprises the largest subgroup of the Latino/Hispanic population in the United States. Mexican Americans consist of three subgroups: Mexicans, American Mexicans, and Mexican Americans. Despite important differences, these subgroups commonly engage in research as one group. To understand how each Mexican American subgroup partners in research, a review of the literature was conducted. Findings not only revealed limited data on Mexican American subgroups, but also on Mexican Americans as a group in general. Classifying Mexican Americans into subgroups may provide valuable information on the challenges faced by each subgroup.

The presenter will first describe differences between the three main subgroups in the United States. Then she will identify specific needs and resources for the three Mexican-descent sub-groups, which are predominant in the Southwestern United States. Discussion of this exemplar, supported by research findings and personal experiences, will demonstrate the importance of being aware of defining intra-group characteristics of community partners in disparities research.

# FROM EXPERT TO NOVICE: LEARNING FROM LATINO COMMUNITY PARTNERS

## From Expert to Novice: Community Partners' Perspectives and Strategies

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**Purpose:** To describe how Community Health Workers (CHW) and leaders can partner with researchers to teach them successful strategies for conducting research in their communities. We used these strategies in a Pipeline to PCORI award to strengthen our ties to the Latino Diabetes community.

**Background:** Racially/ethnically diverse populations experience disparities for many chronic conditions. To effectively address these disparities, health promotion initiatives require community-based partnerships and culturally-tailored approaches. Community partnerships operate best on principles of mutual respect, common goals, equality/equity, and multi-directional learning.

**Results:** The community leaders and a community health worker suggested 10 strategies to help build a community advisory group for our Tier III PCORI award with the goal to design and submit a grant for funding a clinical study to empower Latino individuals self-manage their diabetes. These ten strategies included: (1) invite community leaders, stakeholders, community health workers, nurses, researchers, in addition to individuals with diabetes to discuss a partnership for conducting a research study, (2) hold a meeting to understand how to facilitate a collaborative conversation and ways to address the community's needs/interest, (3) hold the meeting in a location within the community that is convenient for the community leaders/stakeholders/members/researchers, (4) empower and prepare everyone to participate in the meeting by inviting them to develop the agenda through Facebook, text messages, or at each meeting, (5) share a draft of study questions/research drafts and negotiate together; use working strategies such as World Café to get feedback, (6) collaboratively develop research questions, (7) be flexible, listen to everyone's input and reach coherence, (8) understand, embrace, and display cultural competency, (9) continually build trusting relationships between community & research partners throughout the project, and (10) attend important community events that can assist researchers to better understand the community of interest.

**Implications:** We learned from our community partners that it takes time and genuine investment to build a strong, trusting relationship between community stakeholders and researchers. Researchers need to be prepared listen to community partners and to share their expertise of the research process with the community while inviting the community to share their expertise of their own cultural norms and best practices for the feasibility and acceptability of new health interventions.

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**Funding:** Our PCORI community partnership faltered in the Tier I and Tier II awards until we embraced these principals in the Tier III awards. We now have a Community Advisory Group of 20 members that are highly engaged and writing a PCORI grant with researchers to address health concerns of Latinos with type 2 diabetes in their community.

# FROM EXPERT TO NOVICE: LEARNING FROM LATINO COMMUNITY PARTNERS

## Community Based Participatory Research with Ethnically Diverse Populations

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*School of Nursing*  
*Seattle, WA*

*Marylyn M. McEwen, PhD, RN, FAAN<sup>2</sup>*  
*Professor*  
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*College of Nursing*  
*Tucson, AZ*

**Purpose:** To describe community based participatory research principles and illustrate application of these principles with two community-based research studies with ethnically diverse populations.

**Background:** “Community based participatory research is defined as a partnership approach to research that equitably involves community members, organizational representatives and researchers in all aspects of the review process” (Minkler & Wallerstein, pg. 48).

**Methods:** Select principles of community based participatory research guided the two community-based research studies: 1) recognition of our communities as unit of identity (African American and Mexican American), 2) building on strength and resources within the community, 3) facilitating collaborative and equitable partnerships for the research phases, 4) engaging in a power-sharing process to attend health inequities, 5) promoting co-learning and capacity building among all partners, 6) emphasizing a local public health problem, and 7) disseminating findings and knowledge gained to all partners.

**Results:** In both studies community resources were critical to community entrée, recruitment of participants and cultural tailoring of the intervention. Key community members (e.g. congregational health nurses and promotoras) were engaged in a collaborative partnership throughout the studies. Investigators used a variety of strategies to minimize power-imbalances and address determinants of hypertension, cancer and diabetes health inequities. The last step was dissemination of findings across multiple levels to increase community capacity for future research and health behavior change.

**Implications:** Results provide support for integrating community based participatory research principles into community-based research when the investigator is not a member of the target community. For practical applications of CBPR, exemplar experiences of culturally competent interpersonal techniques (i.e.humor) will be shared. Future community-based research must engage local community assets, build collaborative relationships, address asymmetrical power relationships, and build community research capacity for ethnically diverse communities to effect the social determinants that underpin health inequity.

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**Funding:** Grants supported by <sup>1</sup>NIH/NINR under Award Number F31NR014964 and <sup>2</sup> NIMHD R01MD005837.

# FROM EXPERT TO NOVICE: LEARNING FROM LATINO COMMUNITY PARTNERS

## Latino Parents: Acculturation, Cultural Values, and Cultural Stress

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**Purpose:** Help researchers acknowledge that culture significantly influences how Latinos/as (hereafter referred to as Latino) parent their children and provide measurement tools useful for incorporating culture in research studies of Latino parents.

**Rationale:** The extent to which Latinos are acculturated to the dominant culture may influence parent-child relationships and parenting practices. Acculturation refers to the process of cultural learning and behavioral adaptation that takes place when an individual is exposed to a new culture. Latinos have varying levels of acculturation, depending on number of years lived in the U.S., country of origin, and generational status. For example, in a study regarding parenting practices and childhood dietary behaviors, researchers found that more acculturated parents utilized less control parenting styles, which are associated with unhealthy eating in their children. Further, these parenting styles were more influential on daughters' dietary patterns than sons'. Secondly, parenting styles and practices are affected by cultural values and cultural stress present in Latino families. The concept of *familismo*, a cultural orientation and obligation to the family, has been correlated with both increased control as well as greater parental warmth and involvement. Cultural stress is related to how parents adjust to the dominant culture. For example, when parents need language brokering from their children, there is more family stress and less effective parenting.

**Methods:** Three measurement tools will be described that can be utilized with Latino parents. 1. Caregiver acculturation can be assessed using the Acculturation Rating Scale for Mexican Americans-II. This is a 77 item assessment regarding preferences for language, entertainment, and people to spend time with. Use of this scale will provide researchers with a measurement of each parent's level of acculturation to determine the impact of this variable on parenting practices. 2. The Hispanic Stress Inventory can be used to assess immigration status through respondents' feelings of stress in the past three months. There are two versions, one for Latino immigrants and one for Latinos born in the United States. This tool allows researchers to relate immigration status and the related stressors to parenting. 3. The third tool is Mexican American Cultural Values Scale, which measures how affiliated Latinos are to traditional Mexican or traditional US mainstream cultural values.

**Results:** These instruments measure different constructs and in combination, yield additional understanding of important areas of assessment for researchers. Incorporating cultural measures when interviewing Latino parents can increase the validity of research findings by identifying the extent that culture affects parents and how these effects may influence other parenting measures.

**Implications:** Research in Latino communities depends on both listening to our research partners, including our participants in our studies, and including measures that are culturally relevant to our participants.

## FROM EXPERT TO NOVICE: LEARNING FROM LATINO COMMUNITY PARTNERS

### Code Switching: Non-Verbal Communication among Hard-to-Reach Populations

*Kathleen O'Connor, PhD  
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In linguistics, code switching is the practice among bilingual and multilingual people of changing, or switching, between languages, such as when bilingual people pepper their conversations with words and phrases from another language in which they have competence. Sometimes a second language has precisely the right word to express the complexity of the speaker's thought. "Code" refers to layers of meaning: code signifies all the meaning included in human communication that pertains to a specific word or phrase, and each language comes with its own sets of codes. In this presentation, I will discuss code switching in anthropological linguistics and in participatory ethnographic research. Code switching in participant observation entails not only learning and speaking the language of research participants, but also an embodied code switching: adopting new mannerisms, behavior and even dress so as to more effectively communicate with vulnerable and hard-to-reach populations. In anthropological field work, conforming to the social norms of the studied group through embodied code switching is important to a successful project.

This presentation draws on 20 years of participant observation research among hard-to-reach populations such as members of an Afro-Brazilian possession trance religion in Brazil; Mexican and Central American farmworkers; young adults psychologically impacted by the Mexican drug conflict; and Central American refugees in Texas. The presentation will consist of a summary of lessons learned in qualitative research through these experiences.

The implications of the presentation for nursing practice include learning how to develop a deeper cultural competence. For nursing research, this presentation provides exposure to the theory and practice of "deep play" and thick description in qualitative participatory research, first described by anthropologist Clifford Geertz.



## Abstracts of Poster Presentations

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### **THE FUTURE OF CHRONIC PAIN IS IN THE HANDS OF AN INTERPROFESSIONAL TEAM**

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OVERVIEW: THE FUTURE OF CHRONIC PAIN IS IN THE HANDS OF AN INTERPROFESSIONAL TEAM

*Kim D. Jones*

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GENOME WIDE ANALYSES REVEALS POTENTIAL SIGNATURE & NOVEL DRUG TARGETS IN FIBROMYALGIA

*Kim D. Jones, Terri Gelbart, Thomas C. Whisenant,  
Jill Waalen, Tony S. Mondala, David N. Iklé,  
Daniel R. Salomon, Robert M. Bennett, Sunil M. Kurian*

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RAISING THE INDEX OF SUSPICION FOR FIBROMYALGIA IN PRIMARY CARE PATIENTS WITH CHRONIC PAIN

*Jonathan H. Aebischer, Amanda W. St. John, Madeleine Sanford,  
Kaitlin Haws, Robert M. Bennett, Ronald Friend, Kim D. Jones*

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GROUP CARE FOR CHRONIC NONMALIGNANT PAIN: PATIENT AND PROVIDER PERCEPTION

*Jackie F. Webb, Kim D. Jones*

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YOGA AND MINDFULNESS IN PEDIATRIC PATIENTS WITH CHRONIC NONMALIGNANT PAIN

*Kari A. Firestone, Kim D. Jones, Anna L. Wilson*

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CANNABINOIDS FOR CHRONIC PAIN: EVIDENCE FROM THE LITERATURE AND A SURVEY OF 'BUDTENDERS'

*Stephanie Truex, Kim D. Jones*



# THE FUTURE OF CHRONIC PAIN IS IN THE HANDS OF AN INTERPROFESSIONAL TEAM

## Overview: The Future of Chronic Pain Is in the Hands of an Interprofessional Team

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Chronic pain is the #1 reason care is sought in the US. It is the leading cause of disability, work loss, abuse of opioids, and the primary driver of health care - costing more than cancer, diabetes, and heart disease combined. Nurses are not only the front line caregivers for patients with chronic pain, but are needed to lead in innovative ways through discovery, improvement, implementation, translational and data science. The US healthcare system is moving toward an interprofessional care model, with all team members practicing at the top of their license. Soon reimbursement will likely be based on patient outcomes rather than driven by procedures. Preparing nurses to directly shape this next care model and wave of research, platforms for sharing advances is key. This symposium is one such platform and will address five important aims to consider when treating patients with chronic pain in an interprofessional setting: 1) Determine how fibromyalgia may be diagnosed or treated genomically, 2) Propose how fibromyalgia can be rapidly differentiated from other chronic pain states by primary care providers, 3) Discuss how group medical visits may be a viable alternative to the standard office visit, 4) Evaluate the use of CAM therapies such as yoga and mindfulness in adolescents with chronic pain , and 5) Address what measures need to be taken to determine if cannabis is a safe and effective treatment for people with chronic pain. The discussion of these important points will highlight team science. It will also provide participants with a broader perspective of future diagnostic and treatment options for patients seeking care for chronic pain in an interprofessional, team-based setting.

# THE FUTURE OF CHRONIC PAIN IS IN THE HANDS OF AN INTERPROFESSIONAL TEAM

## Genome Wide Expression Analyses Reveals Potential Signature and Novel Drug Targets in Fibromyalgia

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Daniel R. Salomon, MD<sup>2</sup>, Robert M. Bennett, MD<sup>1</sup>, Sunil M. Kurian, PhD<sup>2</sup>

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<sup>3</sup>Rho Federal Systems Division

**Purpose:** Herein we have used agnostic whole genome gene expression as a potential probe for informing fibromyalgia's (FM) underlying biology and for developing a proof-of-concept diagnostic gene expression signature. We also sought to link FM associated genes that are targets of known drugs.

**Rationale:** Contemporary research has revealed a dysfunctional central nervous system as being an important component in the clinical presentation of fibromyalgia (FM). However, the reasons for this dysfunction are far from clear as the basic biology of FM is poorly understood. One problem in studying FM is the lack of a well-defined phenotype. Another hurdle to overcome is to identify biological therapeutic targets.

**Methods:** We analyzed RNA expression in 70 FM patients and 70 healthy matched controls. The isolated RNA was amplified and hybridized to Affymetrix Human Gene 1.1 ST Peg arrays. The data was analyzed using Partek Genomics Suite v. 6.6.

**Results:** The average FM patient was aged 45.5±7.7 years and had symptoms 17.2±12.2 years. FM patients exhibited a differential expression of 421 genes ( $p < 0.001$ ), several relevant to pathways for pain processing, such as glutamine/glutamate signaling and axonal development. There were 14 differentially expressed kinase molecules, 21 transcriptional regulators and 21 transporter molecules that have never been previously linked to FM. Overall, genes associated with immune/inflammatory responses were up-regulated as were genes associated with neuronal development and neurotransmitters. Conversely, genes associated with allergic responses were down-regulated. There were 13 genes differentially expressed in FM that are known targets of already available drugs, an objective in line with NIH's drug repurposing initiatives. We also identified a panel of candidate gene expression-based classifiers that could help establish an objective molecular diagnostic guide for the design and testing of new therapies for FM. Classifiers comprised of 10-71 probesets showed sensitivity, specificity, PPV, NPV and an AUC as high as 95%, 96%, 95%, 96% and 0.931.

**Implications:** These data contribute new targets for the further exploration of both existing drugs and development efforts to identify new candidate therapies based on molecular markers that may underlie FM disease mechanisms. Our novel blood-based molecular signature for FM, needs to be validated in a larger cohort of FM patients.

# THE FUTURE OF CHRONIC PAIN IS IN THE HANDS OF AN INTERPROFESSIONAL TEAM

## Raising the Index of Suspicion for Diagnosing Fibromyalgia in Primary Care Patients with Chronic Pain

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**Purpose:** The purpose of this study was to evaluate the usefulness of 3 simple measures, that when routinely used in a patient with chronic pain, could alert the primary care clinician to consider a diagnosis of fibromyalgia (FM).

**Rationale:** Fibromyalgia is a multi-symptomatic pain disorder that affects 10-15 million US adults, including 1 in 20 patients seen in primary care. As such, primary care providers are increasingly expected to recognize and diagnose these patients rather than rely on specialists such as rheumatologists.

**Methods:** We compared two groups of patients, those with FM and those with chronic pain without FM. Data sources included chart review, history, physical exam (digital pressure evoked pain at 5 paired sites, blood pressure cuff-evoked allodynia) and patient-completed surveys. The study was conducted at two primary care sites: a federally qualified health center in the community and an internal medicine/gerontology clinic in an academic health center.

**Results:** A total of 352 patients were studied (mean age  $50 \pm 16.3$  years, 70% female). Chart review revealed that 52 (14.7%) of these patients carried a diagnosis of FM in their medical record. We evaluated 3 simple measures, based on the literature and our own experience, that were of potential use in distinguishing fibromyalgia patients from patients with other chronic pain conditions: 1) a single question (“*I have a persistent deep aching over most of my body*”); 2) tenderness to pressure at 5 paired locations, and 3) blood pressure cuff evoked pain. FM patients endorsed the single question more commonly than those with pain but without FM ( $7.7 \pm 2.7$  vs  $4.1 \pm 3.4$ ;  $p > .0001$ ). A score of  $\geq 3$  (on a 0-10 scale) had a sensitivity of 0.92, with a specificity of .46. Patients with FM exhibited more bilateral pressure evoked tenderness compared to those with pain but without FM (60.8% vs 24.3%,  $p < 0.0001$ ). Pinching the Achilles tendon with 4 kg over 4 seconds was the most commonly endorsed tender area in FM patients (71%), compared to 24% in the patients with pain but no FM ( $p < 0.0001$ ). Patients with FM were tender at a lower level of BP cuff-evoked pain than those without FM ( $132.6 \text{ mmHg} \pm 45.5$  vs  $169.2 \text{ mmHg} \pm 48.0$ ,  $p < 0.0001$ ). The combination of all 3 tests generated a Receiver Operating Curve (ROC) of .82, providing good separation between FM and non-FM. However, the blood pressure cuff evoked tenderness assessment became nonsignificant ( $p < .10$ ). In sum, the single “deep aching” question provides a sensitivity/specificity of 92/46 and the Achilles a sensitivity/specificity of 71/73.

**Implications:** Two positive assessments (the question about a persistent deep aching over most of the body, and Achilles tendon tenderness) can significantly increase the likelihood that a patient with chronic pain has FM. By raising a primary care providers’ index of suspicion for FM, patients may be spared years of cycling through the medical system.

# THE FUTURE OF CHRONIC PAIN IS IN THE HANDS OF AN INTERPROFESSIONAL TEAM

## Group Care for Chronic Nonmalignant Pain: Patient and Provider Perception

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**Purpose:** The purpose of this study was to learn more about patient and provider perceptions of chronic pain management competence and willingness to try group medical visits.

**Rationale:** Many primary health care providers find working with patients with chronic pain time consuming, difficult, and frustrating. Likewise, patients are concerned that providers are not fully prepared to provide their care. A novel way to bridge the abyss between patients and providers may be delivering care in a group rather than individual visit. Group visits are medical appointments in which a group of four to ten patients and their caregivers meet together with their provider and members of the health care team- typically from 60 to 90 minutes. Group visits differ from group education in multiple ways including that they are reimbursed by third party payers.

**Methods:** We conducted a cross-sectional survey of providers working in 7 federally qualified health centers in the Pacific Northwest and interviewed 11 women with fibromyalgia.

**Results:** 69 of 126 providers responded (55% response rate), 73% of providers who prescribe (MD, NP/PA with a mean 14.9 years post-graduation) endorsed a lack of confidence managing chronic pain patients with 65% requesting further education. Sixty five percent viewed group care as a viable alternative to individual appointments. The two commonest barriers from providers were patient knowledge and patient willingness to participate in group care. Patients with chronic pain (ages 41-78 years of age, with an average 21 years history of fibromyalgia) had three primary concerns: confidentiality in the group visit, lack of provider knowledge to treat fibromyalgia, and inability to manage a group effectively.

**Implications:** Experienced providers feel unprepared to adequately manage patients with chronic pain, but are willing to participate in pilot programs of group care for chronic pain. Patient's concerns regarding confidentiality in group care and adequate provider knowledge need to be heeded when planning group care in this population.

# THE FUTURE OF CHRONIC PAIN IS IN THE HANDS OF AN INTERPROFESSIONAL TEAM

## Yoga and Mindfulness in Pediatric Patients with Chronic Nonmalignant Pain

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**Purpose:** This paper has two objectives: 1) to overview the published literature on yoga with mindfulness for pediatric patients with chronic non malignant pain, and 2) to report data from our feasibility trial of yoga and mindfulness in this same population.

**Rationale:** Affecting approximately 25% of the children (ages 1-18), chronic pain negatively impacts physical, psychological and social functioning. Difficulty participating in physical activities at school, leisure and at play is common. Likewise, these youth have fewer friendships and experience more social isolation reporting feelings of social rejection by their peers. Treatment is often delayed with at least 20% of adolescents who seek treatment being told they will simply “grow out of it”. Multiple position statements call for the use of education, exercise and cognitive behavioral strategies as a first round treatment in youth with chronic pain. Yoga with mindfulness is a form of gentle exercise that combines movement with self-awareness and cognitive reframing and has been demonstrated to be safe and effective in adults in fibromyalgia. However, it has not been tested in adolescents with similar chronic pain states.

**Methods:** We searched the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and CINAHL to September, 2016 together with reference lists of retrieved papers and reviews, clinical trials registries and contact with trial authors. For the trial, eighteen adolescents between the ages of 13-18 with chronic pain participated in a 90-minute weekly, 8-week single-arm interventional yoga study. Pain, functional disability, and quality of life were measured a baseline, 4-weeks and 8-weeks.

**Results:** The evidence from five separate studies with variable methodological quality (1 RCT, 2 wait-list controls and 2 open label trials) in pediatric pain populations shows the potential of yoga practice to reduce pain and functional disability. Across the studies moderate reduction in pain intensity was noted as well as a marked decrease in pre-post differences of daily function scores and an improvement in functional disability. For the clinical trial, feasibility was assessed by noting a 53.5% recruitment rate, 78.3% retention rate, and 93.8% adherence rate. There were no reported adverse events. Pain was significantly reduced ( $p=.046$ ), with no statistically significant changes noted in functional disability or quality of life. A total of 72.2% ( $n=13$ ) of the participants were treatment responders, exhibiting a clinically important difference in functional disability or pain. Of these responders, 77% showed a clinically important difference in pain and 23% showed a clinically important difference in functional disability.

**Implications:** Taken as a whole, the extant data as well as our clinical trial indicate the feasibility, acceptability and safety of yoga with mindfulness, used as a therapeutic intervention to reduce pain and functional disability in pediatric chronic pain. Larger randomized trials are required to more fully assess efficacy.

# THE FUTURE OF CHRONIC PAIN IS IN THE HANDS OF AN INTERPROFESSIONAL TEAM

Cannabinoids for Chronic Pain: Evidence from the Literature and a Survey of ‘Budtenders’

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**Purpose:** This paper has two objectives: 1) to overview the extant literature of cannabis use for chronic non-malignant pain, and 2) to disseminate novel data from a nationwide survey of ‘budtenders’. Budtenders (similar to bartenders) are sales associates who work in marijuana dispensaries and are the front line between patients and herbal cannabis.

**Rationale:** Herbal cannabis has been used medically for thousands of years. More recently, endogenous cannabinoids similar in chemical structure to tetrahydrocannabinol (THC) and cannabidiol (CBD) have been discovered within the human endocannabinoid system. In parallel, 25 US states and the District of Columbia have legalized cannabis for medical or recreational use. Oregon was the first state to decriminalize marijuana in 1973 and an early adopter of medical (1998) and recreational (2015) legalization. There are currently over 70,000 registered medical marijuana patients in Oregon and over 2 million registered medical marijuana patients in the US. Recent political changes and biological advances accelerate the need for clinicians to know how to advise patients regarding herbal cannabis use, often with an inadequate scientific evidence. Budtenders are currently filling the gap in advising patients on medical use of herbal cannabis in the absence of any meaningful certification or regulation.

**Methods:** We searched the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE for chronic noncancer pain, smoked marijuana or cannabinoids to September 2015, together with reference lists of retrieved papers and reviews, clinical trials registries and contact with trial authors. 591 of relevant papers were eventually included. For the survey, we developed 36 novel questions with input from key stakeholders including pharmacists, dispensary owners, budtenders, medical providers and OR legislatures. Survey is underway at time of submission.

**Results:** The preponderance of literature were on synthetic products (e.g., dronabinol). Cannabinoids demonstrated a modest analgesic effect (in 22 of 29 RCTs). 5 of 6 trials of inhaled cannabis were cross over design with an average of 2 weeks exposure. Masking was problematic in studies of inhaled marijuana. Small to moderate improvements in pain, mostly neuropathic, were noted. Multiple transient neurocognitive side effects were reported but there were no serious adverse events found to be associated with cannabinoids.

**Implications:** Synthetic or inhaled cannabinoids are likely a safe adjunct treatment for selected patients with chronic pain, particularly neuropathic pain. One multi-year trial is currently underway (COMPASS) that will yield critical data on efficacy over time and longer term risks. Data regarding how budtenders educate and interact with pain patients is needed to more fully assess cannabis as a management tool in chronic pain.



## Abstracts of Poster Presentations

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### HEALTH DISPARITIES

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#### INCREASING AWARENESS OF HEART HEALTH IN NORTHERN ARIZONA NATIVE AMERICANS

*Mary Anne Hales Reynolds, Norria M. Brice*

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#### OPPORTUNISTIC DIAGNOSIS OF STIS IN HIGH-RISK POPULATIONS

*Kathleen W. Boylan, Jonathan Mack*

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#### THE ACUTE CORONARY SYNDROME EXPERIENCE AMONG NATIVE AMERICAN MEN IN NORTHERN ARIZONA

*Norria M. Brice, Anne G. Rosenfeld, Janice D. Crist, Marylyn Morris McEwen*

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#### THE CULTURE OF RURAL HEALTH: PAST, PRESENT, AND FUTURE

*Jennifer B. Averill, S. Van Roper*

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#### PERCEPTION OF HEALTH AND HEALTHCARE IN ASIAN ELDERS: A NEEDS ASSESSMENT

*Jung-Ah Lee, Hannah Nguyen, Dara Sorkin, Julie Rousseau,  
Bernadette Milbury, Lisa Gibbs*

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#### DETERMINANTS OF MOBILITY LIMITATION IN COMMUNITY-DWELLING HISPANIC OLDER ADULTS: A SYSTEMATIC REVIEW

*Angelina Flores-Montoya, Jane Chung*

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#### PROMOTING PHYSICAL ACTIVITY IN RURAL OLDER ADULTS POST CARDIAC HOSPITALIZATION

*Gordana Dermody, Demetrius Abshire,  
Megan Rosenkranz, Katelyn McFaul*

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#### CORRELATES OF SPOUSAL SUPPORT AMONG KOREAN IMMIGRANTS WITH TYPE 2 DIABETES

*Sarah E. Choi, Joy Toyama*

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UNCOVERING BARRIERS TO FAITH-BASED SUPPORT  
FOR OLDER AFRICAN AMERICANS WITH HIV/AIDS

*Maisha Parnell, Joleen Smeltzer, Janet C. Mentes, Linda Phillips, Ebere Ume*

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PREVALENCE AND RISK FACTORS FOR ANXIETY  
AND DEPRESSION IN HISPANIC CHILDREN

*Yuqing Guo, Julie Rousseau, Monique Daviss, Sara Flores, Patricia Renno,  
Kathleen Saunders, Susanne Phillips, Lorraine Evangelista*

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BARRIERS AND PREDICTORS TO LATENT TB INFECTION  
TREATMENT ACCEPTANCE AMONG IMMIGRANTS

*Fayette Nguyen Truax*

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STATE LEVEL FACTORS' INFLUENCE  
ON RURAL ACCESS TO HEALTH CARE

*Molly Vaughan Prengaman*

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STROKE SYMPTOMS, RISK FACTORS AND ACCULTURATION  
AMONG CAMBODIAN AMERICANS

*Samantha Sangsanoi-Terkchareon, Tina Ho, Eunice Lee*

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PROSTATE CANCER KNOWLEDGE AND  
INTENTION TO SCREEN IN OMANI MEN

*Joshua K. Muliira, Asaad Nasser Al Yahyai, Hazaa Sami Al-Saidi*

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CHINESE NURSES' EMOTIONAL EXPRESSIONS AND  
RESHAPED VALUES WHEN CARING FOR DYING PEOPLE

*Xianhong Li, Si Pan, Jiaqi Zeng, Mengquan Wang, Deborah Koniak-Griffin*

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UNDERSTANDING THE OPPORTUNITIES AND BARRIERS  
FOR REFUGEE YOUTH IN THE UNITED STATES

*Robin Narruhn, Bonnie H. Bowie, Danuta Wojnar*

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SOCIO-DEMOGRAPHIC FACTORS AND POSTPARTUM  
DEPRESSION AMONG RURAL HISPANIC WOMEN

*Younglee Kim, Vivien Dee*

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DEVELOPING THEORETICAL FRAMEWORK TO REDUCE  
CANCER STIGMA IN A NATIVE AMERICAN CONTEXT

*Yoshiko Yamashita Colclough*

# HEALTH DISPARITIES

## Increasing Awareness of Heart Health in Northern Arizona Native Americans

*Mary Anne Hales Reynolds, RN, PhD, ACNS-BC*  
*Associate Professor*

*Norria M. Brice, RN, DNP, ACNP-BC*  
*Assistant Clinical Professor*

*Northern Arizona University*  
*Flagstaff, AZ*

**Purpose:** The purpose of this project is to increase knowledge about risk factors associated with heart disease and early signs and symptoms of Acute Coronary Syndrome (ACS) in Navajo living in and around Tuba City, AZ, and to provide suggestions and examples of culturally adapted heart healthy food and diet by demonstrating meal preparation and providing 2-3 popular Navajo recipes. This will be accomplished by providing culturally appropriate and translated educational materials relating to risk factors and early signs and symptoms of ACS, with a focus on diet and nutrition.

**Background:** Heart disease has been the number one cause of death in the Native American (NA) population for decades and is an adverse health disparity for this population with heart disease mortality rates higher in Native Americans than in the U.S. population. For Native Americans (NA), the incidence of heart disease is significant and has been attributed to increased prevalence of heart disease risk factors among NA including modifiable risk factors associated with diet and nutrition that include hyperlipidemia, obesity and an unhealthy diet. The challenge of rapid identification and treatment of ACS for Navajo in Northern Arizona is complex. Many of the barriers are difficult to change and costly to implement. Nationally, community education about risk factors associated with heart disease and early recognition of signs and symptoms of ACS has been shown to be effective to improve health promoting behaviors and reduce time to treatment. However, many of the currently available educational materials are written for an Anglo population and do not address unique Navajo cultural ways or language. For the Navajo, opportunities for education are limited due to access of information as well as information not being culturally relevant. Increased awareness for heart attack symptoms and heart disease risk factors and diet modification will facilitate prompt presentation for treatment of acute coronary syndrome, thus reducing morbidity and mortality, and improving health outcomes in this population.

**Methods:** This community education project will disseminate culturally adapted and translated educational information about ACS and a heart healthy diet to the Navajo community around Tuba city by setting up a booth in at least three popular community activities such as the weekly swap meets or Chapter House meetings. The booths will be staffed with health care professionals and a native interpreter who can answer questions and provide suggestions related to risk factors, signs and symptoms of ACS, and healthy meal planning. In addition, real time demonstrations related to adapted healthy meal preparation will include food samples and 2-3 recipes.

**Expected Outcomes and Conclusions:** By increasing awareness of risk factors and signs and symptoms of ACS, Navajo's living in the Tuba City area will be able to recognize early signs and symptoms of ACS and initiate treatment sooner. In addition, by actively modifying risk factors associate with diet, the overall incidence of ACS may decrease.

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**Funding:** National Institute of Health-National Institute of the Minority Health and Health Disparities and The Center for American Indian Resilience (CAIR).

# HEALTH DISPARITIES

## Opportunistic Diagnosis of STIs in High-Risk Populations

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Jonathan Mack, PhD, RN, APN-BC*

**Purpose:** The goal of this project is to increase opportunistic diagnosis of sexually transmitted infections using vaginal self-swabbing or urine tests in high-risk populations. In addition, the goal is to demonstrate the benefit of implementing vaginal self-swabbing as a simple diagnostic for gonorrhea and chlamydia.

**Background:** Chlamydia and gonorrhea continue to be a detriment to public health, particularly to those under the age of 25. These sexually transmitted infections can cause long-term health problems and should not be viewed lightly. Specifically, untreated or recurrent chlamydia is the number one cause of ectopic pregnancy, tubal infertility, and pelvic inflammatory disease (PID). The cost of these chronic conditions is unsurprisingly very high; recurrent PID can cost upwards of \$11,000 per patient over their lifetime.

Chlamydia continues to be an issue within the US military where rates are higher than the civilian population. To help mitigate this issue and prevent further infection rates it is important to screen and diagnose patients appropriately and opportunistically. Patients with urinary tract complaints present a prime opportunity for screening since chlamydia and gonorrhea can be a cause of urethritis and dysuria.

**Brief Description:** The project will take place over the course of 3 months at a large military urgent care. Data will be collected prior to initiation of the project, and again at completion. This particular urgent care is staffed with exclusively nurse practitioners. Each NP will be trained prior to initiating the project and clear guidelines and patient criteria will be provided in multiple formats. The patient sample will include female patients under 25 years that present with complaints of dysuria. Urine STI testing or vaginal self-swabbing will be offered and utilized to rule out gonorrhea and chlamydia infections for patients that meet criteria. Patients with positive results will be called-back and prescribed appropriate antibiotics and given resources for STI prevention.

At the urgent care where this project will be completed the current practice for testing includes GC/Chlamydia urine tests on patients with a negative urinalysis only. The urine tested is frequently the same clean sample that was provided for the initial urinalysis. In lieu of the patient having to provide a clean and dirty catch urine, vaginal swabs can be provided to the patient as a method of testing. Vaginal self-swabbing has been determined to be just as effective as swabs taken from a pelvic exam, while also being preferred by patients and staff alike due to its non-invasive quality.

**Outcomes:** Outcomes are pending; results will be expected in February 2017. Intended outcomes include increase in number of patients tested for GC/Chlamydia, increase diagnosis, and increased use of vaginal self-swabs.

**Conclusions:** Pending results; In conclusion, chlamydia and gonorrhea are not benign infections and should be taken very seriously. With increased diagnosis of patients in at-risk populations, there could be a considerable decrease in reports of PID, infertility, and chronic health concerns.

## HEALTH DISPARITIES

### The Acute Coronary Syndrome Experience among Native American Men in Northern Arizona

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*Professor and Gladys E. Sorensen*  
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**Background:** Heart disease is the leading cause of death in Native Americans, with mortality rates higher than in the U.S. population. Little is known about symptoms of acute coronary syndrome (ACS), personal experiences, and treatment-seeking behaviors in Native Americans.

**Purpose:** To describe the ACS experience in Native American male adults residing in northern Arizona by examining how they describe their ACS experience, perceptions of the barriers and facilitators influencing treatment-seeking behaviors, and prodromal and acute symptoms of ACS.

**Method:** A convenience sample of 9 Native American men diagnosed with ACS and subsequent percutaneous intervention within the past 12 months was recruited. A qualitative dominant mixed-methods design was used. Participants' descriptions of their ACS experiences were collected using a semi-structured interview. Symptom data were collected using the McSweeney Acute and Prodromal Myocardial Infarction Symptom Survey. Data from interviews were analyzed using qualitative description. ACS symptoms and demographic data were analyzed using descriptive statistics.

**Results:** Mean age was 58.6 years (range 51–74). All had 1 or more CVD risk factors prior to their myocardial infarction (MI) (hypertension, n=6; diabetes mellitus, n=5). Mean time from symptom onset to hospital presentation was 7.4 hours (range 1.5–24.5). The most frequently reported prodromal symptom was tired/ fatigue (n=5). The most frequently reported acute symptoms were dyspnea, indigestion, nausea, and neck/throat discomfort. Most had no knowledge of ACS risk factors or symptoms (n=8). Influences to not seeking treatment included ignoring symptoms (n=5), not attributing symptoms to an MI (n=6), and waiting for symptoms to resolve (n=3). Influences to seeking treatment were worsening/non-resolution of symptoms (n=8) and family (n=5). Lack of access to healthcare facilities and environmental challenges contributed to treatment delay.

**Conclusions:** These findings give new insight into ACS symptoms and experiences of Native American men and reinforce current knowledge of the health disparities that exist in this population. Unique difficulties encountered with healthcare access contributed to considerable treatment delays.

# HEALTH DISPARITIES

## The Culture of Rural Health: Past, Present, and Future

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**Purposes/Aims:** The purposes of this paper are (1) to describe the content areas and delivery platform for a graduate elective course (Nursing 611) on global, rural and cultural health that has run successfully for 12 years, attracting students at the University of New Mexico and across WIN's Nursing Education Xchange (NEXus) campuses; and (2) to present the revised/future content areas and delivery platform, which reflect doctoral education *linking* research, practice and education, as well as innovative delivery platforms for the modern age.

**Rationale/Background:** Rural health indicators and diverse cultures share burdens of health disparities and inequities across the globe, including the US. N 611 has focused content on philosophical foundations, public health principles, multiple ways of knowing, demographic and migration trends, competing economic/political agendas, the WHO sustainable development goals, analysis of cultures, health equity, definitions of rurality, models of care delivery, and strategies for effective engagement and intervention (e.g., partnership models, mixed methods of inquiry, communications). It has been delivered fully online via Blackboard Learn. Given health care changes at all levels, as well as emerging technology, a need exists to leverage technology to provide not only academic center education to students, but to provide training in the *use* of technology including video conferencing, online education delivery, provision of clinical resources, and virtual patient-provider interactions. Rural communities are challenged in access to health care, yet technology is available to effectively and efficiently deliver education and health care improving healthcare access in most if not all of these areas. Plans for this class are to include new pertinent technologies as they develop.

**Outcomes Achieved/Documented:** Since the class began in 2004, it has never been canceled due to low enrollments, has produced 4 limited-publication e-books written by the students, linked dozens of students to national/international rural health and cultural organizations, and informed rural-focused dissertations of approximately 12 students from marginalized cultures or underserved areas. As transition carries the course into expanded content and exciting use of technology, more dissertations, clinical projects, and changes in care delivery are anticipated.

**Conclusions, Implications for Clinical Practice/Education, Recommendations for Future Research:** Healthcare remains a consistent challenge to deliver to rural populations. Consistent with IOM recommendations, nursing is strategically poised to provide this healthcare. Research and clinician nurses not only need ongoing education about the history and needs of rural communities, but also require training in emerging technology, developing competence in these resources to favorably impact rural community health. The communication facilitated by this technology will allow bilateral communication so that accumulated academic knowledge is de-monopolized and the outlying rural spokes can in turn inform the academic center. Continuing to build on the evolving academic knowledge base and integrating emerging technologies will provide the tools for current and future clinicians to improve rural community health outcomes.

## HEALTH DISPARITIES

### Perception of Health and Healthcare in Asian Elders: A Needs Assessment

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**Background and Aims:** The growingly diverse aging population has implications for our healthcare system and geriatric workforce's capacity and preparedness to provide culturally responsive care to underserved ethnic minority older adults. To address this potential gap, we have built a strong partnership between an academic campus, including schools of Medicine and Nursing, and community-based service providers to train healthcare professionals and community healthcare workers to better serve ethnic minority older adults. A core aim of this larger effort was to identify and describe underserved seniors' perceptions on health/illness and their experiences with healthcare services in the United States (U.S.).

**Methods:** We conducted one-on-one, semi-structured interviews with 10 Vietnamese and 10 Korean American elders (aged 65 or older) to assess their perceptions about: (1) health and illness, (2) challenges with aging, including depression, dementia, elder abuse, and end-of-life, (3) community support, and (4) healthcare experiences. Interviews were audio-taped and translated and transcribed into English by two experienced bilingual researchers. **Results:** The majority of participants were females; all had health insurance; more than half live with spouse or family; the majority has lived in the U.S. for more than 20 years. Vietnamese and Korean participants similarly defined good health as the absence of physical and /or mental illness, being independent – not being a burden to family, having the ability to carry out chores, or having the ability to socialize with friends. Concerning the challenges with aging, participants expressed that as they got older, they felt more isolated, lonely, and undignified, and felt immense stress from financial difficulties. Many reported being aware of elder abuse and some reported having heard of occurrences of elder abuse among acquaintances. Most were open to hospice care as their end-of-life care. The majority of those interviewed shared that memory loss was a big concern and saw a need for education to prevent depression and dementia. Regarding community support, most said they received support from family, church, or a local ethnic-specific service agency. Many expressed (that) they wanted to receive services specific to their culture or language, including foods, caregiving, and transportation. Lastly, participants rated their experiences with the U.S. healthcare system as positive overall. Most were thankful to have access to free, routine medical care and screenings that they would otherwise not have in their home country. Some reported the use of herbs/acupuncture in addition to Western medicine. Nonetheless, a few shared some unhelpful encounters with medical providers, including long waits, feeling rushed and disrespected during visits, and lack of patient education and informed decision making. Many appeared hesitant to initiate conversations about mental health concerns.

**Conclusions:** These findings highlight areas of strength as well as some key challenges in the current health care system when it comes to meeting the needs of ethnically diverse older adults. Our results will be used to develop educational programs for geriatric workforce and healthcare professionals, thereby contributing to a culturally responsive and compassionate healthcare system for older patients of ethnic minorities.

## HEALTH DISPARITIES

### Determinants of Mobility Limitation in Community-Dwelling Hispanic Older Adults: A Systematic Review

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**Purpose:** This systematic review examined scientific literature to determine the current state of knowledge about determinants associated with mobility limitation among community-dwelling Hispanic older adults ( $\geq 60$ ).

**Background:** Mobility is critical for healthy aging and quality of life and is linked in adverse health outcomes, such as disability, falls, hospitalization, and death. Hispanic older adults have a higher prevalence rate of mobility limitation due to poor access to primary care and disproportionately high prevalence of disabling conditions such as obesity and diabetes mellitus.

**Methods:** A systematic search of PubMed, PsycINFO, and CINAHL databases was performed using the following terms, 'mobility', 'walking difficulty', 'gait', 'balance', 'older adults', 'elderly', 'Hispanic', 'Latino', and 'Mexican', yielding 911 articles from 1972 to 2015. Studies were included if they were English language, provided population-level data, and focused on community-dwelling older adults. After abstract and full text review, 18 observational epidemiological publications that met all eligibility criteria were included. Relevant literature was organized based on design, purpose, sample, mobility assessment tool, and factors associated with mobility limitation.

**Results:** Different constructs of mobility were identified such as gait speed, lower body performance, activities of daily living, difficulty walking and climbing stairs, and life-space mobility. Mobility determinants were categorized into five categories based on the theoretical framework of mobility. *Physical determinants:* 15 studies identified physical factors related to mobility limitation with seven showing significant associations between obesity and mobility. Mobility limitation was associated with diabetic conditions, medical conditions, disease history, and pain. *Psychosocial determinants:* Six studies identified higher depression symptoms as significantly associated with lower body disability and functional limitation. Walking difficulty was reported in people with less than high self-esteem and slower walking was more likely with reported lower positive affect. *Cognitive determinants:* Cognition at baseline had significant effect on physical performance score two years later. *Cultural determinants:* Ethnic differences showed slower gait speed for US-born and foreign-born Hispanics compared to US-born non-Hispanic whites. Mexican American older adults had significantly lower physical performance scores compared to non-Hispanic whites and the worst physical function compared to Black Americans and Whites. *Demographic determinants:* Mobility limitation was significantly associated with older age, being female, lower income, lower education level, and financial strain. Mobility showed a relationship with past occupation, and less difficulty walking was reported when not married.

**Implications:** Community-dwelling Hispanic older adults have higher mobility limitations compared to non-Hispanic older adults with various factors influencing mobility. This review suggests directions for future research to further identify the unique features influencing mobility limitations among Hispanic older adults. Culturally and linguistically appropriate interventions to prevent mobility limitation are needed for the Hispanic population. Additional investigation is necessary to examine environmental determinants of mobility and include heterogeneous Hispanic groups.

## HEALTH DISPARITIES

### Promoting Physical Activity in Rural Older Adults Post Cardiac Hospitalization

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**Purpose/Aims:** The purpose of this pilot study is to improve the hospital-to-home transition of rural community-dwelling older adults who are hospitalized for cardiovascular disease (CVD). The specific aims are to 1) increase physical activity; 2) decrease levels of depressive symptoms; and 3) improve physical functioning, emotional well-being, and social functioning using an in-home coaching program that promotes safe physical activity. We hypothesize that the in-home coaching program will result in favorable changes in each outcome from baseline to 60 days following hospitalization.

**Rationale/Conceptual Framework/Background:** Rural dwelling older adults are more socioeconomically disadvantaged than their urban counterparts and often lack adequate access to medical care and opportunities to engage in physical activity. Due to these challenges, rural older adults recently hospitalized for CVD are particularly vulnerable to a difficult hospital-to-home transition. Normal age-related musculoskeletal changes and hospital-acquired functional decline further affect the ability of older adults to engage in physical activity. Decreased physical activity levels in this population could increase the risk for other adverse health outcomes including falls and rehospitalization. Promoting safe, home-based physical activity in community-dwelling older adults with CVD may lead to an improved hospital-to-home transition. We have therefore developed an in-home coaching program that seeks to promote the self-management of physical activity in this population. Our program is guided by the Individual and Family Self-Management Theory that address contextual factors, self-management processes and enhancements, and both proximal and distal outcomes.

**Methods:** A mixed methods approach including quasi-experimental and qualitative descriptive designs will be used. Approximately 25 rural-dwelling older adults will be recruited from two community-based hospitals in the Pacific Northwest of the U.S. Patients must meet inclusion criteria of being 60 years of age and older and returning to his/her rural home after hospitalization in one of five selected rural counties in Washington. Patients will be excluded if they have discharge orders restricting physical activity or are undergoing active cancer treatment. Patients will be enrolled in the hospital and followed for 60 days through two telephone calls and two home visits. Data will be collected at baseline during the hospitalization and at 30 and 60-day follow-up visits. Physical activity levels will be assessed using a Fitbit. Depressive symptoms will be assessed using the Geriatric Depression Scale. Physical functioning, emotional well-being, and social functioning will be assessed using the Rand SF-36.

**Results:** Recruitment is currently in progress. Results will be presented.

**Conclusion/Implications:** Findings from this pilot study may provide insight about the effects of promoting self-management of physical activity on health outcomes in rural-dwelling older adults after being hospitalized for CVD. Our study may contribute to a greater understanding on how to better assist rural community dwelling older adults with CVD to maintain physical function to live healthier lives in their own home and community.

**Funding:** This study was funded by the Empire Health Foundation Rural Aging Responsive Grant; funding amount: \$10,000.



# HEALTH DISPARITIES

## Correlates of Spousal Support among Korean Immigrants with Type 2 Diabetes

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**Purpose:** To examine correlates of spousal support in diabetes self-care among Korean immigrants

**Background:** Support from spouse is associated with improved diabetes self-care and outcomes. However, little is known about diabetes-related spousal support in Korean immigrants.

**Methods:** Korean immigrant seniors (ages 60 and over) with type 2 diabetes were recruited from two Korean community clinics in Southern California. Two bilingual research associates conducted one to one in-person interviews with 135 seniors using survey questionnaires. The dependent variable was diabetes spousal support measured by Diabetes Care Profile (DCP) which has 4 subscales (support needs, support received, support attitudes, and support behaviors). Independent variables were patient diabetes worries (measured by Problem Areas in Diabetes Scale: PAID), self-disclosure of distress related to diabetes (measured by Diabetes Distress Disclosure Index: DDDI), acculturation (measured by Short Acculturation Scale for Koreans: SAS-K), quality of marriage (measured by Quality of Marriage Index: QMI), depression (measured by Center for Epidemiological Studies – Depression Inventory: CES-D) as well as demographic variables. Descriptive statistics were used to describe the characteristics of the sample. Correlations were examined to determine if there is a linear relationship between the dependent variable and each of the independent variables.

**Results:** The sample included 67% men. The mean age of the participants was 71( $\pm$  8.11) years old with mean duration of diabetes of 12 ( $\pm$ 9.12) years. The average hemoglobin A1C was 7.05( $\pm$ 1.26). Acculturation ( $p < 0.001$ ) and diabetes worries ( $p < 0.001$ ) were positively correlated with spousal support need. Self-disclose of diabetes distress was positively related ( $p = 0.0049$ ) with spousal support received. Acculturation ( $p < 0.05$ ), quality of marriage ( $p < 0.001$ ), self-disclosure of diabetes distress ( $p = 0.043$ ), and depression ( $p = .0026$ ) were positively correlated with spousal support attitudes. Quality of marriage ( $p = 0.016$ ) and self-disclosure of diabetes distress ( $p = 0.0002$ ) were positively correlated with spousal support behaviors.

**Conclusion:** Diabetes worries, self-disclosure of diabetes distress, acculturation, quality of marriage, and depression are significant correlates of diabetes spousal support in Korean immigrant seniors. Further investigation is needed to better understand the role of each of these correlates in improving diabetes-related spousal support in this population.

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**Funding:** This study was supported by National Institutes of Health (NIH) Grant UL1 TR000153 and KL2 TR000147.

## HEALTH DISPARITIES

### Uncovering Barriers to Faith-Based Support for Older African Americans with HIV/AIDS

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**Purpose:** The purpose of this integrative review was to explore barriers to faith-based support faced by African American HIV/AIDS infected parishioners (IP) age 50 and older who attend predominately African American (AA) churches.

**Background:** HIV/AIDS disease infects the AA community at an alarming rate. AAs make up approximately 12% of the US population but account for 44% of the new reported HIV/AIDS infections. Older adults are now emerging as a high risk group for contracting HIV/AIDS. In 2014, AA accounted for 43% of the new HIV/AIDS cases among 50 years and older population. Older adults are at a high risk for contracting HIV/AIDS due to lack of knowledge regarding how HIV is contracted, reluctance of older adults to discuss sexual habits with Health Care Providers (HCP) and reluctance of providers to discuss risk factors with this population. Historically, AA churches were seen as places for refuge and support for African Americans dealing with adversity. Literature suggests that African Americans who receive support from faith-based organizations while living with a chronic disease such as HIV/AIDS have improved physical and mental well-being which contribute to longer and healthier lives. Sustained support and participation among church goers lead to resiliency and empowerment. These perceived benefits of church-based support are essential among older AAs. However, anecdotal evidence suggests there is a lack of support for HIV/AIDS IP in AA churches.

**Methods:** The journal databases of CINAHL, PsychINFO and Google Scholar were accessed from the years 2000 to present using the following key words: HIV/AIDS Infection, stigma, church, older AAs and perceived barriers in the church. Initially 12 articles were identified. Eight articles were excluded because their focus was not on faith based support but on prevention, screening strategies, the adolescent populations and views of pastors and other church leaders.

**Results:** Four articles were critically analyzed. Results uncovered barriers to faith-based support for HIV/AIDS IP including: fear of judgement (disapproval of lifestyle), fear of disaffiliation, a sense of shame and guilt (I should have known better), stigma from disclosure and fear of the intensity of religious interventions. When church goers were faced with these barriers, they were less likely to attend church and often isolated themselves to prevent discrimination. Results also determined that few churches have programs for continued support that help address challenges faced by older AA parishioners infected with HIV/AIDS.

**Implications:** Fear of judgement, church separation, sense of shame and stigma of disclosure are all barriers that prevent AA IP 50 years and older from attending church and receiving sustained support. Further research is needed in the area of barriers to church attendance among AA IP 50 years of age and older. By addressing these barriers and decreasing the associated stigma, the church can be a welcoming place for acceptance and support and HIV/AIDS can be seen as a health issue rather than a moral issue.

## HEALTH DISPARITIES

### Prevalence and Risk Factors for Anxiety and Depression in Hispanic Children

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**Purposes:** To describe the mental health problems in young children in an underserved Hispanic community.

**Background:** Evidence supports mental disorders in children are associated with adverse developmental outcomes. Santa Ana has social and economic risk factors for poor mental health outcomes (highest rate of violent crimes, Hispanic youth representing the highest proportion of juvenile gang members, and 21.1% living under 100% federal poverty level). However, little is known about prevalence and risk factors for anxiety and depression in Hispanic youth in this community.

**Methods:** Two hundred and four students of 3<sup>rd</sup> and 4<sup>th</sup> grades at a Charter School were invited to participate in this study. Students filled out the Revised Child Anxiety and Depression Scales (Anxiety Cronbach's Alpha: .83; Depression Cronbach's Alpha: .77); teachers used the Emotion Regulation Checklist to measure child emotion regulation (Lability/Negativity Cronbach's Alpha: .92; Emotion Regulation Cronbach's Alpha: .83). A total of 195 students (82.6% Hispanic and 81.0% living with both parent, mean age of 8.7 years) had both self-report and teacher-report data. T-tests, Pearson correlation, and hierarchical regression analyses were conducted using SPSS 21.

**Results:** Findings showed that 6.7% and 5.64% of the students were anxious and depressed. Third graders ( $M_{3rd}=9.35$  vs.  $M_{4th}=7.48$ ), students living with single parent ( $M_{living\ with\ single\ parent}=11.18$ , vs.  $M_{living\ with\ both\ parent}=7.87$ ), and girls ( $M_{girl}=9.41$  vs.  $M_{boy}=7.53$ ) reported higher depression all  $p$ 's  $\leq .01$ . Girls were also more anxious ( $M_{girl}=16.62$  vs.  $M_{boy}=12.13$ ,  $p < .001$ ). There was a strong and positive association between anxiety and depression in these children ( $r = .70$ ,  $p < .001$ ). Controlling for covariates, negativity was significantly associated with depression ( $\beta = .26$ ,  $p = .001$ ); the association between negativity and anxiety was only marginally significant ( $\beta = .16$ ,  $p = .06$ ).

**Implications:** Our findings show the high comorbidity of depression and anxiety in young children and support the need to screen for both disorders in the Hispanic children. The relationship between negative emotional experience and depression suggests that effective management of negativity may be a critical component of early prevention and intervention. Longitudinal research should be conducted to examine how depression and anxiety in children contributes to physical and mental diseases among adolescents and young adults in this community in future studies.

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**Funding:** This study was funded by University of California Irvine Advance Spirit Grant and UCI Institute for Clinical and Translational Sciences Campus-Community Research Incubator Grant (NIH: IU54RR031271).

## HEALTH DISPARITIES

### Barriers and Predictors to Latent TB Infection Treatment Acceptance among Immigrants

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**Purpose:** To identify barriers and predictors affecting acceptance and initiation of latent tuberculosis infection (LTBI) treatment among a group of Vietnamese immigrants offered care from the Orange County Public Health Pulmonary Department, California.

**Background:** Non-adherence to latent TB infection treatment has consistently been a problem among foreign-born populations in the U.S. TB infections among foreign-born Vietnamese has steadily climbed in recent years. A pilot study in California identified over one third of Vietnamese immigrants (36.1%) declined free treatment offered by the Orange County Public Health Department from 2010-2011. A better understanding of treatment decline in this population is needed to develop culturally appropriate interventions aimed at improving overall treatment acceptance, which can lead to reduction of future TB cases.

**Methods:** This study examined barriers and predictors to LTBI treatment acceptance and initiation. A total of 97 Vietnamese immigrant charts that met the criteria for LTBI treatment from August 2014 to June 2015 were reviewed. Of the 97 charts, 51.5% accepted treatment and 48.5% declined. Data collected include socio-demographic variables and anecdotal statements from patients related to treatment refusal and drop out. Chi-square test of independence was used to identify variables associated with treatment acceptance. Multivariate regression was used to determine predictors of treatment acceptance.

**Results:** Barriers to treatment acceptance reported by patients were identified as follows: concerns with medication side effects (17%), beliefs related to not being sick and not needing medication (15%), unknown reason/refuse (11%), busy schedule (11%) and other reasons related to concurrent health problems. Failure to return for treatment initiation included missed appointments (43%) and a change of mind (57%) after treatment acceptance. Predictors of treatment acceptance through chi-square analysis are as follow: age group between 18-44 years of age, English speaking, lived in the U.S. over 10 years, recent travel out of the U.S., TB contacts, abnormal chest x-ray, positive interferon-gamma release assay blood result, single status, current employment and smoking history. Predictors of treatment acceptance in the multivariate regression analysis were smoking history and TB contacts.

**Implications:** Data from this study will help health care providers working with Vietnamese immigrants identify individuals most at risk for not accepting treatment early. Future patient education should focus on correcting inaccurate information related to latent TB infection and addressing myths about medication side effects. An increase in acceptance rate will have long-term impacts on reducing both TB and latent TB reactivation cases in the future.

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# HEALTH DISPARITIES

## State Level Factors' Influence on Rural Access to Health Care

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**Purposes/Aims:** The purpose of this study is to explore and describe state-level factors', such as health care delivery systems, and political and socioeconomic issues, affect on access to rural health care services.

**Rationale/Conceptual Basis/Background:** Rural access to health care services has been an ongoing concern in the United States for over 100 years. Many rural health care policies are implemented at the state level. Factors such as health care delivery systems, and political and socioeconomic issues, influence policy outcomes and access to health care services in rural areas. Conceptually, this study drew upon Aday, Begley, Larison, & Balkrishnan's (2004) Framework for Applying Health Services Research in Evaluating Health Policy, a comprehensive model developed to discover and explore relevant health policy factors and the relationships between those factors that may impact the health of individuals and populations.

The U.S. health care system is currently undergoing great transition in attempt to improve quality and control skyrocketing costs to individuals, employers and governmental programs. Expanded insurance coverage, improved coordination of care, patient-centered care, pay for performance, an emphasis on preventive care, and enhanced community-based health services are all key components of the ACA with the potential to impact access to health care services in rural areas. This time of health care system upheaval, political polarization, and economic difficulty is an opportune time to explore the status of rural access to health care services and the factors that influence it.

**Methods:** A case study strategy was utilized in this study. Twenty semi-structured interviews were conducted with participants from four major groups: state policymakers, health care delivery organization representatives, clinicians, and interest group representatives. In addition, examination and analysis of federal and state government documents, reports from foundations, organizations such as professional associations, and other pertinent interest groups related to rural health is in progress.

**Results:** Thematic analysis of the 20 completed interviews has been completed and analysis of the documents is ongoing. Preliminary results and emerging themes, as well as their implications to nursing practice, will be presented.

**Implications:** Health care professionals, including nurses, are reexamining how best to enhance access to care as our health care system transitions. Analyzing these factors and their relationships to each other may be useful to policymakers and practitioners who have long strived to improve rural access to care. Enhanced understanding of the factors influencing access to health care services in rural areas may contribute to nursing knowledge and policy solution development.

# HEALTH DISPARITIES

## Stroke Symptoms, Risk Factors and Acculturation among Cambodian Americans

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**Background:** Foreign-born Asian Americans are the fastest growing minority group in America, and it is projected the US Asian population will grow to 37.6 million by 2050. Cambodians are among the fastest-growing Asian subpopulations (Cox, 2015). Yet, little is known about stroke incidence in Cambodians in the United States. One study conducted on Cambodian refugees living in Long Beach found this population scored worse on key health indicators than other Asian immigrants with similar sociodemographic factors. The rate of Cambodian refugees considered their own health as fair or poor is 89%, which is four times higher than the rate of general California population and is twice as high as other groups of Asian immigrants. Previous studies also confirmed Cambodian-American death rate from stroke was more than double the general population's (Wong, et al., 2011; Long, 2014). This number is correlated with Cambodian-American poor scores of health management measurements. It is suggested that a blend of cultural and health belief practices made it difficult for Cambodian immigrants to recognize signs and symptoms of stroke or stroke effects. Thus, many of these Cambodian Americans are reluctant to visit health care providers for health issues.

**Purpose/Objectives:** The purpose of this quantitative study was to: 1). Describe and examine the relationships between demographics data and acculturation level; 2) Examine the relationships between demographic data and knowledge of stroke symptom and risk factors recognition; 3) Explore the shared beliefs, values, practices, language, norms, and rituals surrounding stroke in Cambodian community using a small qualitative component with a small subset of participants. This study utilized Stroke Recognition Questionnaire (SRQ) and Suinn-Lew's Asian Self-Identification Acculturation Scale (SL-ASIA) survey tools in the Cambodian immigrants living in Southern California.

**Methodology:** A purposive, convenient sample of self-identify Cambodian Americans who are 18 years or older who residing in California. These participants were recruited at religious Buddhist gatherings and temples. Eligible participants who agreed to participate were consented and answers questions to SRQ and SL-ASIA surveys. A descriptive correlational design and multivariate regression were used to explore and examine knowledge of stroke, risk factors, and acculturation.

**Results:** The results of this study revealed that Cambodian participants' mean age was 46.07 (SD= ±17.51), average years of education were 8.95 (SD=±5.26) and the mean number of people in each household was 4.65 (SD= ±2.13). These participants gravitated toward Cambodian culture and tradition rather than American with a mean acculturation (SL-ASIA) score of 2.3 (SD= ± .73). Cambodian immigrants were able to recognize a majority of stroke symptoms (SRQ) mean score (M=6.45, SD=±3.45) and stroke risk factors (M= 6.01, SD=±3.16). Participants' self-identified own mean stroke risk was 4.61 (SD= ±2.86), and they perceived themselves somewhat sure about stroke symptom recognition in another person (M=2.58, SD=±1.39).

**Implications:** This study revealed different results than other previous studies. Even though Cambodian American in Southern California considered themselves as less Americanized, they are knowledgeable about stroke symptoms. However, they are less likely to seek helps or treatments for this detrimental health condition.

# HEALTH DISPARITIES

## Prostate Cancer Knowledge and Intention to Screen in Omani Men

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**Purpose:** The main aim of this study was to explore Omani men's knowledge, intention to screen for PCa and perceived barriers to Pca screening.

**Background:** Worldwide PCa is the 2<sup>nd</sup> commonest cancer among men and accounts for 15% of all cancers diagnosed in men. Prostate cancer (PCa) is increasingly affecting men in both developing and developed countries.

**Methods:** A descriptive design was used to collect data from community dwelling Omani men. An interview questionnaire measuring PCa knowledge, prostate symptoms, intention to screen and perceived barriers was used. The participants (N=129) were Omani men above the age of 40 years recruited from barbershops. A total of 40 barbershops were purposefully selected two cities of Oman.

**Results:** The participants' mean age and international prostate symptom score was  $55.6 \pm 11.8$  years and  $8.31 \pm 3.34$ , respectively. The majority had mild prostate symptoms (60.5%) and the others had moderate (28.7%) or severe symptoms (10.9%). Most participants were satisfied (53.6%) with the quality of life (QOL) associated with the symptoms, but a large number (46.6%) were also dissatisfied or unhappy about their QOL. The majority of participants (65.1%) had low PCa knowledge. The mean knowledge score was  $3.95 \pm 1.55$ . Only 34.9% had high PCa knowledge levels. PCa knowledge was associated with level of education (OR = 1.91,  $p = 0.000$ ), marital status (OR= 2.46,  $p = 0.039$ ), severity of urinary frequency (OR = 1.50,  $p = 0.014$ ) and beliefs that digital rectal examination (DRE) is embarrassing (OR = 0.37,  $p = 0.021$ ). The most highly rated barriers to PCa screening were: fear of finding out something wrong after screening (48.1%); not knowing what will be done during screening (54.3%); belief that PCa is not a serious disease (55.8%); and belief that DRE is embarrassing (56.6%). Despite the presence of moderate to severe prostate symptoms (40%), the majority of participants had low to moderate intention to screen using DRE (76%) and prostate specific antigen test (PSA) (69.8%). The mean level of intention to screen using both DRE and PSA was 15.4 and 16.4, respectively. The determinants of intention to screen using DRE were perceived threat of the disease ( $\beta = 0.27$ ,  $p = 0.006$ ) and having been informed by a doctor that one has any disease of the prostate gland ( $\beta = 0.20$ ,  $p = 0.017$ ). The determinants of intention to screen using PSA were: perceived threat of the disease ( $\beta = 0.22$ ,  $p = 0.025$ ); having been informed by a doctor that one has any disease of the prostate gland ( $\beta = 0.20$ ,  $p = 0.017$ ); and perceived general health ( $\beta = 0.16$ ,  $p = 0.047$ ).

**Implications:** A large number of men had moderate to severe prostate symptoms, but low knowledge and intention to undergo PCa screening. This could contribute to late diagnosis of PCa. The major barriers that curtail intention to screen for PCa are low knowledge, healthcare facilities hours, beliefs about screening procedures, and fear of cancer. The results show the factors that need to be addressed to enhance compliance with PCa screening and early diagnosis in men.

**Key words:** Prostate cancer, Omani, Cancer screening; Early Diagnosis; Knowledge

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# HEALTH DISPARITIES

## Chinese Nurses' Emotional Expressions and Reshaped Values When Caring for Dying People

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**Purpose:** To describe the emotional expressions of clinical nurses who had cared for dying patients in hospitals, and explore how these experiences influence their professional values, health belief and life view.

**Rationale/Background:** The emotional expressions of dying patients and their caregivers have been documented, however, there is a scarcity of research describing clinical nurses' emotional expressions when providing care for dying patients, especially in nursing schools in China lack systematic death education and most hospitals do not provide palliative care. Information is needed about those nurses' emotional expression and the impacts of these kinds of emotional experiences on nurses' values towards the nursing profession, health and life.

**Methods:** A grounded theory approach was adopted to conduct semi-structured interviews with 13 nurses who had experiences providing care for dying patients in three university affiliated Grade A hospitals (comprehensive hospitals) from September 2015 to January 2016. A purposive sampling method was used to maximum the diversity of nurses (e.g., demographic characteristics, years and place of employment). Theoretical sampling method was used when developing concepts and exploring the relationships between them. The audio-recorded interviews were conducted by the researcher in a private room of the hospitals after obtaining informed consent. Data were transcribed immediately after the interviews and analyzed using open coding, axial coding and constantly comparative analysis with the assistance of software NVivo 11.0.

**Results:** The core category of this study emerged as "reshaping values", which meant that the consequences of the experiences of caring for dying patients in hospitals who were not on palliative care could be double-edged, based on how they reshaped their values toward the nursing profession, health belief and life view. The emotional expressions of clinical nurses caring for dying patients could be negative, such as feeling sad, helpless, and fearful because of the traditional ghost belief. Thus, nurses might leave nursing due to the psychological struggling of facing death and lack of emotional support. Positive emotions included feeling calm, regretless and a sense of commitment, and belief that they could improve their practice. Regardless of the emotional expressions, they had a greater appreciation for health and life, and they believed that health was the most important thing in life. Some started to think about the meaning of life and considered that life was short, needing high quality, and especially requiring palliative care during dying. Some factors influenced the process of reshaping the values, such as demographic characteristics, education about dying, coping strategies, emotional support and structural support.

**Conclusions/Implications:** The emotional expressions of clinical nurses caring for dying patients may be positive or negative, which contributes to reshaping their values towards the nursing profession, health belief and life view. Having more working experience, receiving education about dying, receiving support from colleagues and families may help nurses develop positive nursing professional values. Hospital managers and nursing department should pay attention to the nurses' psychological development and provide them with education about dying, structural support and emotional support, in order to help them develop their professional careers.

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# HEALTH DISPARITIES

## Understanding the Opportunities and Barriers for Refugee Youth in the United States

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**Purpose:** The aim of this study was to gain an understanding of the opportunities and challenges specific to refugee youth from Eastern Africa around the transition from adolescence to young adulthood in the United States.

**Background:** Refugees typically traverse several cultures in their journey to a host country. They face many challenges in their new communities including navigating complex educational, health and judicial systems, learning a new language and seeking employment. Refugee youth not only face the normal developmental tasks of youth but are also challenged by the need to navigate two cultures, loss of community and separation from family. Many also experience interrupted schooling and thus face the simultaneous tasks of education and work (Bridging Refugee Youth and Children's Services, 2016).

**Methods:** A descriptive phenomenological approach guided the investigation. IRB approval was obtained prior to conducting the study. Informants participated in semi-structured interviews that were audio recorded and transcribed verbatim for analysis. Data were analyzed using the Swanson-Kauffman & Schonwald (1988) method consisting of bracketing, analyzing, intuiting and describing to produce an understanding of the phenomenon under investigation. In appreciation for their participation, informants were given a \$25 gift certificate.

**Results:** Sixteen informants (six men and ten women) ranging in age from 18 to 25 participated in the interviews. An overarching theme of gratitude permeated the experiences of the participants. The narratives further revealed the following themes: gratitude for parental sacrifices, using their religion as a moral compass, feeling pride in the culture of origin, and appreciation for the opportunities in the U.S. Challenges included learning to navigate cultural differences, the difficulty of forming close friendships with youth outside of their own cultural group and traversing the American educational system.

**Implications:** Given that we live in an increasingly diverse society, youth from the dominant culture need to be encouraged to recognize when their culture is being normalized to the detriment of all people. There is also a need to develop services for refugee youth to transition to college.

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**Funding:** Seattle University College of Nursing Seed Grant Funding.

# HEALTH DISPARITIES

## Socio-Demographic Factors and Postpartum Depression among Rural Hispanic Women

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*California State University,*

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**Purpose of the Study:** The purpose of this study is to determine the significant socio-demographic factors that influence rural Hispanic women at risk for postpartum depression. The specific aims are to (1) examine associations between socio-demographic factors (maternal age, infant gender, marital status, education, annual household income, job, delivery type, number of children, and religion) and women's depressive symptoms during the postpartum period, and (2) find predictors that contribute to the increase risk for postpartum depression among Hispanic women in rural areas.

**Background:** Postpartum depression is a universal experience among women regardless of countries or culture. The prevalence of postpartum depression varies across racial and ethnic groups. Socio-demographic factors such as age, gender, race, ethnicity, language, education, income or socioeconomic status (SES) can significantly affect an individual's health. Studies have reported that socio-demographic data were critical factors in the development of women's depressive symptoms during the antenatal and postpartum period

**Methods:** This study was a descriptive cross-sectional design. A convenience sample of 223 postpartum Hispanic women ranging in age from 18 to 47 years old with babies younger than 12 months old participated in the study. Women with medical diagnosis or treatments for mental health issues were excluded. An-administered survey questionnaire was used. The Edinburgh Postnatal Depression Scale (EPDS) was used to screen women at risk for postpartum depression. Chi-square test was performed to determine the relationship between the socio-demographic factors and the EPDS scores. Multiple logistic regression was performed to determine the significant predictors for postpartum depression.

**Results:** The average age of the 223 participated Hispanic women was 28.49, SD = 6.01. Chi-square statistical test showed a significance in EPDS scores among demographic characteristics such as education level, delivery type, job condition, and number of children,  $p < .05$ . Multiple logistic regression analysis showed that four of the predictors were significantly related to the likelihood of having postpartum depression: delivery type (Wald = 5.30, OR = 0.51,  $p = .021$ ); number of children (Wald = 5.65, OR = .41,  $p = .017$ ); education levels (Wald = 4.04, OR = 2.38,  $p = .044$ ), and job condition (Wald = 4.05, OR = 1.86,  $p = .044$ ).

**Implications:** The study findings can provide health care professionals with a better understanding in the development of preventive health care measures for women with depressive symptoms during the postpartum period and early case finding. Such empirical data will enhance the development of effective and efficient health policy or interventions for women at risk for postpartum depression and in particular, the Hispanic women in rural areas.

# HEALTH DISPARITIES

## Developing Theoretical Framework to Reduce Cancer Stigma in a Native American Context

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**Purposes/Aims:** To examine existing models and frameworks of health-related stigma and to develop a theoretical framework in order to reduce cancer stigma within the context of a resource-scarce Native American reservation.

**Definition of Concept to be Discussed:** In a 2001 review, Link and Phelan state that stigma exists “when elements of labeling, stereotyping, separation, status loss, and discrimination occur together in a power situation that allows them”(p. 377).

**Concept Analysis Approach or Process Used:** Nuopponen suggests using a systemic concept analysis approach, being expanded from a terminology analysis method. Her approach fits this project since stigma is a relatively new concept to nursing compared with studies in sociology, psychology, and anthropology. First, classic literature and accumulated studies associated with health-related stigma were selected using google scholars and examined to understand stigma complexity to describe domains, dimensions, and components of stigma. Secondly, models with visual figures, particularly concerning cancer stigma were selected and scrutinized. Thirdly, studies associated with stigma and Native Americans were examined to frame a context. Finally, selected models were incorporated into a framework development, and identified theoretical bases explained how they connected with the developed framework.

**Logic Linking the Stigma Concept to Nursing Practice or Research Problem:** The majority of the conceptual models of stigma support a modified labeling theory, which was one of 11 theories identified during the process. According to this theory, a stigmatized person constructs their self-concept over time through social interactions and a self-stereotyped identity that, over time, adversely affects their health physically (e.g., stress response), emotionally (fear, guilt, shame), and psychosocially (anxiety, depression, lower self-esteem) and influences their behavior. As a result, those who are stigmatized tend to hide the stigma and do not seek help; social isolation and discrimination are outcomes. In reality, the stigma of a cancer diagnosis delays the tribal members in (1) accessing health care services for early detection and treatment in a timely manner and (2) receiving support from others on the reservation.

**Conclusions:** The most comprehensive stigma framework, named Framework Integrating Normative Influences on Stigma, created a foundation for the developed framework. It includes perspectives from both individual and community levels and embraces the concept of cancer stigma within a Native American context. Myths that (1) cancer is contagious and (2) cancer means a death sentence should be eliminated in this 21st century. When researchers and Native American communities connect with mutual trust and work together, this conceptual framework may be able to serve as a foundation to develop culturally sensitive interventions to help reduce cancer stigma and increase the life quality of cancer patients and their families.

## Abstracts of Poster Presentations

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### **I-CAN: A NEW EDUCATION MODEL FOR ADDRESSING HEALTH DISPARITIES**

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#### INTERPROFESSIONAL CARE ACCESS NETWORK (I-CAN): OVERVIEW

*Peggy Wros*

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#### I-CAN: A NEW EDUCATION MODEL FOR ADDRESSING HEALTH DISPARITIES

*Peggy Wros, Launa Rae Mathews, Katherine Bradley, Heather Voss, Nicholas Bookman*

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#### THE IMPACT OF FACULTY PRACTICE IN THE COMMUNITY

*Heather Voss, Peggy Wros, Katherine Bradley, Daidre Azueta*

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#### STUDENT LEARNING: CARE COORDINATION TO POPULATION HEALTH OUTCOMES AND SYSTEMS CHANGE

*Kristen Beiers-Jones, Launa Rae Mathews*

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#### I-CAN EVALUATION OF CLIENT OUTCOMES

*Katherine Bradley, Peggy Wros, Nicholas Bookman,  
Launa Rae Mathews, Heather Voss, Tanya Ostrogorsky, Chari Smith*

# I-CAN: A NEW EDUCATION MODEL FOR ADDRESSING HEALTH DISPARITIES

## Interprofessional Care Access Network (I-CAN): Overview

*Peggy Wros, PhD, RN  
School of Nursing  
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Portland, OR*

**Purpose:** The *Interprofessional Care Access Network (I-CAN)* is an innovative interprofessional clinical health care delivery and education model that addresses health outcomes, patient satisfaction, and cost of care for disadvantaged clients and populations in underserved neighborhoods. This symposium will present an overview of the I-CAN project as it was piloted, implemented and expanded across 5 communities in urban neighborhoods and rural communities in Oregon. I-CAN has demonstrated that student teams, under the supervision of a nursing Faculty in Residence, can engage with community partners to address social determinants of health and barriers to health care for individuals and local population health issues.

The first paper presents an overview of I-CAN describing the essential components of this academic-practice model, the neighborhoods, community partners, and engagement of interprofessional students teams with clients. Through care coordination, clients are supported to become self-sufficient and address issues that have been obstacles to successfully managing their health.

The second paper presents two case studies demonstrating how I-CAN provides student learning that influences system level changes to improve the health in vulnerable populations through collaboration with community partners.

The third paper presents the community impact of the faculty-in-residence practice model based on interviews with partners and nursing faculty and their lived experience.

The final paper presents a summary of client outcomes from the first three years of the program evaluation. A mixed methods design has demonstrated the impact on the experience of care, cost of care and population health outcomes.

**Summary:** This symposium presents to the nursing community a replicable academic-practice model that creates providing new roles for students and faculty, engages community partners, and demonstrates that interventions focused on care coordination and social determinants of health can improve the health of vulnerable clients, families, and populations.

# I-CAN: A NEW EDUCATION MODEL FOR ADDRESSING HEALTH DISPARITIES

## I-CAN: A New Education Model for Addressing Health Disparities

*Peggy Wros, PhD, RN, Senior Associate Dean, Student Affairs/Diversity<sup>1</sup>*

*Launa Rae Mathews, MS, RN, COHN, Clinical Assistant Professor<sup>1</sup>*

*Katherine Bradley, PhD, RN, Interim Associate Dean for Practice<sup>1,2</sup>*

*Heather Voss, MSN, RN, Clinical Assistant Professor<sup>1</sup>*

*Nicholas Bookman, MPH, Evaluation Coordinator<sup>1</sup>*

<sup>1</sup>*School of Nursing, Oregon Health & Science University, Portland, OR*

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**Purpose/Aims:** The Interprofessional Care Access Network (I-CAN) is an innovative nurse-led model for healthcare delivery and interprofessional education addressing the Triple Aim for vulnerable populations in urban neighborhoods and rural communities in Oregon. The purpose is to establish an evidence-based model of care delivery demonstrating the impact of interventions focusing on social determinants of health (SDH). Specific aims: 1. Develop collaborative interprofessional practice and education partnerships serving the needs of neighborhood/community populations and providing local access to health care. 2. Improve health outcomes and satisfaction for disadvantaged and underserved clients, families, and communities. 3. Build capacity among health care providers and students for leading interprofessional teams in providing high quality, patient centered, and culturally effective health care.

**Background:** In spite of progress in health reform, national experts indicate that there continues to be a failure of healthcare professionals working collaboratively in the community to address social determinants of health (SDH)—root causes of illness and health disparities. In order to address these root causes, the scope of health and health care must be expanded to include SDH and integrated into training and socialization of new healthcare professionals. Another integral aspect of health reform includes national initiatives to develop and test models of interprofessional collaborative practice and education and evaluate the impact on health and health systems. National efforts have focused on classroom, case study, and simulation approaches, but there are very few examples of robust interprofessional education for students in clinical practice—particularly in the community.

**Description:** I-CAN aligns healthcare delivery, community services, and interprofessional academic programs by coordinating care through neighborhood collaboratives. Community partners refer complex clients with social and health issues to a nurse faculty-in-residence (FIR). The FIR obtains client consent and huddles with students to plan home visits. Student teams complete an intake focused on lifestyle, health behaviors, and SDH, and collaborate with the client and community partner to develop a list of goals and prioritized plan. The FIR and students visit clients weekly to coordinate care and work on issues preventing clients from managing their health. Interventions focus on SDH-related barriers, health navigation, health literacy, and self-sufficiency. The client is directly connected to resources within the local community. Referring community partners huddle weekly with the FIR and students to review and update plans, and each neighborhood collaborative meets quarterly to discuss client progress and identify population health issues.

**Outcomes:** I-CAN has been implemented in five urban neighborhoods and rural communities in Oregon. Outcomes demonstrate reduced EMS and ED visits, and hospitalizations, resulting in cost savings. Clients also improve access to primary care, health insurance, and housing. Academic and community partners and express a high level of satisfaction with the program, and recommend continued statewide expansion.

**Conclusions:** I-CAN is scalable, replicable, and sustainable as a model for health care delivery that focuses on SDH. Interventions improve triple aim outcomes and educate health professionals committed to population health practice.

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**Funding:** I-CAN was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) grant number UD7HP25057.

# I-CAN: A NEW EDUCATION MODEL FOR ADDRESSING HEALTH DISPARITIES

## The Impact of Faculty Practice in the Community

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*Daidre Azueta  
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**Purpose:** The purpose of this presentation is to examine undergraduate faculty practice roles and impacts in community based settings.

**Background:** Undergraduate nursing faculty are underrepresented in faculty practice models. The Interprofessional Care Access Network (I-CAN) provides opportunities for nursing undergraduate faculty who specialize in community and population health to participate as a “faculty in residence” with community based organizations and interprofessional student teams. The “faculty in residence” supervises students in care coordination to address social determinants of health; enhance organizational capacity to deliver health and related services, and develop interprofessional competencies in future health professions students.

**Brief Description of Undertaking:** Interviews from eight agency partners who work closely with I-CAN faculty and students were conducted to better understand the impact of faculty practice on clients, agencies and communities. Four nursing faculty who served in faculty practice roles were interviewed to gain insight into their perspectives of impact on clients, agencies, community, and students with whom they worked. Thirty minute interviews were conducted in person or by phone by an I-CAN evaluation team member. Responses were reviewed summarized and central themes identified.

**Outcomes:** I-CAN partners reported the overwhelming positive impact of the I-CAN program at the community, client and agency level addressing social determinants of health and navigating barriers to healthcare for complex clients with multiple co-morbidities, socioeconomic barriers, and chronic illnesses. Students supervised by the nursing faculty in residence provided critical resources, time, and help with navigating the healthcare system, and insight about the challenges and progress clients were making. Themes derived from the faculty perspectives on their practice role and the impact they and the students had in their communities were consistent with those from the I-CAN partners. In addition, the faculty provided insight into their role and the impact the I-CAN project had on nursing and interprofessional students.

**Conclusions:** Interviews confirmed the value of undergraduate faculty practice as a resource to community agencies engaged with complicated clients requiring multiple resources to navigate social and health care systems. Students and nursing faculty extend the reach of the agency, providing insights to the clients lived experience, establishing a trusted relationship as an advocate, and addressing system barriers while preparing future nursing and health profession students for emerging health care delivery models. I-CAN provides a much needed undergraduate faculty practice model for clinical education in community based settings.

**Funding:** This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number UD7HP25057.

# I-CAN: A NEW EDUCATION MODEL FOR ADDRESSING HEALTH DISPARITIES

## Student Learning: Care Coordination to Population Health Outcomes and Systems Change

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**Purpose:** Interprofessional student teams participating in the Interprofessional Care Access Network (I-CAN) learn to move beyond individual care coordination/case management to focus on populations, with the goal of effecting policy and system changes. Aims include: advocacy for changes to improve the health and well-being of vulnerable populations; fostering partnerships that implement sustainable changes; increasing the capacity of communities to lead initiatives improving the health of their neighborhoods; and preparing a healthcare workforce to address upstream solutions to improve health outcomes.

**Rationale:** Health professions students need to develop the skills and judgment to care for individuals as well as families and communities. In I-CAN, they learn to assess for gaps in systems that undermine the health of populations and increase health inequities. They plan and implement systemic changes through partnerships with social organizations, local agencies, advocacy groups and community leaders. I-CAN teaches the skills needed to zoom out from individuals to populations to effect change and organize for social justice.

**Description:** Under the supervision of a nursing Faculty in Residence (FIR) nursing students in their Population Health Clinical rotation manage a caseload of clients referred from health centers and social service agencies. Students visit clients in their homes weekly and address individual health concerns with a particular focus on the impact of social determinants of health. During the visits, students are taught to notice patterns and themes negatively impacting multiple families. In collaboration with community partners, these assessments are used to choose a population health issue, creating an initiative that continues to be developed by student teams over multiple academic terms. Two case studies will be presented. 1) Students working within the refugee population noticed many families had insurance lapses despite being eligible for insurance. The students discovered renewal notices came in the mail, written in English and that the families no longer had insurance because they could not read their mail. The students consulted with refugee advocates, legal aid attorneys, and health providers. This led to being invited to collaborate with the state Health Authority to develop system changes. 2) Student teams identified an increasing population of transgender refugees/immigrants and discovered they were underserved by local health clinics. Researching best practices and partnering with local LGBTQI advocacy groups, the students created a series of proposals to improve the health care for this vulnerable population.

**Outcomes:** Nursing students learned population health skills and helped advance system changes positively impacting the refugee/immigrant communities they are serving. The Health Authority is changing the insurance renewal system for non-English speakers, and recommendations for more inclusive signage, staff development and a better referral systems are being considered by county clinics for transgender clients. The FIR, nursing students, and two advocacy groups presented these initiatives at the annual state Public Health Association 2016 conference.

**Conclusion:** The I-CAN model succeeds in organizing academic and community partners to make changes that impact vulnerable communities, while educating nursing students to work interprofessionally on upstream population health problem solving.

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**Funding:** This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number UD7HP25057.



# I-CAN: A NEW EDUCATION MODEL FOR ADDRESSING HEALTH DISPARITIES

## I-CAN Evaluation of Client Outcomes

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**Purpose:** The Triple Aim has challenged health care to find innovative and effective ways to improve cost, satisfaction, and population health outcomes. The Interprofessional Care Access Network (I-CAN) is a community based academic practice model, led by nursing faculty, in which interprofessional student teams provide care coordination for clients in low resource communities. These non-traditional teams engage clients with complex health needs and address barriers related to social determinants of health, coordinating access to community resources, enhancing integrated healthcare experiences, while reducing costs of care.

**Rationale:** Vulnerable communities have individuals with chaotic lives, poor health and low health literacy; receiving episodic, uncoordinated and ineffective health care when their social determinants are overlooked. The cost of health care for these individuals is disproportionately high because of lack of preventive care, high incidence of multiple chronic illnesses, and the use of emergency medical services and the emergency department for non-urgent care. I-CAN was developed to demonstrate this academic practice model with community partners, can improve health outcomes and cost of care for underserved clients and families.

**Methods:** A qualitative-quantitative mixed methods design assessed client health and social needs, health care utilization and cost savings across 3 years and three neighborhoods. Client data were collected at intake, on each visit, and reassessed after 12 visits. Student SOAP notes were extracted and analyzed using Dedoose software. A coding scheme was developed deductively based on themes emerging in case notes and stakeholder interviews. The analysis used qualitative descriptive to explore similarities and differences across I-CAN sites and assessed the intervention impact of the student teams on client outcomes and social determinants of health.

**Outcomes:** In the first 3 years, I-CAN served 138 clients in two urban neighborhoods and one rural community. On entry into the program, 37% of clients lacked a primary care home, 23% lacked stable housing, 20% lacked health insurance and over a third reported high health care utilization. Major health needs were chronic illness and chronic pain. Predominant social needs were medication management, housing, addiction, personal hygiene and safety. Clients who received 12 or more visits, reported substantial reductions in emergency department visits, calls for emergency medical services and hospitalizations resulting in cost savings. Emergent themes identified improved access to health insurance and primary care and stabilized housing.

**Conclusions:** I-CAN represents a unique opportunity to expand students and faculty in a new role with community partners, addressing healthcare needs and social determinants of health, improving cost and client health outcomes.

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**Funding:** This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number UD7HP25057.

**Abstracts of Poster Presentations**

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**INSTRUMENT AND MODEL DEVELOPMENT  
IN PALLIATIVE CARE**

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**PSYCHOMETRIC EVALUATION OF A PALLIATIVE  
CARE PARENTAL SELF-EFFICACY MEASURE**

*Eileen K. Fry-Bowers, Kathleen Adlard*

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**USING A DYSPNEA ASSESSMENT TOOL  
TO IMPROVE CARE AT THE END OF LIFE**

*Lorri Birkholz, Tina Haney*

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**IMPLEMENTATION OF A SYMPTOM ASSESSMENT TOOL  
INTO HOME BASED OUTPATIENT PALLIATIVE CARE**

*Briana Rotter*

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**CREATING A PALLIATIVE CARE REFERRAL TO IMPROVE  
QUALITY OF LIFE IN HEART FAILURE PATIENTS**

*Johnny Garcia, Joseph F. Burkard, Caroline Etland*

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**AN INNOVATIVE ADVANCE CARE PLANNING MODEL:  
CONCEPT ANALYSIS AND META-SYNTHESIS**

*Yuki Asakura*

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**PREPAREDNESS ASSESSMENT FOR THE TRANSITION  
HOME AFTER STROKE INSTRUMENT DEVELOPMENT**

*Michelle Camicia, Barbara J. Lutz, Jill G. Joseph,  
Katherine K. Kim, Theresa Harvath*

# INSTRUMENT AND MODEL DEVELOPMENT IN PALLIATIVE CARE

## Psychometric Evaluation of a Palliative Care Parental Self-Efficacy Measure

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**Purpose:** This pilot study will evaluate the psychometric properties of a new *Palliative Care Parental Self-Efficacy Measure (PCPEM)* for use with English- and Spanish-speaking parents of children with complex medical conditions.

**Background:** Children with medical complexity (CMC), especially those who have a congenital or acquired multisystem disease, a severe neurologic condition with marked functional impairment, technology dependencies, or cancer/cancer survivors with ongoing disability, experience frequent and often lengthy hospitalizations. With advancements in medical and surgical pediatric care however, many CMC are living longer and, as a result, require integrative approaches to care, which can be met through the provision of palliative care. Timely and appropriate pediatric palliative care (PPC) can prevent or relieve the physical and emotional distress produced by a complex medical condition or its treatment, help patients and their families live as normally as possible, and provide them with accurate information and support in decision making.

Parental self-efficacy (PSE) can impact parental care taking, communication and decision-making skills. Within the context of PPC, higher levels of PSE have been associated with less caregiver strain and better parental management of pain in seriously ill children and adolescents nearing end of life. Importantly, investigation of the relationship between PSE and PPC is hampered by a lack of appropriate tools to measure PSE in this context.

Additionally, racial and ethnic disparities in access to, and quality of health care services received, are well documented. However, compared to other areas of health care, including disease prevention, early detection, and curative care, there is scant research in the area of health disparities and pediatric palliative or end-of-life care. The measurement of PSE within the context of PPC, especially among ethnic minority and underserved populations, can inform the development of appropriate supportive services for affected children and families.

**Method:** We will employ a cross-sectional design using survey methods and convenience sampling. Specifically, participants will be English- ( $n = 50$ ) and Spanish-speaking ( $n = 50$ ) parents or primary caregivers of CMC, age 1 – 21 years, receiving care for cancer or cancer related condition at a regional children's hospital cancer institute. Parents will be at least 18 years of age, free from cognitive impairment and willing to participate in the study. PSE will be measured using the *Palliative Care for Parental Self-Efficacy Measure (PCPEM)* in English or Spanish. Child and parent/primary caregiver sociodemographic characteristics will also be collected, as well as qualitative data regarding parental receptivity to use of tool.

**Results:** Analysis will include psychometric evaluation of the *PCPEM*, as well as regression analysis to examine relationships between the *PCPEM* and specific child and parent/primary caregiver sociodemographic characteristics.

**Implications:** The results of this pilot study will guide refinement of the *PCPEM* in preparation for evaluation of use with parents of CMC beyond those with childhood cancer. A validated and reliable tool will facilitate further investigation of PSE within the context of PPC and direct development of appropriate interventions to improve quality of life for this growing population and reduce health disparities.

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**Funding:** The Sence Foundation, Visalia, CA.

# INSTRUMENT AND MODEL DEVELOPMENT IN PALLIATIVE CARE

## Using a Dyspnea Assessment Tool to Improve Care at the End of Life

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**Problem:** Dyspnea at the end of life occurs in 15%-70% of patients. By definition, dyspnea is a sensation and a perception which can only be self-reported. Due to cognitive changes occurring before death, many patients may be unable to self-report dyspnea which requires nurses to accurately assess and initiate symptom management. Despite the high frequency of end-of-life dyspnea, there are relatively few operationalized measures in place to evaluate and treat dyspnea. The Respiratory Distress Observation Scale (RDOS) is a validated tool designed for healthcare providers to assess dyspnea in patients that cannot self-report. To date, no studies have been done using the RDOS in the end-of-life hospice population comparing the nursing assessment and management of dyspnea using experiential practice to practice after incorporating an evidence based tool for dyspnea.

**Purpose:** This study is evaluating nurses' assessment and treatment practices of end-of-life dyspnea following training in the use of the RDOS. The alleviation of distress and symptom management are primary objectives of hospice nurses and, in addition to patient suffering, the distress associated with end-of-life dyspnea can often leave families feeling guilty and angry which can result in an increased propensity for depression and other mood disturbances. Incorporating the RDOS into end-of-life care allows nurses to use a standardized assessment tool to evaluate and treat dyspnea.

**EBP Questions:** 1) Do palliative care nurses demonstrate differences in their assessment skills of end-of-life dyspnea in non-verbal patients following a structured training program on the use of the RDOS? 2) Do palliative care nurses demonstrate differences in their treatment selections of end-of-life dyspnea in non-verbal patients following a structured training program on the use of the RDOS? 3) Do palliative care nurses demonstrate a difference in their ability to assess degrees of dyspnea following a structured training program on the use of the RDOS? 4) Do the nurses that have been trained to use the RDOS report ease of use and satisfaction in the tool?

**Methods:** This is a pre-experimental pre/post-test intervention design. The target audience is registered nurses who provide end-of-life care. The educational program used a structured video format using Standardized Patient (SP) scenarios depicting differing degrees of dyspnea. Due to the ethical issues and dilemmas of conducting research using hospice patients, SPs were selected. Unlike simulation, using SPs allowed for ethnic diversity in the depicted scenarios. Scenarios included dyspnea levels of: none, mild, moderate, and severe. Analysis will be done using the paired t-test, the McNemar test, and the Wilcoxin T-test for within group analysis and descriptive statistics will describe the study sample and evaluation results.

**Outcomes:** It is expected that nurses will have improved dyspnea assessment skills and dyspnea symptom management after education on the RDOS.

**Significance:** This study may demonstrate applicability of the RDOS tool to the non-communicative patient at the end-of-life by enhancing nurses' dyspnea assessment and management to reduce patient distress and enhance quality end-of-life care.

# INSTRUMENT AND MODEL DEVELOPMENT IN PALLIATIVE CARE

## Implementation of a Symptom Assessment Tool into Home Based Outpatient Palliative Care

*Briana Rotter, DNP, APRN, FNP-C*  
*Instructor*  
*School of Nursing*  
*University of Portland*  
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**Purpose:** In the newly implemented palliative care program, no system existed to track symptoms and monitor outcomes in a meaningful way. The quality improvement project involved the implementation of a symptom assessment tool within a home based outpatient palliative care program. Project goals included improving symptoms in patients enrolled in the project, reducing hospitalizations, and reducing 30 day readmission rates.

### **Material & Methods:**

*Setting:* home based outpatient primary and palliative care program

*Subjects:* convenience sample of 39 home bound adults enrolled in palliative care program

*Time Frame:* four months

*Tool:* Edmonton Symptom Assessment System

*Method:* quality improvement science including fish bone diagram; plan, do, study, act methodology

*Intervention:* staff education, implementation of tool into EHR, ESAS administered by palliative care nurses, findings reported to primary care provider, symptom tracking

*Data Collection:* t-tests and descriptive statistics; chart reviews

**Results:** There was an improvement in 77% of the ESAS symptom categories including pain, tiredness, nausea, depression, anxiety, drowsiness, and appetite. Over 50% of patients enrolled had a primary diagnosis of some type of dementia. Before palliative care, hospital admissions were 4.2% per 100 patient months, and readmission rate was 15%. After program implementation, hospital admissions were 2.6%, and there were no readmissions.

**Conclusion:** The ESAS tool has been widely studied in the inpatient setting and with patients with cancer. However, there are limited studies on its effectiveness in the outpatient setting and in non-cancer patients. This quality improvement project suggests that the ESAS can be also be used in the outpatient setting. The nurses did however report that it was challenging to administer a 0-10 scale tool in patients with dementia. The palliative care team helped to reduce hospitalization and readmission rates.

**Nursing Implications:** This quality improvement project suggests that a tool can be utilized to track and assess symptoms when administered by nurses trained in how to use the tool. Nurses were a valuable member of the palliative care interdisciplinary team that helped to reduce hospital readmissions. Nurses should assist in the selection of valid and reliable tools that are implemented into the EHR. Nurses need to help develop ongoing research on best practices for assessing symptoms in patients with dementia. More research is also needed to validate tools for symptom assessment within outpatient home based primary and palliative care.

# INSTRUMENT AND MODEL DEVELOPMENT IN PALLIATIVE CARE

## Creating a Palliative Care Referral to Improve Quality of Life in Heart Failure Patients

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**Background:** A transitional care program was developed at a southern San Diego hospital to guide patients dealing with heart failure from an inpatient to an outpatient setting to decrease hospital readmissions. Although, very successful with a quarterly readmission average of 9%, patients that are considered end-stage heart failure categorized by ejection fraction less than 30% and have greater than one visit in a thirty day period do not qualify for transitional care. These patients' readmission rates average 50%. The literature shows that patients who will not significantly improve within six months would benefit from palliative and hospice care, thus a palliative care referral process was created by the education director to better capture patients that fall into the advanced heart failure category. Evidence indicates that palliative care supports the best possible quality of life in patients and families facing serious illness.

**Purpose:** The purpose of this evidence-based project is to utilize a palliative or hospice care referral process for end-stage heart failure patients that don't meet transitional care criteria in an attempt to improve quality of life evidenced by QOLI questionnaire.

**Method:** Members of the transitional and palliative care team will send a list of de-identified patients using only financial numbers via Microsoft outlook to the DNP student; he will then access the patient's chart and ask if they are willing to participate in a two part questionnaire. A convenience sample of 20 patients with a primary or secondary heart failure diagnoses discharged from a suburban southern San Diego, California, hospital that did not meet transitional care criteria where presented with a Ferrans and Powers Quality of Life Index (QOLI) cardiac version. The first questionnaire will be presented during their hospitalization or within five days of discharge and the second will be presented at thirty days after discharge.

**Results:** Utilizing the Ferrans and Powers Quality Index tool the DNP student with take both surveys an assess for increase/decrease in QOL for patients that received transitional care.

**Implications for Practice:** The information gathered from this project can be utilized by physicians and nurse practitioners practicing at an inpatient hospital setting to help assess a patient's needs, illness management, and quality of life related to heart failure. Utilizing the new referral process has potential to influence patient's self-management, improve social support, and ultimately improve quality of life in patients with end-stage heart failure.

# INSTRUMENT AND MODEL DEVELOPMENT IN PALLIATIVE CARE

## An Innovative Advance Care Planning Model: Concept Analysis and Meta-Synthesis

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**Background:** Patient's right to make decisions is one of the most important considerations in current health care. Honoring one's wishes even when they are not able to express their wishes is a major challenge while providing healthcare. In order to have better understanding of a person's wishes, understanding a concept of ACP is significantly important. Advance care planning (ACP) is a process of developing a person's preference and wishes to communicate health care providers (HCP) in the event that they are unable to make a decision for themselves. Current literature demonstrates that ACP has been often interpreted as "writing an advance directive (AD)". However, the concept of ACP is much broader than just writing an AD. A concept of ACP is not well understood, and developing a comprehensive model of ACP is necessary.

**Purpose:** The purpose of this study was to develop a comprehensive model of ACP based on a concept analysis and meta-synthesis of current knowledge.

**Research Design:** Concept analysis and meta-synthesis was utilized to develop this model. Extensive evidence review was conducted prior to this concept analysis. Walker and Avant method of concept analysis was used in this analysis.

**Results:** Exhaustive literature review revealed ACP is treated as an act of writing an AD in most of articles although ACP is discussed as a process. This confusion is caused by a lack of rigor conceptual framework. Through this concept analysis, this author was able to make a distinction between ACP as an Event Model and Process Model. The Event model is a HCP centered and AD-writing focused model whereas the Process Model of ACP enables HCP to understand the relationship between a real client/patient's life experience and formulation of ACP. The Process Model also depicts the continuous and dynamic formulation of ACP and how HCP can assist this process. This Process Model promotes a client-centered approach to ACP by resolving misperceptions of ACP and inappropriate/ineffective interventions to support ACP.

**Conclusion:** This client-centered model of ACP provides a comprehensive understanding of ACP in relation to a person's life experiences. The Event Model of ACP assists HCP to comprehend the fact that the previous interpretation of ACP was HCP-centered and explains why many interventions to promote ACP have failed. The Process Model is useful for HCP to understand the relationship with patient's experience, and assist them determining appropriate and tailored interventions to support ACP. This model also serves to organize the body of current knowledge and clarify the knowledge gaps, which would inform future directions of study and interventions.

# INSTRUMENT AND MODEL DEVELOPMENT IN PALLIATIVE CARE

## Preparedness Assessment for the Transition Home after Stroke Instrument Development

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*Jill G. Joseph, MD, PhD, MPH<sup>1</sup>*

*Barbara J. Lutz, PhD, RN, CRRN, APHN-BC, FAHA, FNAP, FAAN<sup>3</sup>*

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**Purpose/Aims:** The purpose of this study is to develop the Preparedness Assessment for the Transition Home after Stroke (PATH-s) instrument based on psychometric theory and principles of instrument development.

**Rationale/Conceptual Basis/Background:** Care transitions for individuals with disabling conditions, such as stroke, are often ineffective and inefficient, resulting in unmet patient and caregiver (CG) needs, increased safety risks, high rates of preventable readmissions, and increased health care costs. This is particularly problematic for stroke survivors (SS) transitioning from an institutional setting to home. There is no assessment instrument specifically designed to evaluate a family member's commitment and capacity to assume the caregiving role following a SS discharge from an institutional setting. This is critically needed to facilitate the development of tailored care plans and interventions to mitigate risks associated with the crisis of stroke and the associated health effects on the CG and SS. Instruments developed from qualitative research provide rich data about complex phenomena. The Preparedness for the Transition Home after Stroke (PATH-s) instrument was developed based on the foundational qualitative research and resultant conceptual framework of B. Lutz.

**Methods:** Following the initial development of the instrument with input from 8 experts for content validity, a cross-sectional study with 2 distinct groups of CGs for SS with moderate to severe disability following stroke was conducted to establish the psychometric properties of the PATH-s instrument using a convenience sample of 70 SS stroke family caregivers (CGs) during an inpatient rehabilitation facility (IRF) admission. Data collection from CGs at IRF admission was conducted to determine the optimal format (Likert versus descriptive responses), to optimize clarity and further refine the items in the PATH-s instrument using this input in addition to experts, and to determine the quality of the items.

**Results:** The PATH-s was developed from qualitative research using a structured procedure for development, including input from experts to establish content validity. Cognitive interviewing was used to identify the format of the instrument, and further to establish the relevance, reliability and clarity of the instrument from participants' responses to the items in the target population. This resulted in this 14-item self-administered instrument. The development and psychometric evaluation of validity and reliability of the PATH-s will be described.

**Implications:** Maintaining the voice of the participant in the instrument development process supports family and consumer-focused research. This novel instrument can support a primary prevention strategy to identify gaps in preparedness for stroke survivor-caregiver dyads following the complex transition from IRF to home, with the long-range goal to mitigate the effects of suboptimal preparation and the associated adverse effects associated with this transition on the health of CGs and SSs. Once gaps are identified, care plans can be tailored to address gaps and better prepare caregivers for the transition home. This optimized approach to transitions management through the use of an instrument such as the PATH-s developed from qualitative research will address the National Quality Strategy "Triple Aim" to improve quality of care, improve health, and reduce costs for the care delivery system.

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**Funding:** The Betty Irene Moore School of Nursing, University of California-Davis and the Rehabilitation Nursing Foundation.





**Abstracts of Poster Presentations**

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**AN INTERPROFESSIONAL GRADUATE  
CERTIFICATE IN PALLIATIVE CARE:  
DEVELOPMENT AND IMPLEMENTATIONS**

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A GRADUATE CERTIFICATE IN PALLIATIVE  
CARE: DEVELOPMENT AND IMPLEMENTATION

*Ardith Doorenbos, Heather Coats, Tia Pagenelli*

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A COMMUNITY NEEDS ASSESSMENT OF  
INTERPROFESSIONAL PALLIATIVE CARE TRAINING

*Heather Coats, Tia Paganelli, Ardith Doorenbos*

# AN INTERPROFESSIONAL GRADUATE CERTIFICATE IN PALLIATIVE CARE: DEVELOPMENT AND IMPLEMENTATIONS

## A Graduate Certificate in Palliative Care: Development and Implementation

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*Tia Pagenelli, BSN, MPH*

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*Seattle, WA*

**Purpose:** To describe a multi-phase development and implementation of an interprofessional graduate certificate in palliative care and to identify lessons learned along the process.

**Background:** One of the tenets of the National Consensus Project for Quality Palliative Care is that palliative care should be delivered via an interprofessional and collaborative palliative care practice. Despite this recommendation for interprofessional palliative care teams, there is a known shortage of trained palliative care professionals, and an even greater shortage of professionals who have been trained through interprofessional curricula.

**Methods:** The Palliative Care Training Center at the University of Washington was established through a three-year grant from the Cambia Health Foundation. The goal was to develop, pilot test, and evaluate an interprofessional curriculum for palliative care providers seeking specialty training in palliative care. The first phase was a state-wide needs assessment of palliative care educational needs. During the second phase, the interprofessional team created a conceptual model and curricular domains based on the data collected from needs assessment. The last phase was the implementation of the nine month curriculum with an initial cohort of interprofessional students.

**Results:** This symposium will present the multiple phases of the mixed methods research that led to the development and implementation of a interprofessional graduate certificate in palliative care. Presentations will include: 1) a brief overview of the aims of the entire project 2) the process and outcomes of the state-wide needs assessment, titled: A Community Needs Assessment for the Development of an Interprofessional Palliative Care Training Curriculum” presented by Dr. Heather Coats 3) the process of creating the conceptual model that guided the development of the curriculum, titled: Design and Development of an Interprofessional Palliative Care Curriculum, presented by Tia Pagenelli, BSN, MS 4) the content and outcome evaluations of the implemented curriculum with the initial cohort of students, titled “Interprofessional Palliative Care Curriculum: An Outcomes Assessment” presented by Dr. Ardith Doorenbos.

**Implications:** Consistent with the WIN mission statement, this symposium will detail the processes of a large project encompassing palliative care education, practice and research. Our goal would be for others to learn about our processes and be able to implement similar projects within their own institutions, thus being able to contribute to impacting the shortage of palliative care trained professionals.

**Funding:** Research reported in this article was supported by the Cambia Health Foundation, National Institute of Health the National Institute of Nursing Research under award number K24 NR015340, and the National Heart, Blood and Lung Institute under award number T32 HL125195. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

# AN INTERPROFESSIONAL GRADUATE CERTIFICATE IN PALLIATIVE CARE: DEVELOPMENT AND IMPLEMENTATIONS

## A Community Needs Assessment of Interprofessional Palliative Care Training

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*Ardith Doorenbos, PhD, RN, FAAN*

*Professor*

*University of Washington*

*Biobehavioral Nursing and Health Systems*

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*Seattle, WA*

**Aim:** The purpose of this presentation is to describe the process and results of our community needs assessment of interprofessional palliative care educational needs in Washington state.

**Background:** There is a known shortage of trained palliative care professionals, and an even greater shortage of professionals who have been trained through interprofessional curricula. As part of an institutional Palliative Care Training Center grant, a core team of interprofessional palliative care academic faculty and staff completed a state-wide palliative care educational assessment to determine the needs for an interprofessional palliative care training program.

**Methods:** We approached the needs assessment through a cross-sectional descriptive design using mixed-method inquiry. Setting/Subjects: Each phase incorporated a variety of settings and subjects.

Measurements: The assessment incorporated multiple phases with diverse methodological approaches: a preparatory phase—identifying key informants; Phase I—key informant interviews; Phase II—survey; and Phase III—steering committee endorsement.

**Results:** The multiple phases of the needs assessment helped create a conceptual model for the Palliative Care Training Center. The input from a variety of interprofessional key informants across these multiple phases of a needs assessment allowed us to define priority educational needs for an interprofessional palliative care curriculum.

**Conclusions:** This presentation will provide the specific details of the steps taken to conduct a state wide needs assessment as the first phase of the development of an interprofessional palliative care educational program that crosses disciplinary boundaries to integrate knowledge beneficial for all palliative care clinicians. The input from a range of palliative care clinicians and professionals at every phase of the needs assessment was critical to creating an interprofessional palliative care curriculum.

**Funding:** Research reported in this article was supported by the Cambia Health Foundation, National Institute of Health the National Institute of Nursing Research under award number K24 NR015340, and the National Heart, Blood and Lung Institute under award number T32 HL125195. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.



**Abstracts of Poster Presentations**

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**ISSUES IN CHILD AND ADOLESCENT  
HEALTH**

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**ADDRESSING HEALTH-RISK BEHAVIORS IN ALTERNATIVE  
SCHOOLS: THOUGHTS OF SCHOOL NURSES**

*Karen E. Johnson, Annie-Laurie McRee*

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**ADVERSE EXPERIENCES IN CHILDHOOD  
AND PRESCHOOL LANGUAGE DEVELOPMENT**

*Ashley J. Scherman, Jonika B. Hash, C. Fleming, M. Oxford*

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**CARING FOR A CHILD WITH AUTISM:  
FILIPINO AMERICAN BELIEFS AND PERCEPTIONS**

*Sharee B. Anzaldo*

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**THE LATEST EVIDENCE ON CARING FOR  
PEOPLE WITH PEANUT ALLERGIES**

*Daniel W. Hill, Jane H. Lassetter, Craig Nuttall*

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**MOTIVATIONAL FACTORS INFLUENCING WEIGHT  
LOSS IN FORMERLY OBESE ADOLESCENTS**

*Shawn E. Siqueiros, Ki Moore, Patricia Daly, Graciela E. Silva Torres*

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**A TRANSITION CARE MODEL TO SUPPORT FOSTER YOUTH**

*Michelle T. Dang, Christine Martinez, Laurie Brown, Shawn Marie Rosenthal*

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**DELIRIUM IN CRITICALLY ILL CHILDREN:  
IMPLEMENTATION OF SCREENING**

*Sharon Norman, Asma Taha, Helen Turner*

WHO'S HUNGRY IN SAN DIEGO?

*Kathy James, Alison M. Schurman, Marianne Brown*

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TIMING IS EVERYTHING: DISCHARGE TEACHING  
TO PARENTS IN PEDIATRIC SURGERY

*Kate Boulder, Joseph Burkard, Kathleen Boyadjian, Kyle Wehner*

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ANALYSIS OF THE SELF-DETERMINATION THEORY  
ON MINDFULNESS IN CHILDHOOD OBESITY

*Megan Jester*

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PARENTAL GUILT: A CONCEPTUAL FRAMEWORK  
AND REVIEW OF THE EMPIRICAL LITERATURE

*Yuting Lin*

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COMMUNITY ENGAGEMENT TO IMPROVE THE  
TRANSITION FROM TUBE TO ORAL FEEDING

*Heather Aldrich*

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INCREASING THE USE OF LONG ACTING REVERSIBLE  
CONTRACEPTIVES IN ADOLESCENTS

*Katie Strawn, Gloanna Peek, Rene Love, Christie Pacheco*

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PREVENTING PEDIATRIC MARIJUANA  
POISONING IN COLORADO

*Tiffani Roberts, Sarah Amos, Victoria Noreen*

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IMPROVING EARLY IDENTIFICATION OF ACUTE  
APPENDICITIS IN PEDIATRICS WITH ULTRASOUND

*Karen Sue Hoyt, Teresa Sanchez Rodriguez, Babak Khazeani*

MINDFUL EATING PRACTICES OF HEMOPHILIA  
ADOLESCENTS AT RISK FOR OBESITY

*Jennifer N. Donkin, Patricia Daly*

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BREAKING TRADITION: ALTERNATIVE PEDIATRIC  
EXPERIENCES IN AMBULATORY CLINICS

*Karen LeDuc, Laurel More, Kristen Coleman*

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CRITICAL ANALYSIS OF PARENTAL ACCOUNTS  
REGARDING DELAYED DIAGNOSIS OF AUTISM

*Kathy T. Kelly*

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TRANSITION TO ADULTHOOD BY YOUNG ADULTS  
IN SPECIAL EDUCATION: TEACHER PERCEPTIONS

*Roneka Muhammed*



# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Addressing Health-Risk Behaviors in Alternative Schools: Thoughts of School Nurses

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**Purpose/Aims:** To describe results from a pilot study assessing school nurses' attitudes and perceived barriers towards addressing health-risk behaviors and social determinants of health among students in alternative high schools (AHSs).

**Rationale/Conceptual Basis/Background:** AHSs serve a growing population of students who have unique needs for health and social services. AHS students are at greater risk for adverse childhood experiences, involvement in health-risk behaviors, mental health problems, and school dropout than students in traditional high schools. In a recent survey, nearly half of AHSs in Central Texas had a full-time registered nurse, making the school nurse an important resource for addressing these and other health needs. However, little research has explored the work of nurses in AHSs.

**Methods:** We used data from an online statewide survey of middle and high school nurses in Texas conducted in the fall of 2015. We restricted analyses to school nurses who reported working in at least one alternative high school ( $n=25$ ). The sample was 100% female, 56% held a bachelors degree or higher, and had been a school nurse for an average (mean,  $M$ ) of 14.8 years. Respondents worked in AHSs with diverse student bodies where over half were students of color (60%) or received free/reduced lunch (64%). We used descriptive statistics to calculate means and percentages for statements assessing school nurses' comfort with students' addressing health-risk behaviors, and barriers to doing so, and their perceptions of how social-determinants of health fit into their scope of practice.

**Results:** Overall, nurses expressed moderate to high levels of comfort addressing a wide-range of risk-behaviors among students. Nurses felt most comfortable addressing substance use (mean ( $M$ )=4.36, possible range=1-5, with higher values indicating greater comfort), followed by sexual behavior ( $M=3.88$ ) and mental health ( $M=3.84$ ). When asked about barriers to addressing students' health-risk behaviors (range=1-4, with higher values indicating greater barriers), a nurses rated a lack of resources for follow-up ( $M=3.40$ ), parental approval ( $M=3.28$ ), availability of funds/resources ( $M=2.75$ ), and support from principal/district ( $M=2.72$ ) as the most significant barriers to doing so. With regards to addressing social determinants of health, fewer than half of respondents agreed that addressing school dropout was within their scope of practice as a school nurse (44%) but more agreed that addressing other social determinants, including poverty (56%), homelessness (64%), and adverse childhood experiences (64%) did.

**Implications:** Addressing health-risk behaviors and social determinants are important for adolescent and young adult health. Findings from this descriptive pilot study offer initial insights into the perceptions of AHS nurses related to addressing health-risk behaviors and social determinants of health. Future research should evaluate school nurses' role and effectiveness in addressing health-risk behaviors and social determinants of health, and address barriers to effectively meeting the needs of AHS students. Such research could have implications for continuing education and advocacy efforts to ensure nurses are well-supported to meet the diverse needs of AHS students.

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**Funding:** American Nurses Foundation/National School Nurses Association (PI: Johnson).

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Adverse Experiences in Childhood and Preschool Language Development

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**Purpose:** To compare the amount of adverse childhood experiences (ACEs) among 10- to 24-month-old children to their scores on the Preschool Language Scale™ (PLS-4).

**Background:** ACEs, conceptually defined as abuse and household dysfunction, have been linked to poor health and poor adolescent academic engagement. Limited studies link ACE exposures among very young children (≤5 years of age) to health and developmental outcomes in real-time, and overall less is known about the sensitivity of ACE measures to identify vulnerable young children who may diverge early from standard language development.

**Methods:** We conducted a secondary analysis of data from a randomized comparative effectiveness trial of a home visiting parenting intervention program. The trial included 247 Washington State families with 10- to 24-month-old children who had a recent, open child protective services investigation of child maltreatment. Data were collected across 4 time-points (T1 = baseline, T2 = post intervention, T3 = 3-months post intervention, T4 = 6-months post intervention). The PLS-4 was measured by blinded research personnel at T1 (mean child age = 16 months) and at T3 (mean child age = 24 months). ACEs were measured across T1 – T4 by retrospective parent report on the Difficult Life Circumstances questionnaire, Center for Epidemiologic Studies Depression Scale, Child Life Events questionnaire, and sociodemographic interview, as well as by official Department of Social and Health Services records. ACE exposures were summed to yield an ACE score ranging from 1-9 types of exposures experienced by children through T4. The 9 types of exposures included: maltreatment; removal from birth home; caregiver mental illness; caregiver incarceration; domestic violence; household substance use or abuse; caregiver divorce or separation; death of a family member or loved one; and homelessness. Regression was utilized to compare ACEs to T1 and T3 PLS-4 standardized scores, adjusting for child age and gender, parent race/ethnicity and education, and treatment assignment.

**Results:** Scores from the PLS-4 at T1 were available for all 247 children and for 219 children at T3. Over half of the population reported ≥ 3 ACEs (see Figure 1). Mean PLS-4 scores were 98.4-points (*SD* = 0.85) and 97.0-points (*SD* = 1.06) for T1 and T3, respectively. ACEs were negatively and significantly predictive of T1 PLS-4 scores such that, for every 1 additional ACE exposure, children were expected to score 2.12-points lower on the T1 PLS-4, holding all else constant ( $p < 0.0001$ ). ACEs were not a significant unique predictor of T3 PLS-4 scores, holding all else constant ( $\beta = -0.43, p = 0.56$ ).

**Implications:** Our findings seem counterintuitive; divergence of normal and abnormal language development is typically stronger at 24 months-of-age, and recent studies have linked poor academic performance with exposure to ACEs. The high quantity of ACE exposures and higher than expected mean PLS-4 score separate our study sample from others reported suggesting further research is warranted to understand the sensitivity of ACE measures to identify very young children vulnerable to dysfunctional language development.

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**Funding:** This research was supported by grants R01 HD061362 and U54HD083091 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Caring for a Child with Autism: Filipino American Beliefs and Perceptions

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**Introduction:** Autism spectrum disorder (ASD) is a major public health concern that strikes approximately 1 out of 68 children in the United States (US). ASD is a neurodevelopmental disability that impairs an individual's behavioral patterns, communication patterns, and social interactions. According to the CDC, this developmental disability affects 11.3 per 1,000 Asian American/Pacific Islander children.

**Significance:** A dearth of knowledge exists about ASD in the Filipino American community, and largely remains underreported in the US. Shame and stigma associated with ASD hinders Filipino Americans from seeking health care to alleviate symptoms, promote independence, and optimize health, and consequently results in delay of treatment. Seeking early intervention is necessary to promote optimal development for the child with ASD. Parents may experience negative health consequences from stressors associated with managing care for their child.

**Purposes/Aims:** This research project aims to: (1) explore Filipino American cultural beliefs and perceptions about ASD; (2) identify how Filipino American parents manage care for a child with ASD; and (3) generate an explanatory framework on Filipino American parental management of care for a child with ASD.

**Background:** Health and illness in Filipino culture is based on *timbang* (balance), where health stems from attaining balance, and illness stems from a consequence of imbalance. Traditional Filipino cultural values that may affect help-seeking behavior include *hiya* (shame), *amor propio* (self-esteem), *pakikisama* (getting along), and *bahala na* (leaving things in the hands of God). As a collectivist culture, group needs are prioritized over individual needs, and influence communication patterns and help-seeking behavior.

**Methods:** A mixed method approach will be used to address the research questions proposed in this study. Two questionnaires will be self-administered to the research participant: (1) demographic information about the parent and the child with ASD, and (2) parental level of acculturation. A personal interview will elicit parental beliefs and perceptions about ASD using Kleinman's explanatory model of illness and experiences managing care for a child with ASD.

**Results:** Data analysis will commence with coding processes based in grounded theory to develop an explanatory framework. The constant comparative method drives data analysis supported by inductive processes. Memos, diagrams, field notes, and reflexive journals will also be utilized as analytic tools. Demographic and acculturation information will be collected and analyzed through descriptive statistics. Triangulation of findings will be used to establish rigor.

**Implications:** Research studies focusing on Filipino Americans and ASD will contribute to the knowledge base of cultural competency in nursing care. Findings from this study will provide the groundwork for establishing culturally sensitive protocol in screening, diagnosing, and managing ASD in Filipino Americans. Gaining insight about ASD in the context of parenting within a Filipino American family is salient for health care providers to ensure a sound understanding of how the developmental disability affects the family unit, and minimize negative health consequences for the child with ASD.

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**Funding:** Sigma Theta Tau International Honor Society of Nursing Gamma Tau-at-Large Chapter Research Grant Award and Society of Pediatric Nurses Research Grant Award.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## The Latest Evidence on Caring for People with Peanut Allergies

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**Purpose/Aims:** The purpose of this literature review was to summarize the latest guidelines on preventing peanut allergies and recent research on effective diagnostic and treatment techniques.

**Rationale/Background:** Approximately three million people in the United States have peanut allergies, and the prevalence of peanut allergies has tripled in recent decades. In this population, reactions to peanuts can be life-threatening. Therefore, it is critical for nurses and nurse practitioners to know the latest evidence on prevention, diagnosis, and treatment of peanut allergies.

**Methods:** The electronic databases Cochrane, CINAHL, and PubMed were searched using these terms: peanut hypersensitivity or peanut and food hypersensitivity and desensitization, immunologic or immunotherapy or OIT or SLIT, and diagnos\*. Only English language research articles with a focus on prevention, diagnosis, and/or treatment of peanut allergies were included. Studies were excluded if they were published before 2010 or focused on food allergies in general. Additional sources were found by reviewing references of relevant studies. Based on the criteria, 61 articles were reviewed. Authors reviewed internal validity of the articles and discussed any differences to reach consensus.

**Results:** To help prevent development of peanut allergy in high-risk infants, new guidelines, based on recent research, indicate peanuts should be introduced within the first year of life, and small amounts of peanuts should be regularly consumed thereafter. Other research has found that diagnosing with serum component testing is more accurate than either skin prick testing or serum specific-IgE testing. This finding could minimize the need to diagnose with oral food challenges, which have an inherent risk of allergic reaction. Finally, other studies indicate oral immunotherapy and/or sublingual immunotherapy are relatively safe and effective in creating tolerance to peanut for allergic patients.

**Implications for Translation to Practice/Further Research:** With the increasing prevalence of life-threatening peanut allergies, nurses and nurse practitioners need to know the latest research to be able to teach patients and their families how to prevent peanut allergies as well as options for diagnosing and treating them. Future research should focus on oral immunotherapy and sublingual immunotherapy to refine their effectiveness and further reduce risk.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Motivational Factors Influencing Weight Loss in Formerly Obese Adolescents

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**Purpose/Aims:** This research will identify motivational factors and psychological needs important for weight loss in obese adolescents who transition into normal weight young adults. Specific aims are 1). Compare intrinsic and extrinsic motivation between two groups, one group of normal weight young adults who were obese as adolescence but have maintained long-term weight loss of 1 or more years and a second group of obese young adults who have maintained their obesity status from adolescence, 2). Determine the extent to which psychological needs influence the degree of motivation in the same 2 groups.

**Background:** Obesity in adolescence is a worldwide epidemic; the condition usually continues into adulthood. Medical co-morbidities associated with adolescent obesity are diabetes, hypertension, ischemic heart disease, and stroke. Current research has focused on individuals who have been affected with obesity but the focus of this research is to examine the motivation in those who have been successful in sustaining long-term weight loss. Self-determination theory (SDT) is a human motivation theory used to explain motivating factors of formerly obese adolescents who become normal-weight young adults. SDT consists of three basic psychological needs: autonomy, competence, and relatedness. Intrinsic and extrinsic motivation exists among a continuum that are dependent upon individual goals and if and how they reach these goals. This research proposes normal weight young adults who were obese during adolescence and have maintained normal weight for one or more years will rate intrinsic motivation higher and extrinsic motivation lower and experience more autonomy, competence, and relatedness than obese young adults remaining obese since adolescence.

**Methods:** A comparative descriptive design will be used to investigate motivation of healthy eating and exercise in the two study groups. The 2 groups: group 1- normal weight young adults ages 20-25 years who were obese as adolescents ages 15-19 years and who have maintained long-term weight loss of one year or more, group 2 – obese young adults ages 20-25 years who maintain their obesity status since adolescence ages 15-19 years. Participants will be recruited using an electronic health record query. After obtaining consent, brief standardized questionnaires measuring psychological needs and motivation for healthy eating and exercise will be completed. Target participants for both groups are current patients at a community health clinic in the Southwest U.S.

**Results:** Following IRB approval, data collection is anticipated Spring of 2017.

**Implications:** Little is known about the motivational factors used to maintain long-term weight loss among obese adolescence. Understanding the role of motivation in successful weight loss is crucial to develop and target effective interventions. Implications for practice include applying these findings as nurse practitioners in treating obese adolescents such as coaching to facilitate the transition from obesity to normal-weight. Including motivation in the design of anti-obesity interventions may add a vital tool to maintain long-term weight loss.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## A Transition Care Model to Support Foster Youth

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**Purpose:** The purpose of this intervention project is to provide health care transition support to foster youth by implementing a transition care model that utilizes registered nurses as transition coaches to assist youth move from a child to an adult oriented medical home and enhance their self-efficacy in self-care management.

**Rationale:** Due to histories of maltreatment and exposure to violence, children in foster care are three to seven times more likely than non-foster children to have physical and mental health disorders that often persist into adulthood. As a result, children in foster care grow up to have disproportionately higher rates of chronic health conditions and mental illness than their non-foster peers, and many foster youth and young adults continue to experience undertreated or poorly managed chronic health as they “age out” of the foster care system

**Methods:** The study utilizes a mixed method, quasi-experimental design. Foster youth, ages 18-24, are recruited from a foster care agency to receive health transition support services from registered nurses. Participants meet with nurses one on one to develop health goals, identify a medical home, and create an electronic health record. Nurses also provide health education and support with current health issues and collaborate with foster care case managers in addressing health needs. Participants complete baseline surveys and again after receiving nursing support services using audio-CASI. Participants will also be recruited to complete semi-structured interviews regarding their experiences with health care transitions and nursing support. Our goal is to recruit 30 youth for intervention.

**Results:** Data collection and analysis are ongoing and will be completed in time for conference presentation. Preliminary demographic data reveal that most participants are female (69%) with a mean age of 20. Baseline data (N = 23) related to health care reveal that the vast majority (95%) of participants have health insurance with 43% not having a primary care provider. Most participants (70%) went to the ER at least once in the last 12 months and 26% visited the ER at least five times; 30% report that they had problems seeing their doctors in the year; 52% report currently on medications for their health problems. Almost all participants (91%) do not have an electronic health record.

**Implications:** Emancipated youth are often forced to navigate a complex health care system with very little or no guidance. This lack of transition support can lead to fragmented and uncoordinated health care services and an over reliance on the emergency room. Preliminary data from the current study suggest that foster youth face significant barriers to care, often utilize the ER for health care, and many do not have a medical home or access to their health records. Nurses could help address these health disparities by serving as a safe and supportive adult and health coach for foster youth as they transition to adulthood and manage of their own health.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Delirium in Critically Ill Children: Implementation of Screening

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**Purposes/Aims:** The purpose of this science improvement project is three-fold. The first is to implement delirium screening in the PICU. The second is to measure sustainability of PICU nurses' delirium knowledge after delirium education over a three month time period, and the third is to measure the PICU nurses' self-confidence and attitude towards delirium over a three month time period.

**Rationale/Background:** Delirium is a common manifestation of acute brain dysfunction in critically ill children, occurring in up to 30% of patients in the Pediatric Intensive Care Unit (PICU). A diagnosis of delirium places the critically ill child at risk of adverse outcomes, which includes longer hospital stays, prolonged mechanical ventilation, and increased mortality. Other adverse effects of delirium are increased hospital costs and post-traumatic stress disorder after hospitalization. Although delirium is common only 2% of pediatric intensive care units screen for delirium every day at least once a shift. The impediments to screening for delirium included knowledge deficits of delirium and screening tools for the critically ill child. Nurses' lack of knowledge regarding delirium was identified in two systematic literature reviews. One of the systematic literature reviews demonstrated that education increased nurses' knowledge of delirium.

**Intervention/Procedure:** Delirium screening for critically ill children in a northwest PICU was implemented after multifaceted education. A questionnaire on delirium knowledge, self-confidence and attitude was voluntarily completed by nurses for a baseline measurement prior to education. The questionnaire has demographic information, and questions on delirium knowledge and risk factors. Pediatric delirium content experts developed the delirium knowledge questionnaire. Delirium self-confidence and attitude towards delirium using likert scale responses are included in the questionnaire. The questionnaire will be administered post education and repeated three months post implementation of delirium screening.

**Results:** Data analysis will use descriptive and inferential statistics. Descriptive statistics will be used to report nurse's years of experience in ICU, educational preparation, age and gender. Inferential statistics using repeated measures (ANOVA) will be used to determine change in nurses confidence, attitude towards delirium, and delirium knowledge (pre and post education) in assessing delirium and determine sustainability of the intervention at two different time points.

**Conclusions & Implication for Practice:** Increased nursing knowledge, self-confidence and attitude toward delirium have the potential to prevent delirium, shorten delirium duration and mitigate adverse effects of delirium in the critically ill child. From an organizational perspective there is the potential to decrease cost of hospitalization.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Who's Hungry in San Diego?

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**Background:** Food insecurity (FI) is a lack of access to nutritious food. Food insecure individuals regularly skip meals, cut portion sizes, and rely on low cost, low nutrient-dense foods to survive. Many subsidy programs offer stamps or financial incentives for groceries. Unfortunately, in low income neighborhoods the average distance to a grocery store is nearly double the distance than it is in higher income neighborhoods. Many food insecure individuals do not own a vehicle or have means of transit, thus severely inhibiting convenient access to more diverse food options. Usually, if a neighborhood store accepts food subsidy transactions, the available foods are not healthy options, leaving this population of individuals fed, yet under nourished. FI has been linked to multiple preventable diseases from behavioral disorders to asthma to obesity and its sequelae. In San Diego County, 14 percent of families are food insecure. Of these families, 67 percent meet eligibility for government subsidized nutrition programs.

**Purpose:** The American Academy of Pediatrics (AAP) recommends screening for FI at all well appointments using the two-question food insecurity screening tool. Screening includes asking “Within the past 12 months we worried whether our food would run out before we got money to buy more” and “Within the past 12 months the food we bought just didn’t last and we didn’t have money to get more.” The AAP recommends referrals to community resource centers for families who screen positive utilizing these metrics. The aim of this project was to implement a food insecurity screening at all encounters at a large Southern California community clinic practice who serves a majority demographic of low income Hispanics in five area clinic sites. Screening for food insecurity at clinic encounters opens the door to provide access to these available resources.

**Methods:** Stakeholders chose one week to screen all patients presenting to clinic for any encounter at a multi-clinic community health center. During this week, 686 patients across five clinic sites were screened. 77 percent of this clinic’s population demographic meets eligibility for food assistance programs. Despite this, 48 percent of respondents screened positive for food insecurity when positive was qualified by “often true” or “sometimes true”.

**Implications:** Screening for FI affords a provider the opportunity to identify at-risk populations and provide them the resources for local FI programs. Since FI within this community clinic group is nearly triple that of San Diego county, screening patients for food insecurity and then offering resources to at-risk populations is imperative in this population base. Alternative food assistance programs run by the United States Department of Agriculture (USDA) such as Emergency Food Assistance Program (EFAP) and CalFresh help mitigate this problem by bringing nutritious foods to food insecure neighborhoods. Screening for FI in at-risk populations allows providers the opportunity to provide resources for such programs.



# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Timing Is Everything: Discharge Teaching to Parents in Pediatric Surgery

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**Purpose:** The purpose of this evidence-based practice change is to improve the timing of discharge education to the parents of pediatric patients under age 18 in an outpatient surgery center to best meet the needs of adult learners caring for their children at home.

**Background:** Parents' failure to retain knowledge of their child's aftercare instructions during the transition process to home from outpatient day surgery can put their child at risk for undesired post-operative complications after arriving home. Complications such as fever, pain, or uncontrolled bleeding can decrease parents' overall satisfaction with discharge teaching and the overall experience. The rapid pace of outpatient day surgery cases and multiple surgical personnel changes in each phase of perioperative care create transition challenges. Over 50 years of nursing literature support the nursing "golden rule" that discharge teaching begins upon admission. Evidence supports four cardinal strategies including the practice early initiation of discharge instructions before surgery, rather than waiting until the end of the stay. Other recommendations include a distraction-free environment, repetition of key points, and the use of 24-hour follow-up phone calls.

**Process Used:** The project plan process involves re-designing the role of the existing discharge education registered nurse (DC RN) at one suburban outpatient surgery center. DC RNs educate parents using four cardinal strategies: early initiation of instructions, repetition of key points throughout the length of stay, optimal timing in a distraction-free environment, and the use of 24-hour follow-up phone calls by staff. Pre-operative nurses summon the DC RN to the pre-operative area to begin reviewing home care instructions with parents during the waiting period prior to surgery using standardized written and verbal methods. Prior to discharge, the primary recovery room nurse clarifies and reiterates important points to parents and asks parents to recall information using the teach-back method.

**Outcomes:** Results from the Outpatient and Ambulatory Surgery Consumer Assessment of Healthcare Providers and Systems telephone survey (edition "N" for parents of minors) and length of stay data for both the post-anesthesia period and total length of stay are ongoing.

**Conclusions:** Evidence-based clinicians ought to carefully consider the timing needs of their audience and provide discharge education that improves care. Meeting the needs of adult learners is an important step toward improving the quality of the instructions given, and helping to better prepare parents to safely and effectively care for the pediatric surgical patient following hospital discharge to home is essential. By selecting an earlier time for initiation of pediatric day surgery discharge education to adult learners, nursing clinicians can potentially increase parents' satisfaction levels with the education being delivered, without creating significant delays in the perioperative length of stay.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Analysis of the Self-Determination Theory on Mindfulness in Childhood Obesity

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**Purpose:** To examine and evaluate Edward Deci and Richard Ryan's self-determination theory (SDT) as it pertains to mindfulness in childhood obesity.

**Description of the Theory:** The SDT is an approach to initiate behavioral change and self-regulation in an individual based on three psychological needs: autonomy, relatedness, and competence. Intrinsic and extrinsic motivation are two tenets that comprise this theory. The SDT posits that a self-determined individual has the intrinsic motivation to make positive changes in the areas of behavior, cognition, and psychological well-being. In children, self-determination primarily comes from extrinsic factors, such as interpersonal relationships within their environment, and intrinsic motivation is the resultant gratification.

**Internal Consistency of the Theory:** Lorraine Walker and Kay Avant's (2011) method for theory analysis was applied to the SDT to determine its level of applicability in the following areas: theory origins, meanings, logical adequacy, usefulness, generalizability and parsimony, and testability. The SDT is a well-validated theoretical framework that has been tested across the lifespan. Applications of the SDT have spanned across disciplines such as psychology and education, to sub-areas such as self-esteem and virtual reality. Multiple validated questionnaires and measures have come from the application of the SDT. Articles analyzed revealed high internal consistency (Cronbach's alpha [a]  $\geq 0.8$ ).

**Logic Linking Theory to Research Problem:** Little is known about mindfulness in childhood obesity, supported by the self-determination theoretical framework. Multiple studies have been performed applying the SDT to mindfulness and childhood obesity separately. When a child has focused attention in the present moment (mindfulness), he or she develops the autonomous ability to modify negative behaviors related to food and activity selection, thus reducing or preventing weight gain. Therefore, it is postulated the SDT can be applied to the study of mindfulness in childhood obesity to link the two concepts.

**Conclusions:** Childhood obesity is a complex disease that impacts the health of millions of children, and is a public health crisis. Although external factors such as healthy diet and physical activity are known indicators of prevention, internal factors such as mindfulness and self-determination are lacking in validated studies and measures. Mindfulness has a place in Western health care and research for childhood obesity as a holistic, non-pharmacological, low-cost course of treatment. The utilization of the SDT as a framework provides a generalized, validated theory to promote nursing research in this discipline, develop behavioral theory-based interventions, and bridge the mind-body gap in childhood obesity.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Parental Guilt: A Conceptual Framework and Review of the Empirical Literature

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**Aims:** Parental guilt is a pervasive and complex social emotion that can plague parents or caregivers after a child's accidental injury. However, little is known regarding the cognitive appraisal of parental guilt and ways of measuring the concept. Although parental guilt is recognized as a risk factor that can contribute to prolonged symptoms of posttraumatic stress, the underlying mechanism is unclear. This paper reviews the conceptual and empirical literature to develop a functional model of parental guilt appraisal that includes cultural variations, and assessment measures.

**Methods:** Relevant empirical literature was identified from searches of databases. The terms "guilt" and "parental guilt" were searched in PubMed, CINAHL, and PsycINFO databases. Searches were restricted to parental guilt related to a child's accidental injury, English language, and published between 1986 and 2016.

**Results:** Guilt appraisal occurs unconsciously. Major components of the guilt appraisal involve 1) notable changes, 2) appraisal of the change in relation to individual's concerns and coping potential, and 3) emotion-specific action tendencies and accompanying physiological changes. Two main approaches to measurement are evaluated: self-report using unidimensional instruments, and qualitative in-depth interviews. Appraisal variations among cultures are also discussed.

**Conclusions:** This paper reviews the conceptual and empirical evidence regarding parental guilt triggered by a child's accidental injury. A functional model of guilt process is proposed. Some recommendations concerning the measurement of parental guilt are made.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Community Engagement to Improve the Transition from Tube to Oral Feeding

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**Purpose/Aim:** The purpose of this Patient-Centered Outcomes Research Institute (PCORI) Pipeline-to-Proposal project is to engage a variety of stakeholders in the Colorado Front Range region who are interested in improving the transition from tube feeding to oral feeding for children and their families.

**Background:** More premature and critically ill infants are surviving than ever before. While this is exciting progress, many babies born early or with congenital anomalies have life threatening medical conditions in the first months of life. An indwelling feeding tube (nasogastric or gastrostomy tube) is often used in the hospital to assure adequate growth and to administer medications in critically ill infants. Use of feeding tubes is supposed to be temporary until children can learn to safely eat by mouth. However, many children end up being dependent on tube feeding for years due to compromised oral feeding development as an infant.

**Description:** The project is working to build an interdisciplinary community impacted by this health challenge, particularly stakeholders who are not typically included in research. Stakeholders targeted for this project include patients/families, health care providers, researchers, and non-profit organizations. Additional goals during this 9-month project include establishing a partnership name, governance structure, and communication channels.

**Outcomes:** Advisory board members will include parents and professionals from various disciplines. All project stakeholders will provide input on partnership name and feedback on communication channels. At the end of the project, next steps towards a future comparative effectiveness research question will be determined to improve the transition of tube feeding to oral feeding for children and their families.

**Conclusions and Implications:** Tube feeding is helping save many children's lives, yet research is lacking for transitioning from tube feeding to oral feeding. Additionally, the transition process often does not include patient/caregiver-centered outcomes. Minimizing social, emotional, health, and financial consequences of long-term tube feeding has the potential to greatly improve the quality of life for these children and their families.

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**Funding:** This project was funded through a Patient-Centered Outcomes Research Institute (PCORI) Pipeline-to-Proposal Award (5106024), administered on behalf of PCORI by Colorado Foundation for Public Health and the Environment.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Increasing the Use of Long Acting Reversible Contraceptives in Adolescents

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**Purpose/Aims:** The purpose of this research project is to develop a clinical practice guideline for contraceptive counseling to include long acting reversible contraceptive (LARC) recommendations for the adolescent population.

**Background:** LARCs, which include intrauterine devices and implants, are the top-tier contraceptive for young, nulliparous women yet they are only used in less than 6% of women under 19 years old. However, there is no clinical practice guideline that addresses the adolescent's unique developmental and psychosocial needs that arise during contraceptive counseling. Instead, current contraceptive guidelines are written primarily for adults and do not illustrate quality, patient-centered care for adolescents. We believe that a clinical practice guideline with adolescent-specific recommendations will strengthen counseling especially for long-acting reversible contraceptives to reflect best practice guidelines.

**Methods:** A review of literature investigating current contraceptive counseling practices was used. The review of literature searched PubMed, CINAHL, National Guideline Clearinghouse, Google Scholar and the Cochrane Library using search terms "LARCs," and "contraceptive counseling." We filtered results for subjects under 19 years. The search yielded over 35,000 results; titles and abstracts were reviewed using pre-determined inclusion and exclusion criteria. The final source documents included forty-three applicable manuscripts including: primary resources, meta-analysis, and clinical practice guidelines. The manuscripts were graded using the United States Preventative Task Force (USPSTF) scale. The evidence was then sorted by similar findings and practice recommendations. The findings were used to formulate practice statements, which were then input into the Bridge-wiz software. The program generated recommendations and assigned a strength rating based on the Cochrane grading schema. The clinical practice guideline was written from these recommendations. Finally, four clinical experts were identified using snowball sampling; they each participated in the final appraisal using the AGREE II tool.

**Results:** Based on the analysis of the review of literature, thirteen evidenced-based recommendations emerged from the forty-three manuscripts. The Bridge-wiz software labeled nine as strong recommendations and four as weak recommendations. The strong recommendation topics included: best-practices for recommending LARCs, using developmentally appropriate teaching, providing youth-friendly services, and eliminating potential barriers to LARC uptake in adolescents.

**Conclusions:** There are nine practice recommendations that increase adolescent uptake of LARCs. Limitations for the project included the absence of an internal review committee to grade the evidence and assign a strength to each recommendation in addition to the small amount of high quality evidence that included adolescents as the primary population. The use of Bridge-wiz software and the USPSTF evidence scale minimized bias. Despite the limitations, this clinical based guideline is the first to address counseling of contraceptives in the adolescent population especially to include LARC.

Providers can facilitate use of LARCs among adolescents by using developmentally appropriate and comprehensive contraceptive counseling. If more adolescents chose a LARC as their primary form of contraception, then overall teenage pregnancies, birth, and abortion rates may decrease. Further research is needed to understand why providers have not typically recommend LARCs and how to address these barriers.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Preventing Pediatric Marijuana Poisoning in Colorado

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**Purpose/Aims:** The purpose of this project was to research current policies in Colorado that target unintentional marijuana exposure among children, and to propose a new health promotion intervention to deter the rise of pediatric marijuana poisoning cases following the legalization of marijuana in Colorado.

**Rationale/Background:** Increased availability of marijuana began in Colorado in 2000 with the passage of medical marijuana with Amendment 20, and again in 2014 with the passage of retail sale of marijuana for recreational use among adults 21 years or older with Amendment 64. A consequence of the legalization of marijuana has been a marked increase in the incidences of unintentional pediatric marijuana consumption, measured in increased calls to poison control and hospitalizations for acute marijuana poisoning. In response, Colorado House Bill 14-1122, “Concerning provisions to keep legal marijuana from underage persons” was passed in 2014, which not only reinforced efforts to prevent marijuana sales to underage persons but also required all marijuana products to be sold in childproof packaging. Despite the new packaging requirements, evidence suggests that in the majority of cases of pediatric marijuana poisoning children consumed edible marijuana products purchased by the child’s parents or caregivers, suggesting that the product is not kept in the child proof packing and out of the child’s reach after purchase.

**Brief Description of the Undertaking:** The proposed health promotion intervention to support the enforcement of HB 14-1122 is the creation of a short Public Service Announcement (PSA) by public health nurses to educate caregivers on the dangers of pediatric marijuana poisoning and the importance of the safe storage of marijuana products. The proposed PSA will be distributed to a wide, universal audience via social media platforms such as YouTube and Facebook and consists of a short, simple message utilizing the acronym “W.E.E.D” as a slogan for marijuana poisoning prevention: **W**atch your children, **E**ducate children on “off limit” products, and **E**nclose marijuana safely and out of reach of children in order to **D**eter pediatric marijuana poisoning.

**Outcomes Achieved:** The anticipated outcome of this intervention will be a decrease in cases of accidental marijuana exposure in underage children, demonstrated by a decrease in calls to poison control and pediatric hospital admissions for marijuana consumption. Given the social media platform used for disseminating the PSA, metrics such as number of views, shares, and online trending discussions about the videos will be collected in order to gauge the impact the PSA had on the target population of parents and caregivers.

**Conclusion:** The rising trend of pediatric marijuana poisoning in Colorado represents a significant public health issue that threatens one of society’s most vulnerable populations, and as such should be a priority among the nursing community. In order to create safer and healthier communities, public health nurses should pursue further efforts to prevent pediatric marijuana poisoning including public education such as the proposed PSA, ongoing data collection regarding marijuana and youth, evaluation of current health promotion interventions, and advocacy for continued funding for prevention programming.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Improving Early Identification of Acute Appendicitis in Pediatrics with Ultrasound

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**Purpose/Aims:** Improve early identification via ultrasound of pediatric patients who meet the criteria for acute appendicitis in the emergency department (ED) (i.e. complain of acute right lower quadrant and/or periumbilical abdominal pain). At the completion of this project the goal is to improve early identification of acute appendicitis requiring surgical interventions and decrease risk of exposure to ionized radiation.

**Rationale/Background:** Acute appendicitis is the most common emergency surgical procedure in pediatric patients that present to the emergency department with a chief complaint of acute right lower quadrant/periumbilical abdominal pain, nausea, and vomiting. Acute appendicitis is seen at all ages, however, it is predominantly seen in pediatric patients. The literature reports to excellent clinical outcomes for pediatric patients with suspected acute appendicitis when ultrasound is performed. Ultrasound is sensitive and specific in diagnosing appendicitis in pediatric patients. Utilizing ultrasound rather than computerized tomography (CT) as the diagnostic modality of choice also reducing ionizing radiation and the future risk of cancer in pediatric patients. Evidence also shows ultrasound is more cost effective than CT. Used in conjunction to the clinical exam and laboratory data, ultrasound is a crucial component for evaluation of acute appendicitis.

**Brief Description/Methods/Project Plan Process:** Evidence-based criteria for evaluation of suspected appendicitis in pediatric patients in the emergency department are based on the American College of Radiology recommendations that an ultrasound as a preferred initial diagnostic tool for diagnosing acute appendicitis in pediatric patients. This recommendation in the form of a protocol is currently in place in the ED at the study hospital. The approach is to perform a retrospective chart review on pediatric patients who met the ultrasound criteria. The number of ultrasound performed in the ED for the past year will be counted. Then, a NP lead evidence-based program will be given to providers (MD, NPs, and PAs) to discuss the current use of the protocol use and a plan for future protocol adherence based on the current national guidelines. After this intervention, data will again be collection to assess whether or not there is protocol adherence regarding the utilization of ultrasound in the ED for pediatrics patients who presents with abdominal pain suspected of having appendicitis.

**Outcomes:** Outcome measures will demonstrate clinical significance regarding utilization of ultrasound and decrease in ionizing radiation exposure with pediatrics suspected acute appendicitis.

**Conclusions/Implications:** Assessment of implications will involve an opportunity to educate and improving clinical practice in pediatric patients with suspected acute appendicitis.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Mindful Eating Practices of Hemophilia Adolescents at Risk for Obesity

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**Purpose:** The purpose of this project is to determine mindful eating practices in 12 to 19 year olds with hemophilia that may be at risk for being overweight and obese.

**Background:** Adolescent obesity rates have quadrupled over the past 30 years, Approximately 21% of children 12 to 19 years of age are obese. These statistics bring to light a major health concern in the United States.

Hemophilia is a chronic illness that is complicated by obesity. This X-linked recessive bleeding disorder is characterized by episodes of both spontaneous and provoked bleeding in to joints, muscles, soft tissues and other organs. Overweight and obesity increases the mechanical stress and accelerate age-related degenerative changes in these joints. Activity restrictions and limitation in joint or muscle function may decrease or limit physical activity. This potential limit in physical activity combined with increased risk of emotional eating results in excess calories stored as fat.

Caloric intake has been established as a key factor in obesity. A significant cause of overweight and obesity in the adolescent population is emotional eating. Emotional eating is defined as the eating or overeating in response to a negative influence without specific emotion or mood. Influences such as boredom, loneliness, tiredness, perceived stress, anxiety or depression may trigger emotional eating. The identification of mindful eating practices assist in increasing awareness of triggers and emotions in the consumption of food.

The effect of being overweight or obese in the adolescent with hemophilia is not well understood, but obesity poses a grave risk on their already compromised muscular-skeletal function. There is a need for better understanding of how physical restrictions and emotional eating impacts the escalation of obesity in adolescents with hemophilia.

**Methods:** A quantitative descriptive cross sectional study design will be used to explore and describe mindful eating practices in the adolescent with hemophilia. In an outpatient clinic setting, during routine hemophilia care visits, the Mindful Eating Questionnaire (MEQ) will be administered by the health care provider to explore mindful eating practices and physical activity in 12 to 19 year olds with hemophilia. The MEQ is a validated tool measuring with higher scores indicating more mindful eating and lower scores indicating more mindless eating. Demographic data such as age, ethnicity, height, weight and BMI as well as questions about physical activity, food selection preparation and decisions about food choices will be collected. BMI will be correlated with MEQ scores and physical activity scores. Approximately 130 participants meet eligibility criteria. The target sample size is 100 participants. Data collection will be over a 12 months.

**Conclusion:** Data collection is to be completed by December 2017.

**Implications for Clinical or Educational Practice:** Understanding how mindful eating practices and physical activity impact obesity risk will assist health care providers in improving clinical care, anticipating needs, targeting health education and intervening with adolescents with hemophilia that are at risk for being overweight or obese.



# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Breaking Tradition: Alternative Pediatric Experiences in Ambulatory Clinics

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*Kristen Coleman, MS, APON*  
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**Background:** In nursing education, the clinical context is recognized as an essential arena for students to learn about the realities of nursing practice. Current literature supports a changing landscape for health care delivery which shifts from acute care to ambulatory care. This shift will impact the need for more nurses in the ambulatory setting. Exploration of alternative clinical learning environments is warranted given this shift in nursing practice delivery and potential nursing shortages predicted as early as 2020 in ambulatory settings. Historically, agency leadership, staff, and students have not supported the ambulatory setting as a viable learning environment for an undergraduate pediatric rotation.

**Purpose:** The purpose of this project was the development and implementation of an undergraduate pediatric clinical rotation in a large, hospital based pediatric ambulatory setting. Collaborative discussion, between an academic nursing program and a pediatric ambulatory care setting led to this creative and innovative clinical experience.

**Methods:** The successful placement and clinical experience for students in the ambulatory setting requires an approach which deviates significantly from the established acute care curriculum. Skill and task attainment is a primary focus for the novice nursing student. Given that ambulatory settings are not highly task oriented, several strategies were identified as key to the success of the student's clinical experience and achievement of the objectives of the rotation. Program development included: creating new clinical preparation materials, developing innovative learning strategies such as concept mapping focusing on care coordination and clinical reasoning, training ambulatory specific clinical scholars, and the development of pre- and post-conferences that enhanced student knowledge of pediatrics and preparation for NCLEX. Outcome measures included comparison of student performance via final course grades and scores on the Kaplan Integrated Pediatric Exam™ and student satisfaction reports.

**Results:** The validation of student learning is clearly evident by the significant clinical reasoning demonstrated via concept mapping as well as the positive outcomes associated with final course grades and scores earned on the Kaplan Integrated Pediatric Exam™. To date there are no significant differences between students placed in acute care settings and ambulatory placements on either of these measures. Anecdotal remarks obtained via clinical site evaluations further demonstrate the evolution of student integration of pediatric nursing concepts and satisfaction with their clinical experience.

**Implications for Education and Practice:** Nursing education and practice must re-examine current approaches to clinical teaching and seek methods to better prepare future nurses recognizing that experiences within clinical contexts are powerful in shaping student attitudes to learning, practice, and professional development. This program was developed to increase clinical capacity and to address more targeted and innovative learning activities for nursing students enrolled in a pediatric course. Facilitating effective clinical learning for pediatric nursing students is increasingly challenging given limited opportunities in most communities. This innovative program re-examined clinical teaching paradigms to maximize student learning in an ambulatory pediatric setting meeting established curricular goals, and may serve as a successful model of effective clinical instruction.

# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Critical Analysis of Parental Accounts Regarding Delayed Diagnosis of Autism

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College of Nursing  
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Salt Lake City, UT*

**Purpose:** This exploratory qualitative and critical discourse analysis (CDA) study considered whether parents' discursive abilities and resources could be a factor in delayed Autism Spectrum Disorder (ASD) diagnosis.

**Rationale and Background:** ASD is a common childhood disorder. Treatment outcomes for ASD are usually improved with early behavioral intervention, as reported by psychological research. Yet, epidemiological studies have found a disparity in age at diagnosis for Hispanic and low-income children compared to Anglo (white non-Hispanic) children. CDA was selected because it can be used to analyze for cultural influences and power imbalance in this disparity of health care.

**Methods:** In Utah, I obtained a purposive sample using flyers, snowball recruiting and participation in ASD family fairs. The sample included 10 Hispanic parents with a Mexican sociolinguistic heritage and 10 Anglo parents with a U.S. sociolinguistic heritage. Sociolinguistic heritage encompasses the language, culture, discourse, history and associated assumptions of a country or area. I used semi-structured interviews with open-ended questions and digitally recorded them in parent homes or rooms in public libraries. Four of the Hispanic parents required an interpreter.

Phase 1: I used qualitative linguistic and descriptive design to code and analyze individual parent interview texts (micro level discourse) of both groups regarding their experience obtaining a diagnosis of their child's behavior.

Phase 2: I employed a critical linguistic/discourse design and content analysis of scraped texts from 9 national ASD websites (macro level discourse). Content analysis provided evidence of significant difference between two of the 9 texts sampled. I compared parental texts and themes with the 9 ASD website texts. I also compared parental texts, categorized by level of privilege (based relative levels of education, English fluency, and income), with ASD website texts and CDA findings.

**Findings:** The findings from the first phase suggest that most Anglo parents focused on constructing themselves as "good parents" who met privileged U.S. Anglo discourse and ideological expectations for monitoring and caring for their children. In contrast, most Hispanic parents used their discourse and resources to construct themselves as concerned about their children's linear progress in school, ability to communicate, and social adaptability. Nine of the 10 Hispanic parents had not previously heard of the concept of ASD or principles of child development until after their child was diagnosed. Findings from the second phase of analysis suggest that the same discourse used by privileged Anglo parents in this study, on a micro level, were consistent with the dominant U.S. macro level discourse and ideology of the "good parent" as emerged from the ASD website data.

**Implications for Practice/Further Research:** Findings from this study suggests that, the more closely parents, either Hispanic or Anglo, were aligned with the privileged discourse model of the "good parent," the fewer barriers they reported to ASD diagnosis. Better understanding, by health care professionals, of their own socio-cultural expectations for parents may help over-come barriers to a timely ASD diagnosis and promote best care practice. Also, this study suggests the need for further research about the Hispanic/Mexican discursive model of parenting.

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# ISSUES IN CHILD AND ADOLESCENT HEALTH

## Transition to Adulthood by Young Adults in Special Education: Teacher Perceptions

*Roneka Muhammed, RN, BSN, PHN, MS  
Betty Irene Moore School of Nursing  
University of California, Davis*

Disabled young people transitioning to adulthood are more likely experience chronic poverty, serial unemployment, poor lifespan health outcomes and endure lifetime dependence on social welfare. Over 500,000 children with special health care needs and learning disabilities transition to adulthood each year in the United States. 300,000 of the 1,000,000 disabled children in California, age 13 to 22, were registered as students in public schools in 2015. Special education teachers and School Nurses are intermediaries at the intersection between healthcare and education systems, both affecting the lifespan outcomes of this population.

This cross-sectional, descriptive study sought to answer the research question: What are special education teachers' perceptions about transitions to adulthood for special health and learning disabled students and what are their perceptions of the School Nurse role in transition planning? A semi-structured interview tool was developed to collect data by in-person, audio recorded interviews from seven certified special education teachers with combined teaching experience of 159 years. The aim of this study was to explore special educators' perceptions of barriers to successful post-school outcomes persistently experienced by transition-aged students and how school nurses impact this transition. Literature supported finding of teachers having a greater appreciation for school nurses for their knowledge as a clinical resource, than for the nurses' clinical skills. Literature also supported results that teachers perceive school nurses as outsiders unless presented in milieus as student advocates or in a central role providing school healthcare access for medically fragile students. Teachers did not identify school nurses as necessary members of the students' Individual Education Plan (IEP) nor transition team.

The practice model suitable to address the five identified barrier themes developed from the study data analysis is The Whole School, Whole Community, Whole Child (WSCC) model developed by the Center for Disease Control. This model provisions targeted efforts to strengthen sustainable health, education, community agency and organization partnerships with supportive design of a coordinated comprehensive approach to improve educational attainment, improve healthy development and better prepare the students for life. The opportunity for the school nurse to expand their role as community liaisons utilizing the WSCC model is in line with the 2010 Institute of Medicine recommendation for nurses to "practice to the full extent of their education." School Nurses can lead change and advance student health to improve post-school outcomes by initiating innovative transformation of the IEP transition plan to reflect WSCC components.

Three study findings are actionable: Day Program Curriculum; Advocacy Utilization Support; Professional Development. Improvement of Day Program reform is the current work of the federally mandated audit teams of the California state Department of Rehabilitation. The WSCC enhances the effectiveness broadly used education models and supports succinct, whole-school, student focused transition planning initiatives that include school nurse consultation and input. Other vital WSCC components, professional development and team empowerment promote augmentation of education administrators' knowledge of special education legislation and community support matrix resources, better equipping them to support teachers on the front lines, thereby improving parental and student support.



**Abstracts of Poster Presentations**

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**LEADERSHIP DEVELOPMENT**

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**IMPROVING OUTCOMES THROUGH DEVELOPMENT  
OF PROFESSIONAL ACCOUNTABILITY**

*Becky Kopecky*

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**DO YOU RELATE? LEADING NURSES  
ACROSS GENERATIONS**

*Scott S. Christensen*

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**ADDRESSING BARRIERS TO AFTER ACTION  
REVIEWS USING A CARING LEADERSHIP MODEL**

*Claire C. Laurence*

# LEADERSHIP DEVELOPMENT

## Improving Outcomes through Development of Professional Accountability

*Becky Kopecky, MN, BSN, RN  
Chief Nursing Officer  
Nursing Administration  
Providence Hood River Memorial Hospital  
Hood River, OR*

**Background/Significance:** Professional accountability is defined as being responsible for nursing judgments and actions as related to patient care outcomes. Nurses have the ability, and responsibility, to influence outcomes positive outcomes for patients especially when a culture of professional accountability exists. Although professional accountability is considered to be a fundamental part of nursing practice, it is often difficult to instill this value in front line staff.

**Purpose:** The purpose of this project was to decrease fall rates in a critical access facility through development of professional accountability in nurses.

**Methods:** In 2014, the number of patient falls increased on a medical surgical unit. Common cause analysis of these falls identified gaps in applying the facility's Fall Prevention Protocol. Education on the protocol, including assessment of patient risk for falling and appropriate interventions, was provided to all staff members. After the education was completed, patient falls continued and were attributed to the same gaps in applying the protocol. The nurse manager utilized Reasons's Decision Tree for Determining Culpability of Unsafe Acts. This tool provided an objective opportunity to determine if staff performed reckless behaviors. Through the use of this tool, actions of staff were identified as a root cause of patient falls. The result was an increase in staff awareness of how their actions influence patient outcomes. This led to implementation and acceptance of coaching, counseling and performance management. Staff became engaged in the prevention of falls and promoted additional safety interventions, including: discussion of high risk fall patients in shift safety huddles, immediate debrief post fall with manager and staff involvement, visibility of data, interdisciplinary team discussions that led to stocking gait belts in every patient room, clear expectations fall risk safety interventions, team critical thinking and interventions, and additional manager led-orientation to professional accountability.

**Results:** Five patient falls occurred in the medical-surgical unit in first quarter 2015. This has declined to one fall per quarter since January 2016. In addition, scores on annual nurse engagement surveys have remained high. Data from this year's engagement survey will be provided.

**Implications and Significance of the Project for Nursing:** Implications suggest that when nurses take accountability for patient falls and are encouraged to speak up and identify risks, outcomes are improved and patients are safer. Creating clear expectations, nurse leader accountability by being present for team post-fall debrief meetings, having the discussion with individual caregivers about reckless behaviors, and engaging the team in prevention of patient falls have led to improved patient outcomes and nurse accountability.

# LEADERSHIP DEVELOPMENT

## Do You Relate? Leading Nurses across Generations

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*Clinical Operations Director, Nursing Administration*  
*University of Utah Health Care*  
*Salt Lake City, UT*  
[scotts.christensen@hsc.utah.edu](mailto:scotts.christensen@hsc.utah.edu)

**Purpose/Aims:** The purpose of this work was to provide nurse leaders with the knowledge, tools, and skills necessary to lead each generation in the nursing workforce, thereby enabling leaders to build stronger relationships and retain their nursing employees.

**Rationale/Background:** Alarming nurse shortages are just around the corner, with an estimated shortage of one million nurses in the United States by 2022. Optimizing the retention of nursing staff is vital to the long-term success of any healthcare organization. The relationship between nurse leaders and frontline staff is a critical factor for retaining nursing professionals. One barrier to forming this vital relationship is the nurse leader's understanding of and ability to mitigate generational differences. Nurse leaders who master this skill are better equipped to retain and develop their nursing workforce.

**Approach/Methods:** The first step in building a curriculum for developing nurse leader skills and knowledge with regard to generational differences was a thorough literature review. CINAHL, PubMed, Scopus, Business Source Premier, and ProQuest search engines were systematically used to identify relevant articles from nursing, healthcare, and business journal sources.

Based on a synthesis of the literature review, a suite of materials including handouts and a slide presentation were developed as educational and training tools for nurse leaders. Time demarcations, defining moments, values, generational styles, and leadership takeaways were discussed for each generation. One recurrent theme in the literature highlighted the need for effective communication across generations in nursing. For this reason, communication strategies by generation were specifically incorporated in the presentation and handouts.

Three pilot groups of nurse leaders received the initial training and handouts. Based on their formal and informal feedback, materials were modified and finalized.

**Outcomes Achieved:** Pilot group learners were evaluated using quantitative and qualitative approaches, including pretest/posttest surveys and personal interviews (see table below).

Training objectives were met in that pilot participants were able to 1) summarize characteristics of each generation; 2) develop action plans for applying this content to their settings; 3) recall generational characteristics and management strategies three months after initially receiving curriculum.

Sample of Pretest/Posttest Participant Responses. Favorable responses per all responses, shown as a percentage.	Pretest	Posttest
<i>Accuracy of multiple choice answers testing generational knowledge</i>	48%	62%
<i>High self-ranking of generational knowledge.</i>	8%	55%
<i>High self-ranking of comfort level in using generational knowledge to influence coworkers.</i>	42%	70%

**Conclusions:** Effectively leading nurses across generations is an important skill for nurse leaders. This project leveraged best practice data to create generational leadership training resources. Through obtaining and applying knowledge of generational management strategies, nurse leaders are better equipped to support and retain frontline nurses.

Future projects should focus on scientifically measuring the effectiveness of these resources, for example, testing the validity of pretest/posttest questions and by analyzing nurse employee turnover rates.



# LEADERSHIP DEVELOPMENT

## Addressing Barriers to after Action Reviews Using a Caring Leadership Model

*Claire C. Laurence, MS, RN, EMT-P  
Emergency Department Staff Nurse  
Tucson, AZ*

**Purpose:** To describe how the application of the Caring Leadership Model (CLM) can address the organizational and situational barriers associated with consistent and meaningful use of an after action reviews (AAR) in an emergency department setting.

**Description of Theory:** The CLM is described as a marriage of Jean Watson's theory of human caring and Kouzes and Posner's theory of exemplary leadership. It was developed by nursing leaders as a framework to promote high reliability healthcare through the invocation of staff wellness. Core values were established, encouraging leaders to: Always lead with kindness; generate hope and faith through co-creation; actively innovate with insight, reflection, and wisdom; purposely create protected space founded upon by mutual respect and caring; and embody an environment of caring, helping, and trusting for self and others. By adopting this framework, organizational culture could be improved by enabling leadership teams to guide purposeful innovation in an environment of care and trust.

**Concept Analysis Process:** Prior research has identified potential barriers for the use of AARs in an emergency department setting. These barriers can be categorized as either organizational or situational. Organizational barriers included a lack of perceived trust in upper management and lack of a defined plan for an AAR. Situational barriers included lack of available time, staffing dynamics, and a perception of group norms. Solutions to these barriers are proposed by applying tenets from the CLM to promote meaningful, consistent use of an AAR.

**Linking the use of Theory to Application of the Process Model:** The CLM provides a framework by which an organization could improve upon process dynamics and workflow. Tenets of the model that could address organizational barriers include modeling kindness, generating hope through co-creation, and promoting innovation and self-reflection; engaging staff to assist with development of an after action review protocol would formally introduce a plan while addressing a perceived lack of management interest in staff wellness. Conducting an AAR without the presence of formal leadership could also promote trust in the management process; it could reflect that leadership has respect for the staff's need to openly and truthfully engage in an environment that they perceive as safe. Situational barriers of time scarcity, staffing dynamics, and the perception of norms could be mitigated through embracing the idea that staff need a consistent and timely review of a critical incident in order to adequately reflect and innovate their practice. These ideals can be further achieved through the use of an AAR itself, which has been found to improve interdisciplinary dynamics while facilitating ventilation of feelings and a return to personal and department homeostasis.

**Conclusions:** The literature describes an AAR as an essential tool to improve staff communication, department morale, and patient outcomes. The application of the CLM could be utilized to address barriers that would otherwise prevent its development and consistent utilization. Adopting this timely learning tool within this context could promote a safe environment where the individual can engage in self-reflection and gain valuable feedback without fear of reproach.

## Abstracts of Poster Presentations

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### MATERNAL HEALTH

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UTERINE CONTRACTION PARAMETERS BEFORE  
AND DURING THE PRE-EPIDURAL FLUID BOLUS

*Rebecca D. Benfield, Du Feng, Jan Salstrom,  
Melydia Edge, Denise Brigham, Edward R. Newton*

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THE IMPACT OF LABOR AND DELIVERY  
NURSE STAFFING ON BIRTH OUTCOMES

*Barbara L. Wilson*

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FACTORS INFLUENCING THE CONTINUATION OF  
BREASTFEEDING IN PRETERM INFANTS IN THE NICU

*Deborah L. Pollard*

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BABY & WE: TOBACCO CESSATION IN WOMEN'S,  
INFANTS, AND CHILDREN'S NUTRITION PROGRAM

*Jo Ann Walsh Dotson, Sterling McPherson, Kawkab Shishani*

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HEMOSTATIC CHANGES DURING PREGNANCY  
ASSESSED VIA THROMBOELASTOGRAPHY

*Leighton "Murphy" Anderson*

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PERINATAL MOOD AND ANXIETY DISORDERS:  
CONSIDERATIONS IN MILITARY FAMILIES

*Semira Semino-Asaro, Cynthia D. Connelly, Theresa Nguyen,  
Alison Reminick, Amber Rukaj*

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NURSE ATTITUDES TOWARDS CHILDBIRTH: A WAY  
TO MEASURE PERINATAL NURSING QUALITY?

*Martha Shaw Levine, Nancy K. Lowe*

**MEDICATION COMPUTATIONS & PROBLEM-SOLVING  
SKILLS IN MATERNAL-NEWBORN STORY PROBLEMS**

*Sandra A. Banta-Wright, Martha Driessnack, Kristine Nelson*

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**ADDRESSING PREVENTIVE ORAL HEALTH FOR PREGNANT  
WOMEN & CHILDREN AGE 0-6 IN PRIMARY CARE**

*Abrianna Lee Johnson*

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**CAN RESIDENCY IMPACT MOTIVATION AND PHYSICAL  
ACTIVITY HABITS IN POSTMENOPAUSAL WOMEN?**

*Lori S. Fitton, Kim S. Astroth, Anne. E. Cox, Caroline Mallory, Denise Wilson*

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**THE EFFECTS OF PHYSICAL EXERCISE ON FALL  
PREVENTION IN ELDERLY: A SYSTEMATIC REVIEW**

*Melissa Aguayo, Araceli Cabalum, Lucetta Chiu,  
Nazeli Hakobyan, Angela Lim, Vanessa Sanchez, M. Shaheen*

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**RECRUITMENT STRATEGIES FOR A STUDY ON  
RURAL DWELLING OLDER ADULTS AND DEPRESSION**

*Lillian Jones, Mary A. Nies*

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**RECRUITMENT STRATEGIES FOR UNDERSTANDING  
SOCIAL CONNECTEDNESS OF RURAL OLDER ADULTS**

*Allison Findlay, Mary A. Nies*

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**SOCIAL MEDIA USE AND DEPRESSION AMONG  
MIDDLE AGE AND OLDER U.S. ADULTS**

*Ariz Amoroso Guzman, Janet Mentes, Mary-Lynn Brecht*

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**AUTO-PROMPTING FOR TASK COMPLETION  
IN PERSONS WITH DEMENTIA**

*Roschelle L. Fritz, Rachel Braley, Catherine Van Son, Maureen Schmitter-Edgecombe*

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**FALLS AND SOCIALLY ISOLATED OLDER ADULTS**

*Janet S. Pohl, Barbara B. Cochrane, Karen G. Schepp, Nancy F. Woods*

# MATERNAL HEALTH

## Uterine Contraction Parameters before and during the Pre-Epidural Fluid Bolus

*Rebecca Benfield, CNM, PhD*

*Du Feng, PhD*

*Jan Salstrom, CNM, MSN*

*Melydia Edge, CRNA, MSN*

*Denise Brigham, RN, MSN*

*Edward R. Newton, MD*

**Background:** Immersion to the chest (hydrotherapy) in term labor results in decreased contraction frequency and the duration is positively correlated with percent plasma volume shift. Significant decreases in plasma vasopressin and oxytocin also occur (Benfield, et al, 2010). Immersion to the neck produces central volume expansion similar to that induced with 1.5 L of saline infused intravenously within 21 min (Johansen, 2000). Might the intravascular pre-epidural fluid bolus used to offset maternal hypotension during epidural analgesia affect uterine contractility similarly to immersion?

**Objective:** We compared uterine contraction parameters including Montevideo Units (MVUs), frequency, duration, peak amplitude and resting tone at baseline (BL) and during the intravascular pre-epidural fluid bolus (Bolus) in laboring women at term with intrauterine pressure catheter (IUPC) monitoring. IUPC instrumentation provides intensity measurement.

**Methods:** Retrospective review of 3025 charts, identified 10 healthy women (*Characteristics:* 8 Nullipara, 2 Multipara, Race/Ethnicity 2 White, 6 Black, 2 Hispanic, Mean: Age= 25 yrs, Cervical dilation= 4 cm) with IUPC monitoring prior to and during the pre-epidural intravascular fluid bolus who met study criteria (exclusion of magnesium sulfate therapy or chorioamnionitis). All women received a constant dosage of Pitocin during both epochs (Pitocin mu/ml mean = 12.8 range = 2-40). The BL epoch began up to 60 min prior to bolus initiation: the bolus epoch occurred during the 1 L Lactated Ringers infusion. Epoch length varied (all had at least 4 contractions). Mitutoyo Absolute Digimatic Calipers were used to measure duration. Amplitude (mmHg), i.e. intensity, and resting tone was extracted from the monitor strip grid. Statistical analysis used Wilcoxon signed rank tests.

**Results:** Mean Contraction Intensity is higher in the bolus epoch (M=70, SD=18) compared to BL (M=63, SD=15), resting tone is higher in the bolus epoch (M=25, SD=8) compared to BL (M=23, SD=6), MVU is higher in the bolus epoch (M =164, SD=69) compared to BL (M=149, SD=66), resting duration is lower in the bolus epoch (M=56 , SD=41) compared to BL (M=63, SD=40) while contraction duration in the bolus epoch (M=73, SD 16) and BL epoch (M=73, SD 19) and frequency in the bolus epoch (M=5, SD.91) and BL epoch (M=5, SD= 1) remained unchanged in women whose Pitocin dosage remained the same dosage in both epochs. However, no significant difference at the .05 alpha level was found between the bolus epoch and BL in this group of women for any of the outcome measures, based on Wilcoxon signed rank tests of epoch means.

**Conclusion:** Unlike hydrotherapy, contraction frequency was unchanged, uterine contraction intensity, resting tone and MVU were increased with the bolus, and resting duration decreased although not significantly. Despite a small sample size, changes trend toward the possibility that the intravascular fluid bolus increased myometrial perfusion and improved metabolic function in the contracting and resting state. Future research will focus on this discrepancy using more sensitive instrumentation and a larger sample size. Hydration may prove an important first line therapy for nurses and obstetrical care providers to increase contraction intensity in healthy women at term gestation.

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**Funding:** East Carolina University Department of Obstetrics and Gynecology Small Grant Award.

# MATERNAL HEALTH

## The Impact of Labor and Delivery Nurse Staffing on Birth Outcomes

*Barbara L. Wilson, PhD, RN  
Associate Professor and Associate Dean of Academic Programs  
College of Nursing  
University of Utah  
Salt Lake City, UT*

**Purpose:** This study will use an established patient safety indicator (PSI) (newborn intensive care unit [NICU]) from the Agency for Healthcare Research and Quality (AHRQ) and one of AHRQ's Inpatient Quality Indicators (IQI) (primary cesarean births) to examine the relationship between labor and delivery (L&D) nurse staffing and birth outcomes. Specifically, this study will determine (a) the influence of L&D nurse staffing on the likelihood of cesarean birth in term gestation ( $\geq 37$  weeks) low-risk first-birth women with a single fetus in a vertex (head first) position, and (b) the influence of L&D nurse staffing on the likelihood of NICU admissions in term gestation low-risk first-birth women.

**Background/Conceptual Model:** Numerous studies have identified a relationship between nurse staffing levels and adverse outcomes for acute-care medical and surgical patients including hospital-acquired pressure ulcers, pneumonia, patient falls, medication errors, and failure to rescue. Because these unintended results reflect the structure, process, and outcomes of nursing care, they have been referred to as 'nurse-sensitive outcomes.' Inadequate nurse staffing levels create risks and hazards that lead to increased medical errors, prolonged lengths of stay, and increased morbidity and mortality for certain patient populations. However, little is known about what constitutes 'nurse-sensitive outcomes' in obstetrical (OB) patients, and even less about the influence of nurse staffing on adverse OB events. To help define and measure adverse hospital events, AHRQ developed IQIs which reflect hospital care including the utilization of procedures that have the potential for overuse, underuse, or misuse, such as primary cesarean births. AHRQ also developed PSIs to screen for problems that patients experience as a result of being in the healthcare delivery system, making them amenable to changes in processes or procedures such as NICU admissions. Just as hospital-acquired pressure ulcers constitute an adverse event sensitive to nurse staffing, an unintended cesarean birth or NICU admission may also constitute outcomes that are sensitive to nurse staffing.

**Methods:** Using Donabedian's Structure – Process – Outcomes model, I am using a descriptive model-testing design to examine the relationship between L&D nurse staffing and birth outcomes using administrative data from 12 hospitals in the Southwest for a one-year period. Nurse staffing, measured in productive nursing hours, and patient care hours will be examined for each hospital, with analysis at three levels: (a) patient level; (b) by month (we will examine productive nursing care hours and total L&D patient care hours by month, which will be matched with the maternal and newborn outcomes for that same month); and (c) hospital level.

**Results:** This study is currently underway.

**Implications:** Understanding the link between L&D nurse staffing and maternal / neonatal well-being is fundamental to enhancing safe birth outcomes in the childbearing family. Cesarean births have a long-term impact on maternal reproductive health, placing women at increased risk of adverse outcomes in succeeding pregnancies and contributing significantly to escalating health care costs. If the relationships indicate these outcomes are staffing sensitive, it will allow further studies that examine whether manipulating staffing levels can mitigate adverse birth outcomes.

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**Funding:** 1R03–HS24607-01 through AHRQ.

# MATERNAL HEALTH

## Factors Influencing the Continuation of Breastfeeding in Preterm Infants in the NICU

*Deborah L. Pollard, PhD, RNC, CNE, IBCLC  
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Aurora, CO*

**Introduction/Summary/Background/Significance:** One notable challenge for the early preterm infant is initiating and establishing feeding and nutrition that will optimize their growth and development. Infants born between 26 and 33 weeks' gestation lack the physiologic maturity to feed directly from the breast. Therefore, their mothers must use electric breast pumps to collect and store their milk. Mothers begin pumping within 24 hours of delivery; however, research findings suggest that many of the mothers stop pumping in the early weeks following delivery. Mothers often report challenges with maintaining a pumping schedule and perceptions of low milk supply, both of which contribute to early termination of breastfeeding within the first few weeks. There are known positive outcomes for preterm infants who receive human milk. However, little is known about factors that may impact the percentage of human milk that preterm infants receive during their hospital stay.

**Purpose/Aims/Objective:** The purpose of this prospective, correlational study was to examine maternal variables that may impact the amount of milk volumes and continuation of breastfeeding in the preterm infant admitted to the NICU.

**Methods/Design/Approach:** An *a priori* sample calculation was completed to determine the recommended sample size of 50 participants for this correlational study design. Mothers were invited to participate if they were 18 years of age or older, delivered an infant between 26 and 36 weeks' gestation who was admitted to the NICU, was able to speak and read English, reported an intent to breast feed, and had no contraindications to breastfeeding.

Participants completed data collection instruments at three data points: 24-48 hours following delivery (Demographic Form, the modified Breastfeeding Self-Efficacy Scale–Short Form (BSES-SF) among mothers of ill or preterm infants, and the Infant Feeding Intention Scale); and at 2 weeks postpartum and at 4 weeks postpartum (Breastfeeding Status Form and BSES-SF). Infant intake and weight data was collected via chart review from admission to discharge. Participants were asked to complete a Pump Log for 14 days.

The level of significance set for data analysis was  $p \leq 0.05$ . All study variables were summarized using descriptive statistics (percentages for categorical variables; means and standard deviations for continuous variables). Nonparametric statistics were used to compare proportional variables and parametric ANOVA, Pearson correlation and logistic regression were used to compare continuous variables.

**Results/Outcomes:** Results are pending completion of data analysis in September, 2016.

**Implications for Practice/Conclusions/Applications:** Implications for practice pending completion of data analysis in September, 2016.

## MATERNAL HEALTH

### Baby & We: Tobacco Cessation in Women's, Infants', and Children's (WIC) Nutrition Program

*Jo Ann Walsh Dotson, PhD*

*Sterling McPherson, PhD*

*Kawkab Shishani, PhD*

**Purpose/Aims:** The purpose of this pilot study is to examine the impact of targeted education, biochemical monitoring and incentives on tobacco cessation in pregnant and postpartum women and their families.

**Rationale/Conceptual Basis/Background:** Tobacco use in pregnant women is strongly associated with low birth weight and premature births, which in turn accounts for between 20-40% of infant mortality in the US each year (M. Fiore, 2008). Recent research documents that the risks associated with tobacco use in pregnancy are not limited to birth outcomes alone; infants exposed to tobacco smoke during their first year of life are at greater risk of developing acute and chronic respiratory disease and nicotine addiction as adults (Buka, 2003). Tobacco use recidivism in the postpartum period is common, with 60% of women who quit tobacco use during pregnancy resuming to smoke by 6 months postpartum, and 80% by 12 months postpartum (Yunsheng, Goins, Pbert, & Ockene, 2005). Yunsheng and others also reported that tobacco use by partners was a predictor of tobacco use resumption in the postpartum period. Existing research revealed that tobacco cessation efforts that target pregnant and postpartum women and their partners can positively impact tobacco cessation and prevent recidivism (Ashford, Hahn, Hall, Rayens, & Noland, 2009). This study contributes to the literature by examining the impact of interventions on women and their partners and explore the feasibility of the approach in the WIC setting. Conceptually, the study employs the Multiple Exposures Multiple Effects (MEME) model. The model depicts the interplay between environmental exposures and child health outcomes (Briggs, 2003).

This pilot study uses a prospective experimental design examining the effectiveness of targeted tobacco cessation education for pregnant women and their family members/partners coupled with biochemical monitoring linked to small incentives rewarding pregnant and postpartum women and their partners for participating in the program prenatally and documented tobacco cessation in the postpartum period. The program used include four face to face smoking cessation training and biochemical testing during the prenatal period by a trained research assistant, and monthly training/support contacts in the first twelve weeks postpartum, accompanied by biochemical testing.

**Results:** Data collection is ongoing, with final data due to be collected in December 2016. Eighteen couples were recruited, receiving up to seven contacts over a 5-6 month period. Analysis will examine the main effect on tobaccos use, measured by CO, cotinine and self-report in the dyad members, as well as differences based on co-variates of perceived stress and depression. Initial analysis demonstrates the need for effort in the readiness to quit tobacco as measured by the Tobacco Stages of Change Tool.

**Implications:** The study is a joint effort between the Washington State University and the regional WIC program. The program was interested in incorporating biochemical testing into their tobacco cessation efforts in the clinical setting, and partnered with the university in order to examine the efficacy of the intervention. The study will also inform gap in literature that exists to verify self-reported tobacco use in pregnancy with biochemical verification.

# MATERNAL HEALTH

## Hemostatic Changes during Pregnancy Assessed via Thromboelastography

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**Purpose/Aim 1:** To determine if known gestational related changes in coagulation factors of pregnant women living at >5000 feet altitude differ from established norms found at sea level.

**Aim 2:** To explore the association among maternal antecedents including advanced maternal age, increased BMI, ethnicity as well as external factors such as induction of labor and duration of exposure to oxytocin to the incidence and severity of postpartum hemorrhage (PPH).

**Background:** PPH is the leading cause of maternal mortality. The direct pregnancy-related maternal mortality rate in the United States is approximately 7-10 women per 100,000 live births and national statistics suggest that approximately 8% of these deaths are caused by PPH. (Smith, 2013). PPH is an important and often preventable cause of maternal morbidity and mortality worldwide. (Burtelow, 2007). Current trends in obstetric practice (increased cesarean section rate and decreased vaginal birth after cesarean) have resulted in increased prevalence of placental anomalies (both Previa and accreta), placing peripartum hemorrhage as one of the most important potential causes for maternal mortality. (Pacheco, 2012).

**Methods/Design:** This is an observational study investigating the effects of altitude on gestational related changes that impact coagulation factors. After obtaining IRB and ethics committee approval we will enroll 300 pregnant women age 15-45 that meet inclusion criteria. Standard coagulation studies (PT,PTT,INR), hemoglobin/hematocrit, fibrinogen and Thromboelastogram (TEG) will be drawn at four time points (15-18 weeks gestation, 24-28 weeks, admission to labor and delivery and within 16 hours postpartum) to highlight pregnancy related changes in clotting factors. Exclusion criteria: known abnormal placentation, clotting abnormalities, multiple gestations, fetal anomalies, diabetes, psychotic disorders, incarcerated patients, cardiovascular, renal, liver disease, NSAID use within past two weeks, and blood transfusion within past two years as reported by study subjects.

**Discussion:** Maternal morbidity and mortality has been negatively impacted by the increasing rate and severity of PPH, which acutely transitions maternal blood from a known state of hypercoagulability to one of profound blood loss and consumptive coagulopathies. Utilization of the TEG can improve assessment and treatment of massive obstetrical hemorrhage in a goal directed fashion minimizing the draw on the precious blood bank resources.

**Implications:** The implications of my research project will be to improve available knowledge regarding the impact of altitude on gestational related changes in coagulation ability of the maternal patient as compared to available data previously obtained at sea level. This information will be used as we investigate maternal and external antecedents to PPH and possible associations to the severity and incidence of PPH in the Denver area. The extended goal of my proposed research is to develop a risk stratification tool that will be used in the antenatal period to improve our risk assessment screening and ultimate planning of care for high risk patients in an attempt to positively impact maternal morbidity and mortality.



# MATERNAL HEALTH

## Perinatal Mood and Anxiety Disorders: Considerations in Military Families

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**Purpose/Aims:** The aim of this study was to explore the unique experiences of military spouses with regard to perinatal mood and anxiety disorders (PMADs). The focus of this investigation was on examining potential barriers and/or facilitators to the recognition and/or treatment of these disorders in military families.

**Rationale:** There is a paucity of research investigation that focuses on the unique needs and experiences of military families with regard to PMADs. As with the civilian population, PMADs are not well recognized and are undertreated despite indications that mental health disorders are a common complication of the perinatal period. Military families have additional challenges with regard to deployment that can make parenting transitions even more stressful than they inherently are, necessitating consideration of the unique experiences of military families with regard to PMADs.

**Methods:** Focus Groups were utilized to explore barriers and facilitators to the recognition and treatment of PMADs in this population. Military spouses diagnosed with a PMAD were recruited at an outpatient reproductive mental health clinic. The focus groups were recorded and transcribed and the data was analyzed using grounded theory techniques. Emerging themes and patterns evident in the data were validated via consensus, influencing further sampling. A conceptualization of PMADs as experienced in this population resulted from linkages between emerging themes and patterns in the data. This conceptualization will inform further inquiry.

**Results:** Several unique barriers and facilitators with regard to PMADs in military families have been identified. Repeated spousal deployment, separation from usual sources of support (family, friends), a perceived lack of connection with other military spouses, and an emphasis on stoic acceptance are all factors that make the parenting transition more challenging in military families, thus contributing to contextual considerations with regard to PMADs as they are experienced in military families.

**Implications:** It is imperative that clinicians, educators, and researchers across mental health and maternal-child disciplines heighten their sensitivity to and awareness of the unique needs and concerns of this population. Early intervention is critical in successfully recognizing and managing the course of PMADs in both civilian and military populations. Given the contextual considerations discussed, it is clear that further inquiry into the needs of military families with regard to PMADs is required. Greater understanding of how PMADs are experienced in this population can inform health care service delivery models that are focused on the mental health needs of this population.

**Funding:** Provided by University of San Diego Hahn School of Nursing & Health Science, Beyster Institute of Nursing Research.

# MATERNAL HEALTH

## Nurse Attitudes towards Childbirth: A Way to Measure Perinatal Nursing Quality?

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**Objective:** Researchers have found that nursing care can influence patient outcomes during childbirth. The attitudes and beliefs of labor and delivery nurses may affect their care decisions and interventions. To conduct further research on nursing care and patient outcomes, a reliable and valid instrument to measure nurse attitudes and beliefs about childbirth is needed.

**Design/Setting:** The Nurse Attitudes and Beliefs Questionnaire-Revised (NABQ-R) contains 42-items in 5 theoretically derived domains. Each item is scored with a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). A higher score indicates more positive attitudes towards physiologic birth.

**Methods:** This study was an online survey that provided a psychometric test of the NABQ-R. An e-mail invitation containing a link to a secure electronic survey site was sent to a randomly selected sample of 4,000 members from the Association for Womens' Health Obstetrical and Neonatal Nurses (AWHONN) that met inclusion criteria. The inclusion criteria for participation were being a licensed Registered Nurse, over 18 years of age, and currently practicing at least 20 hours per week in the labor/delivery setting. AWHONN members from Colorado were excluded since these members were the targeted population for a pilot study of the NABQ-R. The survey was managed by REDCap, a web-based application designed exclusively to support data capture for research studies.

**Participant Demographics:** Of the 4000 invitations sent, there were 681 total responses, which represents a response rate of 13.6%. However, fully completed surveys were returned from 446 labor/delivery nurses. The following demographic data represents the entire sample (N=681). The participants had a mean age of 47.3 years and 18 years of perinatal nursing experience. Most of the participants were female (98.8%) and 89.5% Caucasian (non-Hispanic). The majority of the participants held baccalaureate (54.4%) or graduate (39.3%) degrees. The majority of participants or their partners (84.1%) had given birth, breastfed an infant (76.1%), and described their birth experiences as positive (86.2%). However, 11% of the participants described their birth experiences as negative or traumatic. Finally, 15.1% of all respondents have attained clinical specialty certifications. The most common certifications were Inpatient Obstetrics (43.8%) and Certification in Electronic Fetal Monitoring (43.8%). In addition, 6.4% of the participants were advanced practice nurses (APRNs).

**Participant's Workplace Characteristics:** The U.S. was divided into geographic regions based on the U.S. Census Bureau's regions. Regions were used rather than asking participants to select their specific state in order to allow participants to maintain more anonymity. Participants represented all of the nine geographic regions with the largest proportions coming from the South Atlantic states (17.3%), the Pacific West states (14.5%), the East North Central states (13.5%), the West North Central states (11.4%), and the West South Central states (10.9%). The overwhelming majority of the participants work in a setting that uses an LDR configuration (70.1%) and are located in urban (42.6%) or suburban (34.1%) locations. Furthermore, most of the participants work in either a community hospital (62.1%) or teaching hospital (34.8%) setting. The most common workplace acuity levels were level III (34.5%) and level II (31.5%). The most prevalent type of unit nurse-practice models were 47.8% RN-managed labor model, followed by 24.6% RN-MD on-site model and 23.9% academic/teaching model. Finally, other aspects of participants' workplaces included 24.7% with Magnet designation, 26.3% with Baby Friendly certification, 24.7% with a religious affiliation, and 68.6% that were not-for profit organizations.

**Results (Data Analysis):** The NABQ-R scores ranged from 82–156 with a mean of  $121.99 \pm 12.77$ . Cronbach's  $\alpha$  internal consistency reliability estimate was .90. Analysis of variance demonstrated a significant effect of education on NABQ-R scores such that nurses with graduate degrees had significantly more positive attitudes than nurses with baccalaureate ( $p = .003$ ) or diploma/associate degrees ( $p = .002$ ). To study construct validity, an exploratory factor analysis (EFA) using principal component analysis and varimax rotation was conducted. Factors with an eigenvalue  $\geq 1$  were retained and the scree slope suggested a 5-factor solution. Next, a varimax rotation was used with 5 specified factors that accounted for 46.11% of the variance with all items loading on at least one factor. We named the factors: (1) Women's Experience of Birth; (2) Women's Autonomy; (3) Medical Model Conflict; (4) Breech Safety; and (5) Intervention Influence.

**Conclusion/Implications for Nursing Practice:** The development of a theoretically and psychometrically sound instrument to measure nurse attitudes toward physiologic birth will foster additional research to expand our understanding of how nurse attitudes affect the process and outcomes of labor and birth.

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# MATERNAL HEALTH

## Medication Computations & Problem-Solving Skills in Maternal-Newborn Story Problems

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**Introduction:** The ability to do quick and accurate medication computations is an essential skill for any nursing student. Various teaching strategies have been used to address the challenge of medication computation including in-class lectures, worksheets, and more recently Powerpoint and CD-ROM tutorials. Yet, many undergraduate nursing students continue to struggle with medication calculations. To facilitate continued medication computation skills, a different teaching strategy using story problems that integrated medication computation and problem-solving skills was developed to reinforce student's ability to do accurate and quick medication computations during their maternal-newborn clinical rotation.

**Purpose:** Describe the creation and use of maternal-newborn story problems with medication computation and problem-solving skills.

**Implementation:** Over the course of the semester, students were provided with short story problems focused on maternal-newborn nursing scenarios that required medication computation and problem-solving skills. At first, the scenarios were straight forward with content that incorporated basic cognitive structuring. However, as the weekly story problems evolved, the story problems became more complex and required advanced logical reasoning to determine essential information that was needed versus nonessential information for medication computation.

**Example – newborn:** Baby boy Bryant was born at term to a mother who spiked a temperature to 39.5<sup>0</sup>C one hour prior to delivery. Now at 4 hours of age while in the Family Birth Center, he has a respiratory rate of 80 breaths per minute, a heart rate of 170 beats per minute, and a temperature of 38<sup>0</sup> C. His CBC revealed a left shift with 45 bands and a I:T ratio > 0.2. The nurse practitioner wants to start ampicillin at 50mg/kg/12 hours. He weighs 3.5 kg. Ampicillin comes in a vial of 250mg/ml. How many ml of ampicillin should he receive every 12 hours? Round to the nearest tenth. Do not include units.

**Evaluation:** At first, students openly expressed frustration with the maternal-newborn story problems that integrated medication computation and problem-solving skills. By the end of the rotation, students had embraced the story problems as a form of active learning and came to appreciate their value to further increase their medication computation and problem-solving skills. More importantly, they overwhelming (n = 42, 100%) wanted more of them!

**Discussion:** This activity was developed in response to the current shift toward more learning activities and experiences that focus on student-centered learning. As faculty modify their teaching to be more student-centered, different strategies that promote student growth, self-confidence, and movement toward autonomy in their professional role as a registered nurse illustrate how faculty are meeting this challenge.

# MATERNAL HEALTH

## Addressing Preventive Oral Health for Pregnant Women & Children Age 0-6 in Primary Care

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**Background:** About 40% of pregnant women independent of race have a varying form of periodontal disease [1]. Pregnant women having multiple hormone fluctuations while pregnant, this creates the optimal environment for the woman to experience dental decay and other gum disease; this may have a negative impact on the pregnancy itself [2]. The promotion of the early detection and treatments of periodontal disease in young women before and during pregnancy may be beneficial especially for women at risk.

**Aim:** The purpose of this project will be to educate providers in a rural primary care clinic on the importance of oral health care in pregnant women and parents of children ages 0-6. The aims of the project are: 1. Provide oral health education to providers who see pregnant women in the primary care practice clinic and provide educational materials on best practice recommendations for oral health during pregnancy. 2. Promote the early detection, treatment, and education of periodontal disease in women before and during pregnancy may decrease adverse pregnancy outcomes and early childhood caries. 3. Create a simple and seamless referral process for the at risk pregnant women to seek the appropriate dental care within her community. 4). Facilitate practice improvement for oral health care for pregnant women per the American Dental Association standards. These aims address the absence of education regarding oral health among the healthcare professions and communities.

**Sample:** The sample will consist of 50 child-bearing aged females, pregnant females, and children age 0-6. Seven primary care providers and eight registered nurses at a local family practice clinic at the office at Bozeman Clinic.

**Methods:** 1). Author will give a pretest on best practice recommendations to physicians and staff and then provided oral health care education to them. After the education physicians and staff will take a posttest based on content from the educational seminar; 2). Author will solicit ideas from the providers and staff about ways they can increase awareness of oral health in their practice; 3). Staff will document the completion of dental health history forms by patient and educational handouts provided to patient

**Results:** Seven out of eight nurses who completed a pre and posttest survey titled "Provider test." A twenty-seven percent increase in the number of correct responses to a twenty question survey was noted following oral health education.

**Conclusion:** Preventive oral health education in the primary care clinic related to oral health behavior changes and screenings may impact the pregnant woman's unborn child as well as her current children in a positive manner. There is a great need for oral health education to both providers and pregnant women. Cooperation between obstetricians or general practitioners and periodontists or dentists should be developed. Current research on the value of perinatal oral health education and perinatal dental care is needed.

# MATERNAL HEALTH

## Can Residency Impact Motivation and Physical Activity Habits in Postmenopausal Women?

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**Purpose:** The purpose of this research is to explore the association of urban or rural residency with exercise behavior and motivation in postmenopausal women.

**Background:** Osteoporosis, a progressive deterioration of bone microarchitecture, is characterized by decreasing bone mass, increased fragility, and susceptibility to fracture. Approximately 53 million Americans are osteoporotic, with Caucasian postmenopausal women at highest risk. Lifestyle choices such as exercise impact bone health. Healthy People 2020 recommend increasing physical activity among Americans, noting 80% of adults do not meet the recommended guidelines for exercise. The American Geriatric Society lists exercise as one of the most efficacious interventions for decreasing falls in community living adults, citing moderate to strong evidence that exercise for older adults lowers the risk for hip fracture while increasing bone density. Despite the benefits of exercise on bone health, many at risk for fractures do not exercise regularly. Specifically, women are less likely than men to exercise, with participation in exercise decreasing as women age. Rural Americans are more inactive than urban, with rural postmenopausal women in particular more sedentary.

**Theoretical Framework:** Self-Determination Theory is a social cognitive theory proposing humans have a proclivity toward active engagement within their own psyches, other humans, and society. These experiences are integrated optimally when needs for autonomy, competence, and relatedness are met, thereby, influencing behavior intention and motivation.

**Methods:** This descriptive study explored responses from a convenience sample of 110 rural, and 57 urban Midwest postmenopausal women. The Basic Needs Satisfaction Scale in Exercise measured independent motivation variables of autonomy, competence, and relatedness. The International Physical Activity Questionnaire measured the dependent variable of physical activity. Data analysis will include frequencies, t-tests, Pearson's, and ANOVA. Descriptive statistics describe sample characteristics.

**Results:** The majority of women are Caucasian with a mean age of 68. Data analysis is currently in progress.

**Implications:** Nursing is a privileged profession with an opportunity to influence lifestyle choices and behavior patterns of patients. This research is intended to increase understanding regarding residency, motivation, and exercise behavior in postmenopausal women, those at high risk for osteoporotic fractures.

This study may provide guidance for future research and nursing interventions relating to residency, physical activity behavior, and bone health in postmenopausal women.

# MATERNAL HEALTH

## The Effects of Physical Exercise on Fall Prevention in Elderly: A Systematic Review

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**Purposes/Aims:** This study aimed to examine the evidence related to the effectiveness of physical exercise in preventing falls in elderly population.

**Background:** The elderly population is a vulnerable population as they are more susceptible to diseases and injuries, but falls are even greater threats to the elderly because it can reduce their ability to be independent. Each year 2.5 million older people are treated in emergency departments for fall injuries, causing serious injuries such as head or hip fracture. The effect of exercise on fall prevention in the older population remains an important topic for exploration in the safety of patients. Numerous studies have reported the prevention of falls through older adults.

**Methods:** Databases used to yield studies comparing exercise to fall prevention include PubMed, Google Scholar, CINAHL, and MEDLINE up to August 2016 without language restriction. We included systematic and meta-analysis randomized controlled trials that examined the efficacy of physical exercise in older adults. The assessment of the methodological quality of both randomized and nonrandomized studies was done with the checklist of PRISMA (2009). The primary outcome measure was the reduction in the rate of falls.

**Results:** Fifteen randomized controlled trials involving 40-4500 participants were included, all of which examined the implementation of one or more physical exercise program in older people. The systematic review showed that the majority of articles resulted with a significant effect in preventing falls in older adults with the implementation of a fall prevention program (relative risk [RR] 0.78, 95% CI 0.71, 0.86) and the risk of falling by 17% (RR 0.83, 95% CI 0.72, 0.97).

**Conclusions/Implications:** The present analysis suggests that physical exercise has a positive effect on preventing falls in older adults. Further studies with focus on physical exercise as a sole intervention will be required to determine the long-term effects on fall prevention. Exercises such as Tai Chi aforementioned help make legs stronger and improve balance in the elderly. Different exercise methods should be explored and tested in order to determine the most effective way in preventing falls. Since exercises have proven to help reduce fall rates, exercises should also be included in one of the fall prevention tools in facilities, which can be facilitated by physical therapists or other medical staff. It is also important to stay consistent with exercise programs so that fall prevention can be maintained in the facilities. The healthcare team should also educate, communicate and show commitment to each other in utilizing this fall prevention tool.

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# MATERNAL HEALTH

## Recruitment Strategies for a Study on Rural Dwelling Older Adults and Depression

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**Background:** Rural populations, due to many factors, have less resources for mental health promotion, and consequently, higher suicide rates. There is a great need for nursing interventions that promote mental health and wellness in rural populations, especially for older adults living in these communities.

**Objective:** This presentation discusses the strategies being used to recruit volunteers for an ongoing nursing study to determine if a life story nursing intervention decreases the risk for depression in rural community dwelling older adults. The purpose is to inform researchers of recruitment barriers being encountered and describe strategies being employed in this study to increase the volunteer sign-up rates.

**Method:** A review of peer-reviewed literature from 2010 to 2016 was conducted on research recruitment barriers in rural populations and suggested strategies to facilitate recruitment, and then compared to the recruitment challenges being currently experienced in this study. The available literature cites costlier and lengthier recruitment times for rural areas as compared to urban areas. In addition, long travel times between rural sites, rural culture, and the stigma related to this study's focus on mental health have posed additional barriers for this study.

The major facilitator to recruitment discussed in the literature is familiarity with the people and culture of the rural area. Obtaining information about the community facilities and the rural area, as well as connecting with a local person can help increase recruitment numbers. For this research study, recruitment is being conducted in rural and remote towns of populations less than 20,000 that have senior or community facilities with a minimum of 20 older adult visitors daily. The goal of the study is 16 groups with eight groups per treatment condition (intervention and control) for a total of 64 participants. Participants are qualified for the study by passing a screen for dementia and having a score of 4 or greater on the geriatric depression scale.

**Results:** Available literature concurs with the findings from this study to date regarding barriers to recruitment. Besides distance, time, and cost, additional barriers to recruitment in this study include: suspicion or confusion regarding the research even with detailed information provided; unwillingness to give out personal information or sign study consents; and, unwillingness to take the time to fill out the questionnaires or take part in the intervention. The major facilitators for this on-going study include: having senior center staff on board to help recruitment by posting the study recruitment dates in the monthly activities calendar and making announcements and directing older adults to the recruitment staff and table; placing eye-catching photos of movies and stars from the 1940-60's around the recruiting table to increase curiosity about the study; and, providing incentives such as free gifts and raffle tickets for a gift cards visibly displayed on the recruitment table.

**Conclusion:** Strategies such as tailoring the recruitment strategy to the population being studied have been cited in the literature as a way to increase volunteers for studies in rural areas and in recruiting for this study.

# MATERNAL HEALTH

## Recruitment Strategies for Understanding Social Connectedness of Rural Older Adults

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**Background:** Rural older adult populations are growing, and understanding rural health needs has gained national importance, yet research is lacking in this vulnerable population. Recruitment of rural older adults can be challenging due to climate and geography, transportation limitations, and the physical and cognitive changes of aging. Rural older adults can be distrustful of ‘outsiders’ and of research in general. Tailoring research strategies to the characteristics of rural older adults within the context of a specific research area is key to meeting participation goals, and building future research partnerships.

**Purpose:** Discuss recruitment strategies and procedures for older adult populations participating in a social networking use and social connectedness research study in rural Southeast Idaho counties.

**Method and Sample:** Seven rural counties were identified using the USDA Economic Research Service Rural-Urban Continuum Codes (RUCCs) 4 to 9, with the goal to recruit 350 participants. Recruitment posters and flyers were tailored by color, font size, and wording for rural older adults. The Southeast Idaho Resource Directory provided contact information for introductory emails and phone calls to rural senior centers. Recruitment dates were determined in consultation with the directors, who posted notices in senior center newsletters, and placed flyers at the entrance to the center. Flyers were sent with meal program trays, asking home-bound individuals to fill out surveys at home or a preferred location. A large poster was set up in a designated area, and questionnaires were available on individual clipboards to hand out to willing participants. The investigator dressed in casual attire, with a jacket with a logo of the university affiliation. Additional locations mentioned by participants were followed up, including community and volunteer organizations, county events, health fairs, medical clinics, and grocery stores.

**Results:** All of the rural county senior centers agreed to participate in recruitment of rural older adults, and yielded the majority of participants to date, leading to further contact with other organizations for recruitment. Directors of the centers assist with appointments and flyer distribution. Some reasons rural older adults cite for not filling out the questionnaire are: time constraints, vision and hearing loss, cognitive impairments such as stroke, concerns about giving personal information about social networking site use and feelings about social connectedness, and confidentiality of contact information. Response to the ‘Meals on Wheels’ flyers to date is small, making it difficult to recruit home-bound individuals.

**Implications:** Senior center involvement can facilitate contact with a community when recruiting rural older adults, and serve as a vehicle for further contact with individuals and organizations. Senior center attendance is small in proportion to the listed 2010 census of older adults in each of the recruitment counties; therefore, it is important for nurse scientists to use a variety of recruitment techniques. Involvement with civil and public health agencies connected with rural older adults is an important strategy to meet recruitment goals in a study involving social connectedness.



# MATERNAL HEALTH

## Social Media Use and Depression among Middle Age and Older U.S. Adults

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**Purpose:** The purpose of this study is to evaluate the relationship between depressive episodes and the frequency of social contact with friends and family through social media in adults aged 45 and above who participated in the third wave of the Midlife in the United States (MIDUS) survey.

**Background:** The growth of social media (SM) use is evident in the middle age and older adults, and its association with mental well-being remains unclear. This study examined SM use and its association with anxiety and depression to answer whether the presence of past year anxiety and depressive episodes can be predicted from frequency of SM contact using a nationally representative random-digit-dial sample.

**Methods:** This study used data from the third wave of the Midlife in the United States, which surveyed 3,294 adults ages 35 and above about their frequency of SM use to contact friends or family and depressive/anxiety episodes. SM use was assessed by self-reported time with four responses, ranging from 1= “at least once a day” to 4= “never or hardly ever.” Anxiety and depression were assessed using self-report of past 12 months’ depressive episode. Logistic regressions were performed.

**Results:** The weighted sample was 54.9% female and 89.5% White. As opposed to previous studies conducted with a younger cohort and accounting for baseline depression and other important potential confounders, this study did not demonstrate that frequency of SM use to contact friends and family predict depressive episodes. Results were robust to all sensitivity analyses. SM use is not associated with increased past year depressive/anxiety episodes in the older adult population.

**Implications:** The baby boomer generation use of social media is potentially far different from a younger adult cohort in the context of depression. Given the proliferation of SM, further studies should look at the possibility of social media use in offering middle age and older adults a medium to connect and engage, develop a sense of community and possibly offset the risk of anxiety and depression.

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# MATERNAL HEALTH

## Auto-Prompting for Task Completion in Persons with Dementia

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**Purpose:** To explore an instrumental activity of daily living (IADL) that can be verbally auto-prompted leading to task completion and to explore the responses of persons with dementia (PWD) to that prompt. The research question is “Which IADL task-related prompt has the highest potential to work successfully in an in-patient memory care setting?”

**Methods:** In this interdisciplinary qualitative descriptive observational study, two students viewed archived videos without audio of PWD (n=15) who participated in a study conducted in a smart home testbed. Videos showed each participant, a PWD, completing eight different IADLs and receiving verbal auto-prompting when needed for task completion. IADLs included: changing a light bulb, washing hands, cleaning countertops, recording a recipe, folding laundry, cooking oatmeal, filing statements, and following game instructions. Each student recorded their moment-by-moment observations of participants performing the IADL tasks with the activation of prompting as needed. Students also recorded the participant’s behaviors and then wrote a reflection focused on their overall impression of the participant’s experience with prompts. The analytic team subsequently reviewed participants’ discrete data such as demographics, medical history, clinical dementia rating, and prompting level (indirect, direct, multimodal) alongside the transcripts of the two students’ observations and reflections (n=30 transcripts). Cognitive Rehabilitation Theory informed interpretation and organization of results. Analysis was conducted in iterative fashion resulting in themes and representations with low inference.

**Results:** Formative findings reveal that verbal auto-prompting for handwashing was the best received (out of 8 tasks with prompts) by PWD and appears to result in successful task completion. Successful completion of tasks appeared to be positively associated with indirect prompting and participants’ historical experiences with the task. Several tasks such as cooking oatmeal, filing statements, and following game instructions seemed to be more challenging. Challenges appeared to be associated with: (a) the participant not being in their natural environment, (b) historically not having routine experience with the task, or (c) needing higher levels of prompting (e.g. direct or multimodal) which were more frequently associated with demonstrations of frustration and confusion.

**Conclusions:** Prompting for hand-washing is most likely to result in successful task completion in the in-patient memory care setting because: (a) it is a less complex task, (b) indirect prompts commonly work for this task, and (c) handwashing is commonly performed outside of one’s home. Findings are informing design and development of an auto-prompting technology system that will be deployed as a prototype in a clinical memory-care setting.

**Policy Implications:** Findings may inform policy discussions regarding the complex care of the growing population of PWD, including provision-of-care that uses high-technology to extend the reach of the nurse and relieve caregiver burden.

# MATERNAL HEALTH

## Falls and Socially Isolated Older Adults

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**Purpose:** To report the prevalence of social isolation and the incidence of falls, and to examine the extent to which social isolation at one point in time predicts falls a year later.

**Background:** Outcomes of social isolation and falls among community-dwelling older adults can be life threatening. While there is evidence of an association between these two gerontological conditions, the nature of that relationship is not well documented. Knowledge is needed regarding the association between social isolation and falling.

**Methods:** This study involved both cross-sectional, as well as longitudinal secondary analysis of four rounds (years) of data from the National Health and Aging Trends Study (NHATS), a nationally representative sample of Medicare beneficiaries (round one  $n = 7,609$ ). In-person interviews with annual re-interviews were conducted by trained interviewers. Social isolation was operationalized as a domain-inclusive construct that was developed for this study, based upon the Social Network Index (SNI). Falling during the previous year was self-reported.

**Results:** Mean age of participants in the analytic sample at baseline was 78.37. Social isolation prevalence ranged from 19.8 - 21.9%. The incidence of falls ranged from 22.4 - 26.2% across the four rounds. Recurrent falls increased from 49.2% of falls in round two to 75.8% in round four. Each 1-point increase in social isolation construct score in round one increased the predicted probability of falling in round two. Even after adjusting for age, gender, and education, social isolation had a small but significant effect on falling ( $OR = 1.08$ ;  $CI = 1.02 - 1.14$ ). Adding self-reported general health, depression, and worry about falling to the model weakened the relationship between social isolation and falls ( $OR = 1.02$ ;  $CI = 0.96 - 1.08$ ). Adding the Short Physical Performance Battery (SPPB), assistive mobility device use, and activities of daily living (ADL) to the model weakened the relationship further ( $OR = 0.99$ ;  $CI = 0.94 - 1.04$ ). In the final model SPPB was predictive of falls ( $OR = 0.97$ ;  $CI = 0.94 - 1.00$ ). The correlation between SPPB and social isolation (2-tailed Pearson's  $r$ ) was -0.42 and significant at the 0.01 level.

**Implications:** In this study social isolation predicted future falls, a finding that could be explained by the moderately strong relationship between social isolation and physical performance. Interventions targeting both variables could have a strong impact on future falls. Social isolation may potentially serve as a marker for conditions that predict falling, such as physical performance, use of assistive devices, and ADL capacity. In addition, "fall-prevention" interventions that specifically target social isolation could incorporate physical performance as a shorter-term and cost effective proxy outcome for falls, when determining intervention efficacy.

**Funding:** In part by the Myrene C. McAninch Doctoral Scholarship, de Tornyay Center for Healthy Aging, University of Washington School of Nursing.

## Abstracts of Poster Presentations

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# MILITARY AND VETERAN HEALTH ISSUES

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### BEHAVIORAL HEALTH AND REINTEGRATION OF MILITARY ENROUTE CARE NURSES

*Angela M. Simmons, Felecia Rivers, Sandi Gordon, Linda H. Yoder*

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### DISPOSABLE, DISPENSABLE, & DISABLED: VETERAN CHALLENGES IN REINTEGRATION

*Ali R. Tayyeb, Jane Georges, Joseph Burkard, Paul Sullivan*

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### U.S. MILITARY SERVICE MEMBERS' EXPERIENCES AS HEALTH RESEARCH PARTICIPANTS

*Wendy A. Cook, Ardith Z. Doorenbos*

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### SYMPTOM EXPERIENCE AND INFLUENZA-LIKE ILLNESS IN A MILITARY POPULATION

*Monique J. Bouvier, Mary Barger, David D'Ambrosio,  
John Arnold, Wei-Ju Chen, Eugene Millar*

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### EVALUATION OF PRACTICE GUIDELINES FOR OVERWEIGHT AND OBESE VETERANS

*Justin Chua, Patricia Daly*

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### CARING FOR VETERANS: AGING, CHRONIC ILLNESS, AND END-OF-LIFE CARE

*Mona Pearl Treyball*

# MILITARY AND VETERAN HEALTH ISSUES

## Behavioral Health and Reintegration of Military Enroute Care Nurses

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**Background:** Since 2003, over nurses were deployed to Iraq and Afghanistan to care for the warfighters injured on the battlefield. A small number of these nurses were selected to become enroute care nurses; they most often flew on helicopters to the point on the battlefield where the service member was injured and provided lifesaving measures as the injured was transported to facilities where they could receive more definitive care. For this group of nurses, returning home was more complicated than they imagined; they were not the same.

**Purpose:** The purpose of this mixed methods study was to capture the perceptions of behavioral health symptoms and the process of seeking assistance as they returned from deployment.

**Methodology:** Using Roy's Adaptation Model as a guide, this study used five instruments to gather quantitative data: a demographic and personal military characteristics instrument, the Generalized Anxiety Disorder-7 Scale, the Centers for Epidemiologic Studies Depression Scale, the Post-traumatic Stress Checklist- Military, the Post-Deployment Readjustment Inventory, and the Post Traumatic Growth Inventory. After the quantitative data was collected, face to face interviews were conducted to gather the voices of the enroute care nurses using existential phenomenology as the guide.

**Results:** The rapid response to the study was overwhelming. This group of nurses defiantly wanted to be heard and had an awesome experience to share! One hundred and nineteen surveys were gathered, either by Survey Monkey © or via mail and twenty two interviews took place. Over half of the participants were male (51%), served in the Air Force (55%) and the majority were deployed more than one time (79%) to Iraq or Afghanistan. The qualitative findings validated some of the quantitative data, detailing elevated levels of anxiety, depression, and difficulty sleeping. Seven themes emerged: "Terror of war"; "You have to have a team"; "Here is my suffering"; "Leadership matters"; "This is my purpose"; "I don't fit in"; and "I'm not prepared".

**Conclusions:** Providing nursing care in austere environments amidst war is both physically and emotionally draining. It proves to be both professionally and personally challenging and extremely demanding. The constant high operational tempo often over-stressed this group of nurses and they had a hard time returning to their families and their pre-deployment life. The behavioral health of nurses needs to be addressed before and after returning from deployment, especially for nurses who provide enroute care. Further research needs to be done to determine appropriate interventions that address their behavioral health needs, along with training for their peers, leaders, and other health care providers. Training must include community providers as well as teachers who care for military children and lay clergy who may encounter the families in a church setting.

**Limitations:** This study was limited by the use of an electronic-self-reporting survey where results were only as valid as the person who answered the survey. Additionally, there was no link between the survey and the qualitative responses. This made it impossible to link the qualitative information directly with different survey results.

**Funding Source:** TriService Nursing Research Program Grant HT9404-13-1-TS06 (N13-P06), NRMIC IRB Number: 392375, DoD and DMDC: Survey Control #DD-HA(OT)2546.

**Disclaimer:** "The views expressed are those of the author(s) and do not reflect the official policy or position of the US Army Medical Department, Department of the Army, Department of Defense or the U.S. Government."

# MILITARY AND VETERAN HEALTH ISSUES

## “Disposable, Dispensable, & Disabled”: Veteran Challenges in Reintegration

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*Communications & Public Affairs*  
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**Purposes/Aims:** The purpose of this phenomenological study is to explore the life experiences of prior service members with various characters of military discharge and to see how the military character of discharge restricted their veteran status, benefits, and obstructed their reintegration back in to the civilian community.

The aims of this study are to explore 3 major time periods in the veterans' life. Those time periods are pre-military, intra-military, and post-military.

**Rationale/Conceptual Basis/Background:** With the growing number of veterans now at approximately 21.8 million and the U.S. involvement in it's longest war ever, the needs of the veteran community will continue to grow. Hundreds of thousands of veterans are denied benefits due to their character of discharge. The U.S. military has nearly tripled the number of “Other Than Honorable” characters of discharge since WW II and the VA has increasingly made the process of receiving benefits more stringent; above and beyond laws set by the U.S. Congress. This growing population of veterans are over represented in many of the at risk populations such as the Homeless community, Veteran suicide, Veterans with Post Traumatic Stress Disorder, Traumatic Brain Injury, depression, anxiety disorder, Military Sexual Trauma and other health and mental health conditions.

**Methods:** This Phenomenological study will explore the lived experiences of approximately 15 to 20 veterans that have been denied veteran benefits due to their character of discharge. Guided by the Neuman System Model this research study has been designed to explore five interactive variables that affect the individual as described by Betty Neuman. The five areas include physiological, psychological, sociocultural, developmental, and spiritual. Recruiting for this study will be through community based organizations that assist veterans in receiving lost benefits. Data collection will utilize and intake/ inclusion/ exclusion socio-demographic questionnaire and face to face interviews. Analysis of the transcribed interviews will be guided by Amedeo P. Giorgi's existential phenomenological methodology.

**Results:** Pending.

**Implications:** The anticipated significance of the study is that it will bring attention to this extremely vulnerable subset of the veteran population that has been significantly underserved and unrepresented. Nursing can lead the change in health and benefit policies that have purposefully placed barriers and denied veteran benefits to the men and women that placed themselves in harms way in service to our nation.

# MILITARY AND VETERAN HEALTH ISSUES

## U.S. Military Service Members' Experiences as Health Research Participants

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**Purpose:** The purpose of this study is to describe the experiences of U.S. military service members as participants in health research.

**Background:** Despite increased demand for military-relevant research, little is known about the recent experiences of current U.S. military service members as health research participants. Service members are needed as participants in research in order to continue achieving health advances specific to this group. Exploring the recent research participation experiences of military service members is important to ensure appropriate levels of human subjects protections are in place—protections that do not under- or over-protect this potentially vulnerable group or unnecessarily impede participant recruitment.

**Methods:** Demographic data will be collected from up to 50 current service members of the U.S. Armed Forces (Army, Navy, Air Force, Marine Corps) who have participated in at least one health research study within the past three years. A purposive sample based on maximum demographic variation (e.g., military rank, branch of service, research experiences) of up to 40 service members will participate in individual interviews in person or via telephone. Semi-structured interviews will focus on the service members' experiences as participants in research and related insights. Interpretive description methods will be used for analysis. The analysis will be an iterative process of constant comparison in which similarities and differences within and across cases are identified and interpreted.

**Results:** The study is in progress. Eighteen service members have enrolled to date. Participant recruitment, data collection, and analysis continue. Results will be presented in the poster session.

**Implications:** The goal of this research is to generate knowledge that will support future ethical research participation for this potentially vulnerable group. Findings may be useful in guiding military nurse scientists and military nurse leaders to new and revised policies for human subjects protections that address the special needs of service members as research participants. To our knowledge, this study will be the first to provide empirical evidence regarding current U.S. military service members' recent experiences as health research participants.

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**Funding:** This study was supported by the TriService Nursing Research Program (TSNRP) under award HU0001-14-1-TS07 (N14-P10).

# MILITARY AND VETERAN HEALTH ISSUES

## Symptom Experience and Influenza-Like Illness in a Military Population

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*David D'Ambrosio*

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**Disclaimer:** The views expressed herein are those of the authors and do not reflect the official policy or position of the Department of the Navy, Department of Defense, or the United States Government.

**Aims:** The primary objective is to identify if symptom presentation over the course of influenza-like illness (ILI) can predict virus type in an otherwise healthy population using unsupervised machine learning. The secondary aim is to identify sub-populations with similar symptom experience.

**Background:** Of over 350,000 samples were collected from the 2012-2013 flu season, only 21% were positive for an influenza virus. ILI outbreaks are a significant source of non-battle injury among military personnel and may lead to mission cancellations. Prior studies of influenza symptom severity used dichotomous or linear sum analysis but few examined symptoms over the course of the illness. No studies to the researcher's knowledge have examined ILI symptoms through an unsupervised machine learning analysis.

**Methods:** The Acute Respiratory Infection Consortium (ARIC) conducted a prospective longitudinal study from 2009-2014 to determine the etiology, epidemiology, and clinical characteristics of ILI. The sample population (n=1590) was healthy active duty military members, healthy retirees, and their dependents from five US treatment facilities. Subjects recorded symptoms on days 0, 3, and 7 using a tool designed for this study. Nasopharyngeal samples were collected for virus identification. This analysis only includes cases with complete visit data (n=699).

Unsupervised machine learning algorithm k-means clustering analyzed the data in two ways. In both approaches, patients were clustered by the individual symptom score for every visit to capture severity and illness progression. In the first analysis, patients of all virus types were clustered with patients without a viral diagnosis. The other analyses clustered patients diagnosed with the most prominent viruses (influenza A, rhinovirus, and coronavirus) separately.

**Results:** The primary analysis was unable to predict virus type or differentiate those with and without a virus based on patient symptom experience using a variety of scoring approaches. The secondary analyses with rhinovirus (n=101), influenza A (n=107), and coronavirus (n=51) each yielded at least one symptom cluster with a statistically significant difference based on non-symptom features using one-way ANOVA or chi square testing. The clustered rhinovirus data showed the most statistically significant differences amongst the clusters in the attributes: sex, BMI, age, smoking history, and military status. The clustered influenza A data showed a statistically significant difference in clusters based on sex and ethnicity. The clustered coronavirus data only showed some differences amongst clusters in regards to sex, which was expected as the data set was well distributed. Overall the patients in the different virus clusters experienced symptoms differently compared to the total population for virus type.

**Further Research:** These results demonstrate that physical symptoms experienced amongst patients with the same virus type are not homogenous. Furthermore, the secondary analyses demonstrated the presentation of physical symptoms vary by individuals' attributes. For that reason, future research should consider utilizing a symptom severity instrument that measures more than physical symptoms, and captures psychological, environmental, and other aspects as presented in the symptom management theory. The development of an instrument to capture symptom experience as expressed in the symptom management theory may lead to better diagnoses.

**Funding:** Partial support for the ARIC study was provided by the Department of Defense Global emerging Infections Surveillance program, and federal funds from the National Institute of Allergy and Infectious Diseases under inter-agency agreement (Y1-AJ-5072).



# MILITARY AND VETERAN HEALTH ISSUES

## Evaluation of Practice Guidelines for Overweight and Obese Veterans

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**Purpose:** With the obesity epidemic ever-increasing, the purpose of this practice inquiry is to evaluate *Veteran's Administration (VA)/DoD Clinical Practice Guideline for Screening and Management of Overweight and Obesity* using the Appraisal for Guidelines and Research and Evaluation (AGREE II) instrument in an outpatient VA facility and assessing provider practice guideline knowledge.

**Background:** The prevalence of obesity in the U.S. has escalated from 15% to 34%, which is more than double from 1980 to 2008. Active military and Veterans obesity rates have risen in similar fashion. The combined prevalence of overweight and obesity is 60.5% in military personnel demonstrating this population is not immune to the obesity epidemic. The implementation of practice guidelines is critical to effective treatment to counteract the rising rates of overweight and obesity. Adherence to clinical practice guidelines often remains low causing an omission of therapies that are recommended in the guidelines.

**Methods:** The *VA/DoD Clinical Practice Guideline for Screening and Management of Overweight and Obesity* is evaluated using the AGREE II instrument. Using the Promoting Action on Research Implementation in Health Services (PARiHS) framework to determine potential knowledge translation, recommendations for a guideline implementation strategy are made to bolster applicability, thus improving the current clinical practice guideline. A first step in implementation is assessing provider knowledge of practice guidelines. This project will survey providers to identify potential barriers and facilitators for implementing these guidelines in a VA outpatient setting. The survey will include questions assessing knowledge and awareness of the guideline, agreeability with recommendations, ambiguity with how and what to do, and ability based off of skill and/or system barriers.

**Outcomes:** Based on of the preliminary results of the AGREE II instrument's critical appraisal on the selected guideline, the overall quality of the guideline: 5/7. The guideline is recommended for use with modifications pending improvements to applicability. Following IRB approval, survey data is anticipated Spring of 2017.

**Conclusions:** This clinical practice guideline lacks an effective implementation strategy. A first step is determining nurse and provider knowledge of these practice guidelines. This needs assessment will identify potential provider knowledge deficits to guide development of a guideline education program to facilitate incorporating these guidelines into practice. The value of incorporating an implementation strategy into the guideline improves the uptake and applicability of the recommendations being put into practice by registered nurses and advanced practice registered nurses. Translating the evidence-based recommendations from the guideline into practice is the next step in combatting the obesity epidemic observed in U.S. Veterans.

# MILITARY AND VETERAN HEALTH ISSUES

## Caring for Veterans: Aging, Chronic Illness, and End-of-Life Care

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**Purpose:** One in four dying Americans is a veteran (We Honor Veterans, 2016). Curricular content in graduate nursing education is needed that focuses on the needs of an aging veteran population, service connected chronic conditions (such as Agent Orange exposure, Gulf War Syndrome), and the long term effects of service on health, as well as, end-of-life and palliative care.

**Background:** Veterans today have multiple complex health care issues many of which are related to service-connected conditions such as post-traumatic stress, Gulf War Syndrome, and environmental exposure from training, materials, and deployment. Furthermore, military service becomes a part of a veteran's psyche, and in treating the whole person, this significant period of time of giving service to one's country, often emerges when facing issues related to aging, chronic illness, and the dying process. Nurses and health care professionals are not prepared for the concerns that these veterans face and unaware of what benefits are available when veterans are facing chronic illness, the effects of aging, and end-of-life care.

**Best Practice/Curriculum:** To determine the need for this curriculum ten focus groups, interviews, and brown bag sessions were conducted with key personnel in Colorado and Washington DC. Focus groups and collaboration with the Adult-Gerontology Nurse Practitioner program at the University of Colorado College of Nursing identified chronic illness and aging of veterans as a gap in knowledge and an imperative curricular need. This program explores aging and chronic illness in veteran populations, environmental exposures in military environments, and long term effects of chemical, biological, radiological, nuclear, explosive materials. Additionally, specific service connected conditions for veterans of Vietnam, Gulf War, and Iraq/Afghanistan are examined. End-of-life and palliative care sensitive to the veteran population and their unique psychological needs are appraised.

**Outcomes:** An online course was offered for the first time Fall 2016. Students attended from diverse states and disciplines, including Nexus students from other institutions. Faculty was interdisciplinary, and included guest speakers from military and veteran perspectives. Students engaged in synchronous/ asynchronous discussions and produced papers and projects demonstrating innovations applicable to their practice. Formative evaluation rated the curriculum highly and summative outcome data will be presented at the conference.

**Conclusions:** This program provides core content for nurses and other health care professionals to provide sensitive and specific care for an aging veteran population. Future recommendations are for this core content to be included in undergraduate and graduate nursing, medical, and allied health education.

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**Reference:** We Honor Veterans. 2016. Retrieved from wehonorvets.org.



**Abstracts of Poster Presentations**

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**SYMPOSIUM: NEXUS: LEADING THE VISION  
FOR INTRAPROFESSIONAL EDUCATION  
AND RESEARCH COLLABORATION**

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OVERVIEW: NEXUS: LEADING THROUGH  
INTRAPROFESSIONAL EDUCATION  
AND RESEARCH COLLABORATION

*Pauline Kommenich*

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NEXUS: REFLECTING ON THE PAST AND  
MOVING TOWARD THE FUTURE

*Pauline Kommenich*

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NEXUS: ENHANCING INTRAPROFESSIONAL  
FACULTY RESEARCH COLLABORATIONS

*Donna Velasquez*

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NEXUS 3.0: FACILITATING INNOVATIVE  
ACADEMIC CONNECTIONS

*Barbara K. Haas, David P. Hrabe*

# NEXUS: LEADING THE VISION FOR INTRAPROFESSIONAL EDUCATION AND RESEARCH COLLABORATION

## Overview: NEXus: Leading through Intraprofessional Education and Research Collaboration

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**Purpose:** Building on strengths in advanced nursing education, research in diverse populations and targeted university support for transdisciplinary, use-inspired research, NEXus provides a mechanism for promoting academic and practice collaboration to meet the challenges of healthcare reform through education and research. The proposed three papers in this symposium present a rationale for existing DNP and PhD programs to fill an important need for nurse scientists and practitioners who bridge the paradigms of knowledge translation and knowledge generation, improve healthcare quality/safety and promote excellent patient outcomes.

The first paper provides a brief overview of collaborative consortia approaches to education and the pros and cons of consortiums with a focus on NEXus and its potential for leading the vision for collaboration between PhD and DNP programs. The second paper describes a novel approach to enhance intraprofessional research collaborations between PhD and DNP prepared faculty through the use of NEXus courses. The third paper focuses on creative and innovative collaborative approaches that are emerging through the NEXus consortium and will enhance research within clinical settings and potentially impact health care. The intent is to engage PhD and DNP faculty and students, as well as their academic institutions, in collaborative activities through the existing consortium with a more intensive focus on research, joint academic projects, consultation and other related activities. Ultimately, the projected impact would be to increase the number of nurse scientists and practitioners who can work together on research teams that span and broaden traditional and professional boundaries.

# NEXUS: LEADING THE VISION FOR INTRAPROFESSIONAL EDUCATION AND RESEARCH COLLABORATION

## NEXus: Reflecting on the Past and Moving toward the Future

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**Purpose:** The purpose of this presentation is to provide the background for new directions for the well-established Nurse Education Exchange (NEXus) that began in 2004 with a Fund of the Development of Postsecondary Education (FIPSE) grant and evolved into a dynamic offering of course exchanges across 17 universities.

**Background:** A number of collaborative consortia approaches to education have been successful in promoting distance accessible programs (Long 2007; Tanner, Gubrud-Howe & Shores, 2008; IDEA, Selkirk, 2011), however, NEXus (2006) developed a unique approach for students and faculty to complete high quality doctoral education through collaboration and distance delivery of courses. This approach has gained considerable momentum in Nursing in the past 10 years. An example of this collaboration was the implementation of a cooperative agreement between NEXus and the National Hartford Center of Gerontological Nursing Excellence (NHCGNE) which addressed issues of equity and access for students, faculty and institutions to educational programs that offer programs of healthcare for older adults.

**Approach:** An analysis of the NEXus consortium as a creative collaborative that grew incrementally in the support of newly emerging PhD programs in Nursing will be presented. The paper includes a brief contrast of the NEXus approach as uniquely conceptualized to strengthen courses and provide support for PhD programs in the west to a number of collaborative consortia approaches to education successful in promoting distance accessible programs. The unique bent of focusing on courses rather than programs has resulted in new opportunities for growth within the discipline that stimulates intra-professional collaboration. Factors contributing to this growth will be highlighted viewing the progression from a traditional to a contemporary progressive framework of digital thinking in stages, e.g., Nexus.1 as the preliminary development period, NEXus.2 as the newly emerging growth period leading to NEXus.3 the future period projecting the transition to enhance faculty, student and health professional collaboration in research and education.

**Conclusion:** The paper will set the stage for the subsequent presentation that explore the potential impact of intraprofessional collaboration of PhD and DNP programs that have the potential to enhance the research, education and practice impact on the health outcomes of society.

# NEXUS: LEADING THE VISION FOR INTRAPROFESSIONAL EDUCATION AND RESEARCH COLLABORATION

## NEXus: Enhancing Intraprofessional Faculty Research Collaborations

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**Purpose:** The purpose of this presentation is to describe a novel approach using NEXus as a mechanism to enhance intraprofessional research collaboration between PhD and DNP prepared faculty.

**Background & Conceptual Model:** Knowledge from practice has gained some legitimacy and recently the American Association of Colleges of Nursing (AACN) has stated that “graduates of both research- and practice-focused doctoral programs are prepared to generate new knowledge” (p. 2, AACN, 2015). However, there remains a significant gap in collaborations among PhD and DNP prepared nurses to conduct research and translate knowledge to practice to improve patient outcomes. In part, this is due to differences in how DNP and PhD nurses are prepared. DNP graduates are generally not well prepared in advanced research methodologies and PhD prepared nurses may lack knowledge in methodologies appropriate to study complex practice environments.

A model developed by Velasquez, McArthur, and Johnson (2011) delineates the distinct and shared contributions to the generation and application of knowledge by DNP and PhD prepared nurses. A key dynamic within the model is the permeability of boundaries between DNP and PhD prepared nurses to reduce role constraints and to facilitate knowledge flow and collaborations between the two doctoral roles.

**Approach:** To facilitate research collaborations between PhD and DNP prepared faculty there must be a mechanism for faculty development without having to return to formal graduate programs. NEXus courses are available to faculty and provide an innovative mechanism for fostering development in a wide variety of topics including advanced research methodologies, quality improvement, complexity science, statistics, and measurement, as well population topics such as veteran health, palliative care, and tribal cultures.

Additionally, while some schools provide opportunities for combined educational opportunities between PhD and DNP students, most programs have separate tracks with little interaction between students further contributing to lack of understanding and appreciation of each other’s role. NEXus courses afford an opportunity for DNP and PhD students to study together increasing understanding of each other’s knowledge and skills and provide an opportunity for networking with others who have similar research and practice interests.

**Conclusion:** DNP and PhD graduates are prepared differently and each brings unique knowledge, skills, and perspectives that broaden the impact of nursing to improve health. However, the difference in educational preparation can create a barrier to collaboration. While the goal is not to duplicate skills, increasing understanding of specific research methods and populations and providing networking opportunities builds and strengthens connections. NEXus provides a novel opportunity to increase collaboration between DNP and PhD prepared faculty to conduct and translate research to improve patient outcomes.

# NEXUS: LEADING THE VISION FOR INTRAPROFESSIONAL EDUCATION AND RESEARCH COLLABORATION

## NEXus 3.0: Facilitating Innovative Academic Connections

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**Purpose:** The purpose of this presentation is to discuss innovative approaches to meet and exceed academic imperatives through creative collaboratives such as the Nursing Education Xchange (NEXus).

**Background:** Komneneich, Hayes, Magilvy and McNeil (2013) recount the origins of NEXus. This phase of development, retrospectively called “NEXus 1.0”, was underwritten by a grant from Fund for the Improvement of Postsecondary Education (FIPSE, 2004) to promote sharing of online PhD courses among member schools and was broadened in 2009 (HRSA) to include DNP courses. “NEXus 2.0” has focused on an expansion out of the western region to build capacity and add gerontological content (Hartford NHCGNE) to course offerings.

**Approach:** As NEXus has continued to evolve and relationships among collaborating institutions have matured, “NEXus 3.0” is emerging. In this presentation, we will share examples of multiple collaborations that have supported student and faculty scholarship as well as institutional excellence. Mentoring of students, intercollegiate research collaborations and expert consultation have contributed to vibrant academic connections which continue to evolve.

**Conclusion:** Collaboratives such as NEXus have great potential to promote innovation by connecting nursing students and faculty with a variety of perspectives, expertise and networks.





**Abstracts of Poster Presentations**

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**NURSING EDUCATION STRATEGIES I**

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**UNPREPARED: NEW NURSES  
AND WORKPLACE VIOLENCE**

*Gail Oneal, Janessa Graves*

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**DEVELOPING ACADEMIC AND PROFESSIONAL  
RESILIENCY IN PRE-LICENSURE NURSING STUDENTS**

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**THE IMPACT OF A DEDICATED EDUCATIONAL UNIT  
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*Amber Lea Vermeesch, Patricia H. Cox*

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AN UNDERGRADUATE NURSING STUDENT EXCHANGE  
BETWEEN THE UNITED STATES AND MEXICO

*Joanne Noone, Maria Teresa Hernandez*

# NURSING EDUCATION STRATEGIES I

## Unprepared: New Nurses and Workplace Violence

*Gail Oneal, PhD, RN*

*Janessa Graves, PhD, MPH*

*Tullamora Diede, MSN, RN*

*Celestina Barbosa-Leiker, PhD*

*Patricia Butterfield, PhD, RN, FAAN*

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*Washington State University College of Nursing  
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**Purpose:** Related to Total Worker Health (TWH™), the overall purpose of the current study of “Total Worker Health among New Nurses” is to investigate work experiences of newly graduated nurses, with the long-range goal of developing an instrument to measure new nurses’ perceptions of workplace risks. The principle, recently completed aim of the parent study was to identify perceptions of occupational risks of new nurses in their workplaces. The purpose for this paper is to report findings of one specific category, personal safety risks from violence, identified during analysis.

**Background:** Literature and systematic reviews cite the occurrence of violence to healthcare workers, perpetrated by patients, families, or friends, known as Type II violence. Risk factors include gender, age, work demands, specific work units, and simply working as a nurse. Nurses who are victims of Type II violence experience adverse outcomes at work and home. Violence is a leading cause for employee turnover. Yet, a gap exists in understanding if and how new nurses experience Type II violence, and how these experiences affect their health.

**Methods:** Using qualitative design, multiple focus groups were held in three cities in two Pacific Northwest states with a total of 29 new nurses from various types of facilities. Semi-structured questions guided the audiotaped, transcribed interviews. Transcripts were thematically analyzed. Initial themes and categories were presented to five additional key informants through telephone interviews, to further verify results. All key informants confirmed themes and categories, and they offered additional information as corroboration.

**Findings:** Three major themes formed a conceptual model, *Social-Ecological Model for Total Worker Health of New Nurses: Balancing Work-Life*, which describes how new nurses seek balance in their personal and work lives. Although all participants’ experiences coincided with the resulting themes in the conceptual model, not all participants offered comments in all categories of each theme. However, the risk to personal safety from violence (a component of the “Health” theme), was one exception, wherein all participants discussed their experiences with Type II violence in detail. Participants reported being bitten, kicked or hit, enduring verbal abuse, and receiving threats of physical harm. These experiences induced anxiety, fear, and feelings of not knowing what to do or how to protect one’s self. The major findings included being unaware and unprepared for frequencies and degrees of Type II violence and threats they encountered, even though some participants had preparation about Type II violence in school. Participants reported two types of patients identified as most worrisome: those with mental illness history and those with dementia.

**Implications:** New nurses need better preparation and self-defense training to reduce fear, anxiety, and personal injury risks due to violence that may come from caring for patients. School preparation should include realistic scenarios of Type II violence and information about patients most likely to cause harm. Self-defense classes should begin in orientation at workplaces, and continue throughout employment. Facilities should enact zero tolerance policies to protect employees from violence. Factors that contribute to Type II violence involving new nurses should be investigated.

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**Funding:** This study was funded by the Oregon Healthy Workforce Center Pilot Grant program (CDC/NIOSH U19OH010154).

# NURSING EDUCATION STRATEGIES I

## Developing Academic and Professional Resiliency in Pre-Licensure Nursing Students

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Deborah Williams, PhD, MPH, RN; Kenneth Oja, PhD, RN;  
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**Background:** Supportive faculty and peers are cited as factors that enhance nursing student retention.<sup>1</sup> Environmental stressors and burnout are cited as main reasons new graduate nurses leave the profession. The ANA supports nurses and employers sharing responsibility to create healthy and safe work environments. Resiliency education encourages intentional use of resiliency strategies as a means to ease stress, enhance self-efficacy, improve safety and caring behaviors. Studies of entry programs from other service professions at risk for burnout indicated that resiliency training improved academic progression, student retention, and professional efficacy. Intentional use of resiliency strategies was protective and predictive of successful student and new graduate transitions in the other stress-prone professions. Those learners also reported greater intention to remain in their new professions. The resiliency curriculum used in this study aimed at providing meaningful skill-building and a structure to develop intentional resiliency in professionals entering or transitioning within highly stressful work environments. Key resiliency strategies included: goal-setting, eating right/fitness, relaxation, sleep hygiene, perspective, belief building, empathy, thriving, and social support. Initially designed and validated to transition combat veterans into academic settings, this curriculum had been modified to support first responders during their professional-entry academies and transition-to-practice. In this study, the evidence-based curriculum was further adapted to focus on stress-prone nursing concerns, and piloted in our pre-licensure nursing program.

**Purpose:** Adapt and integrate intentional resiliency education into a pre-licensure nursing curriculum, and include faculty and students. Evaluate feasibility, effectiveness, stakeholder acceptability, and usability of the nursing-focused curriculum during academic progression and initial transition-to-practice.

**Mixed Method Research Design:** Constructivism informed the sequence and adaption of the curriculum specific to a nursing-focus, including clinical immersion and stressor-prone situations associated with nursing practice. Convenience sampling was used for the nursing-focused resiliency curriculum, which was offered optionally mid-point in a pre-licensure Masters' entry nursing program. Participants (n=73) included both faculty (7) and students (66). Effectiveness of education data was pre-post-post the standardized education using the previously validated resiliency assessment tool, Response to Stressful Experiences Scale (RSES). Participant interviews were used to inform feasibility, acceptability and usability. Longitudinal post-graduation/post-NCLEX data also informed effectiveness, feasibility, acceptability, and usability.

**Results and Discussion:** Initial results of learning effectiveness, feasibility, and acceptability within this nursing adaptation of the resiliency curriculum were consistent with the other professions' prior studies, indicated by statistically significant gains on the RSES resiliency tool in paired t-tests, and by content analyses of the participants' longitudinal interview data. Ongoing analyses will continue to assess effectiveness and usability of resiliency strategies. Early themes emerging from the qualitative data include: adapting to situations, engaged learners/families, trust, and self-other supportiveness. Participants reported using learned strategies intentionally post-education.

**Conclusions and Implications:** Preliminary findings suggested the standardized resiliency curriculum supported academic progression and provided acceptable and useful strategies for participants to use as they transition from students to new graduates and nursing professionals. Additional curriculum enhancements that further integrate social support systems, as well as other specific adaptations that may facilitate transition-to-practice and longitudinal follow-up of participants were identified for further study.

# NURSING EDUCATION STRATEGIES I

## The Impact of a Dedicated Educational Unit Clinical Model on Student Critical Thinking

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**Purposes/Aims:** The purpose of this study is to examine the impact of a dedicated-education unit clinical experience on student's critical thinking scores. One cohort of clinical students is assigned to a Dedicated Education Unit (DEU) and four other cohorts are assigned to units using the traditional model of clinical instruction. Both a pre-test/post-test design and a group comparison design are utilized.

**Rationale/Conceptual Basis/Background:** The DEU model of clinical instruction partners a student with a working nurse for the majority of the semester. The students choose to be in the DEU rotation and the working staff nurses volunteer to be DEU clinical instructors. This relatively new model of clinical instruction is consistent with increased quantitative measures of satisfaction of both nurses and students (Rhodes, Meyers & Underhill, 2012); and several studies used qualitative methods to describe positive student experiences (Hannon et al, 2012) and positive faculty experiences (DeMeester, 2012). Researchers are beginning to determine if the DEU clinical experience improves students learning and if this is evident in improved critical thinking scores specifically.

**Methods:** The students have been enrolled in the Kaplan program of nursing instructional support which includes many comprehensive tests. The students in this study were third semester students and all took three different comprehensive Kaplan tests during the first two trimesters prior to being enrolled in the course under study. Each of these three Kaplan exams contained a critical thinking sub score which has been extracted for each student. These individualized scores were aggregated and served as the pretest. After the third clinical semester ended, all students took a dedicated critical thinking comprehensive Kaplan exam. This exam served as the posttest. Students were grouped by clinical cohort and a difference in means and t-tests were analyzed.

**Results:** We have already completed the initial analysis on three cohorts of students in the pilot study presented in 2016. By the time of the 2017 presentation there will be five or six cohorts (n>200) included in the final analysis. Thus far, each DEU cohort has had the greatest improvement in critical thinking scores in all 3 trimesters. However, these improvements have only approached significance ( $p=0.12$ ). This is encouraging with only eight students per clinical group. Before the April 2017 WIN conference, we will have completed the analysis on 2 or 3 additional cohorts which will provide increased statistical power. If the trends observed in the pilot study continue, increased numbers will make significance more likely.

**Implications:** The DEU model of clinical instruction has the potential to improve student critical thinking and ultimately clinical reasoning. This is an important advance in pre-licensure nursing education that is historically difficult to teach.

# NURSING EDUCATION STRATEGIES I

## Nursing Students' Perceptions of Night Shift Pediatric Clinical Rotations

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**Purpose:** To evaluate baccalaureate nursing students' perceptions of clinical learning experiences garnered through night shift basic pediatric clinical rotations.

**Background:** Evidence supports that night shift offers a unique working and learning environment compared that of day shift. Due to its inherent nature, night shift offers many opportunities for personal and professional growth - especially in developing autonomy, responsibility, and clinical reasoning. The clinical learning setting is a significant factor in baccalaureate nursing students' knowledge and skill acquisition. Night shift clinical placements offer numerous benefits for nursing students: (1) opportunity to have an active role in patient care coordination and continuity, (2) time to discuss clinical concepts with preceptors, (3) time to acquire new skills, (4) ability to integrate academic theory and practice, and (5) exposure to the realities of practice. However, limited research exists assessing baccalaureate nursing student experiences in non-traditional clinical settings, such as night shift.

**Methods:** A descriptive, non-experimental design featuring an electronic survey instrument was used for this study. Students completed the anonymous survey at the conclusion of their 72-hour basic pediatric clinical rotation. Student perceptions of preceptors and clinical units were evaluated using a 5-point Likert scale (excellent [5] to poor [1]). Additionally, an open-ended question was included which asked students to relay the most valuable experience of the rotation. Data was aggregated and analyzed using descriptive statistics.

**Results:** Eighty-eight baccalaureate nursing students from multiple local schools of nursing completed the electronic survey. Overall, the student sample perceived value in having night shift as the clinical learning environment for their basic pediatric rotation (mean 4.75). The student sample perceived the night shift clinical setting as one that fostered experiencing new skills and consolidating skills learned previously (mean 4.73); while offering time to learn (mean 4.74) with preceptors who had time to teach (mean 4.63). Furthermore, the student sample believed the night shift clinical rotation assisted their development of autonomy in their practice (mean 4.77) and helped them meet course objectives and personal learning goals (mean 4.74). Student statements about their most valuable experience during the rotation include: "*Gaining confidence and learning new skills*"; "*Was really able to experience the flow of a nursing shift*"; and "*The environment was excellent for learning and I feel that I grew as a nurse during this rotation.*"

**Implications:** Using night shift as the clinical learning environment for basic pediatric rotations provides an enhanced learning experience for baccalaureate nursing students. The exposure to shift-to-shift continuity of care and the realities of the 24-hour inpatient clinical environment may lead to increased graduate readiness by enabling students to translate clinical learning into real-life practice settings more readily. Additionally, night shift clinical rotations offer operational and business model benefits, including: 1) increased revenue from schools of nursing in being able to accommodate increased student placements, and 2) reducing preceptor burnout by spreading student rotations over both day and night 12-hour shifts.

# NURSING EDUCATION STRATEGIES I

## Nurse Swallow Screening Curriculum in California

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**Purpose/Aims:** The purpose of this study was to identify the current frequency, number and types of educational pedagogies, and best practice strategies used to teach dysphagia and swallow screening in California's pre-licensure nursing programs.

**Rationale/Background:** Pneumonia is the 8th leading cause of death in the United States. It is considered the second most common diagnosis in Medicare patients and is the leading cause of death among the elderly. A major complication of impaired swallow is aspiration which can lead to pneumonia.

Nurses are authorized to provide services that support the safety and protection of their patients. Central to the nursing role is a responsibility for patient safety in the administration of oral medications, fluids, and nutritional intake. Therefore, nurses are the key to early identification of patients who are at risk for aspiration.

Although nurses are increasingly expected to perform swallow screenings for patients and to request referrals for specialized dysphagia assessment and care, the literature reveals a significant gap in nursing curriculum related to dysphagia education. The purpose of this study was to identify the current frequency, educational pedagogies, and best practice strategies used to teach dysphagia and swallow screening in California's pre-licensure nursing programs.

**Methods:** The mixed methods study used a survey of pre-licensure nursing programs in California to evaluate curriculum content related to swallow screening. An original 12-item swallow curriculum survey tool was designed by content experts. A comprehensive list of 137 RN program contacts were identified. Descriptive statistics were used to analyze survey responses.

**Results:** A total of 59 nursing program respondents representing ADN, BSN and ELM programs completed the survey for an overall response rate of 43%. In terms of the use of nurse swallow screening in the curriculum, 14 respondents (24%) stated that the content is not included in the curriculum. Thirty respondents (50%) used a reading assignment, 32 respondents (54%) offered didactic lecture, (31%) swallow screen skills lab demonstration with a return demonstration, and (10%) used simulation with standardized patient. Fifty-two respondents (89%) either agreed or strongly agreed that it was important to include swallow screenings in the curriculum.

Additionally, in response to the question: "Are nursing students in your program expected to perform swallow screenings while in the clinical setting?" Fifty respondents (85%) indicated that this was not an expectations of students. However, all students were expected to administer medications, fluids, and food to patients with oral intake orders when in the clinical setting.

**Conclusion:** Nursing curriculum should be revised to include content regarding swallowing disorders along with swallow screening tools which can be taught using didactic, lab training and/or other active learning pedagogies. This recommended revision to the curriculum will help future nurses identify those patients who are at risk for aspiration, reduce or prevent the incidents of non-ventilator associated pneumonias, and decrease pneumonia-related healthcare cost and death.

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**Acknowledgement:** The authors would like to thank the College of Health and Human Services for support in completing this research.



# NURSING EDUCATION STRATEGIES I

## Motivating Oregon Registered Nurses to Pursue a Bachelor of Science Degree in Nursing

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**Purposes/Aims:** Improve public health outcomes by sharing strategies aimed at increasing the number of nurses in Oregon having BSN degrees.

**Rationale/Background:** Research has shown that when nurses are prepared at the baccalaureate level, this is associated with fewer medication errors, lower mortality rates, and better patient outcomes. Currently only 49 percent of Oregon nurses have earned a bachelor's degree in nursing. The Oregon Action Coalition (OAC) education workgroup is striving to achieve the Institute of Medicine (IOM)'s goal of increasing the number of baccalaureate nurses to 80 percent by 2020.

**Undertaking/Best Practice/Approach/Methods/Process:** A literature review helped to identify common barriers nurses encounter when obtaining a BSN degree. Over the past two years the workgroup created documents such as a frequently asked questions (FAQ) document and a table providing information to nurses about options for furthering their education. These resource documents are accessible online and will be distributed during state and local conferences. Additionally, a motivational video was created with participation of several nurse volunteers who were working on or had recently completed their RN to BSN degrees.

**Outcomes Achieved/Documented:** The two documents and video have been disseminated on the Oregon Center for Nursing/Oregon Action Coalition website. They also have been uploaded to the national Future of Nursing: Campaign for Action website. The campaign efforts were presented at state and local conferences this fall. Colleges of nursing have requested use of the promotional video. Additionally, there are plans to share these materials with nursing employers and nurses at job sites. Each year, the percentage of nurses in Oregon having BSN degrees will continue to be tracked to monitor progress toward the 80% goal over the next four years until the 2020 target.

**Conclusions:** This campaign will increase awareness and hopefully encourage registered nurses to engage in furthering their education.

# NURSING EDUCATION STRATEGIES I

## Veteran-Centric Content Integration in a Baccalaureate Nursing Program

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**Purpose:** The purpose of this presentation is to describe the collaboration a between Veterans Affairs Nursing Academic Partnership (VANAP) and a school of nursing in introducing Veteran-centric content in a baccalaureate nursing program. The purpose of VANAP is to “leverage academic and clinical resources to increase student enrollment, support faculty development, promote innovation in clinical education, develop Veteran-centric education and practice initiatives, and increase the recruitment and retention of VA nurses“ (VANAP Request for Proposals (RFP), 2013, p. 1).

**Background:** There are approximately 22 million living United States Veterans, representing seven percent of the total population (U.S. Department of Veterans Affairs, 2016). However, only about thirty percent of veterans utilize their VA healthcare benefit (U.S. Department of Veterans Affairs, 2015). While some nursing students may have opportunities to learn about Veteran care through clinical placements in a VA system, it is important that all students been informed of the unique healthcare needs of this population because of the likelihood of caring for a Veteran in their future practice settings. With this in mind VANAP faculty endeavored to enrich undergraduate nursing curriculum with Veteran-centric content.

**Process:** VANAP faculty included both school of nursing faculty and VA staff nurses who partnered together in this work beginning in 2013. We identified key stakeholders in the undergraduate nursing program and collaborated with them in order to get buy in on the importance of Veteran content. We then reviewed the literature to identify key Veteran care concepts based on prevalence and importance and examined the curriculum for areas where Veteran content was already being taught and identified gaps where additional material could be added. Because we wanted to be conscious of “content creep” and oversaturation of material, we looked to integrate Veteran content into areas that would be a natural fit. In order to engage students using multiple learning modalities we utilized Veteran-centric case studies, simulations and concept-based learning activities in addition to traditional methods of reading preparation and lecture. This strategy of content integration exposed students to Veteran specific information while also teaching concepts that could be broadly applied to a variety of populations.

**Outcomes:** We were successfully able to integrate Veteran-centric content into all courses of the three year undergraduate curriculum and developed a content integration map that outlined specific content and where it was being taught in order to avoid duplication of content.

**Conclusions:** Veterans are a population with unique healthcare issues and needs. Integrating Veteran-centric content into the baccalaureate curriculum and educating students and faculty on related best practices and evidence-based care promotes the best possible care to Veterans and their families. The benefit of such work will result in more culturally competent nurses practicing in and outside of VA facilities. Content integration into existing curriculum requires careful planning and consists of several steps. Involving stakeholders early in the process, maintaining frequent communication, integrating collective feedback and establishing meaningful evaluation processes allows creation of a program that meets students, faculty and Veteran needs. Future evaluation will include assessing the sustainability of this project, its impact on student knowledge and application of Veteran content, and stakeholder satisfaction.

# NURSING EDUCATION STRATEGIES I

## Public Health Partnership: Engaging Nursing Students to Protect the Vulnerable

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**Purposes/Aims:** The purpose of this best practice is to describe the partnership of the Mervyn M. Dymally School of Nursing (MMDSON) at the Charles R. Drew University (CDU) and LAC DPH to facilitate the execution and delivery of an educational community outreach.

**Rationale/Background:** Los Angeles Department of Public Health (LAC DPH) Acute Communicable Disease Control Program (ACDC) addresses the outbreaks in general acute community hospitals, skilled nursing facilities (SNF), and non-healthcare settings (community) in Spa 8. The outbreak management guidelines include Influenza Outbreak Prevention and Control Guidelines, Norovirus Outbreak Prevention and Scabies Prevention and Control Guidelines in Acute and Long-Term Care Facilities. A partnership with Mervyn M. Dymally School of Nursing (MMDSON) at the Charles R. Drew University (CDU) and LAC DPH facilitated the execution and delivery of an educational community outreach already in place.

**Brief Description of the Undertaking/Best Practice:** The Entry Level Masters (ELM) RN students from MMDSON approach to the project included doing a windshield survey of Spa 8 and using a train the trainer model to deliver the education. The purpose of the education program was multi-dimensional. First, it was to provide public health nurses (PHNs) field nurses in opportunity to build rapport with the SNFs in their area. Secondly the program provided a vehicle to inform SNF staff of roles of Public Health and PHNs and to provide education on how to use the outbreak management. The guidelines along with printed materials and a quick reference for SNF staff provided the current list of reportable diseases and condition to report to the LAC public health authorities (rev. 2/29/16) and LAC Morbidity Unit contact information for reporting of reportable diseases/conditions.

**Outcomes:** The program used a “train the trainer” model. The ELM students developed a standardized educational slide set and flyers for quick reference. These items were for use during their visit to the facilities. The overarching goal related to infectious disease were to attain high quality, longer lives free of preventable disease, disability, injury, and premature death. The leading health indicators related to infectious diseases include access to health services, clinical preventive services, environmental quality and social determinants.

**Conclusions/Implications:** The participation of the MMDSON nursing students in the community educational program strengthened the nursing students appreciation for the strategies used to increase the community awareness of the role of public health nursing professional in health promotion and disease prevention with maximizing early reporting.

**Funding:** This abstract was supported by: NIH/NIMHD #U54 MD007598 and NIH/NIMHD #S21 MD000103.

# NURSING EDUCATION STRATEGIES I

## Building Faculty Competence to Guide Student DNP QI Projects

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**Purpose:** To build DNP faculty competency to guide students to conduct and lead quality improvement (QI) projects

**Background:** “Organizational and systems leadership for quality improvement” is one of the essential competencies for advanced nursing practice. DNP students are expected to gain this competency by conducting or participating in a QI project as part of their capstone projects. However, confusions and inconsistencies exist among faculty understanding regarding QI and its underlying concepts of improvement science (IS). We have observed confusion and varied approaches as faculty guide students in DNP QI projects. In order to provide consistent guidance to students, faculty need to have shared understanding of IS concepts and QI language to guide DNP students in gaining knowledge and skills to conduct and lead QI in their future practice.

**Process:** Baseline assessment. The current DNP curriculum was reviewed to identify courses where QI and/or IS are taught. Two courses were identified as focusing on QI/IS concepts of organizational improvement and QI methods. Next, we conducted a faculty survey assessing faculty familiarity with basic QI/IS concepts and confidence in guiding students who conduct QI projects. We learned that a half of faculty responded they are moderately familiar with QI/IS concepts and had previously taught the content, although 60-70% responded they were not confident to teach and guide students conducting a QI project. 52% of respondents indicated they were completely confident to guide students in disseminating QI project, despite the fact that publications from previous student DNP projects in the past are limited.

**Approach:** We have developed online QI learning modules for faculty to have a shared understanding of QI/IS concepts and standardize language to facilitate consistent communication about the QI process. The QI learning modules include: 1) selected readings contrasting the hallmarks of PhD and DNP program; 2) a voice-over-Powerpoint “Foundations of IS for the DNP program”; 3) tips for navigating the IRB process for a QI project; 4) readings about mentoring students; and 5) a guideline for a QI project identifying essential steps and key concepts.

**Outcomes:** Effectiveness of the QI modules is evaluated by faculty at the end of modules. Faculty are encouraged to use the guideline to guide student project as well as to communicate about student progress in the DNP chair meetings. On-going input regarding the use of the guideline is encouraged during chair meetings. We anticipate that there will be improvements in quality and quantity of final DNP QI projects (e.g., content of presentation, number of publications) at the end of this school of year as an outcome of improved faculty competence in guiding DNP QI projects.

**Implications/Conclusions:** DNP faculty have a variety of educational preparation and experiences that inform their understanding of QI/IS and shape their expectations and abilities to guide students in the conduct of a QI/IS project. It is critical for faculty to have a shared understanding and common language in order to reinforce students’ knowledge of IS and to successfully guide students in the conduct and dissemination of high quality DNP QI projects.

# NURSING EDUCATION STRATEGIES I

## Strategies for Strengthening Ethics Education in a Doctor of Nursing Practice Program

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**Background:** Today's nurse practitioners are confronted with increasing ethical dilemmas as they take on larger, more complex patient loads in contemporary practice. Being able to identify ethically challenging situations is step one in determining comprehensive resolutions within an ethical decision-making framework.

**Purpose:** Strengthening nurse practitioner students' ethical decision-making ability is paramount to guiding their future practice. Since its inception, ethics has been a curricular thread and an outcome measure for program competencies in a Doctor of Nursing Practice (DNP) program at a Pacific Northwest University. However, graduates have indicated difficulty identifying and addressing ethical dilemmas.

**Method:** In order to strengthen the DNP program and provide theoretical and ethical underpinnings demanded by the healthcare environment, the curriculum for the health policy and population health courses were selected to provide specific ethics content. These courses are in the first and second year, didactic-only portion of the program. In Spring 2015, a graduate student-faculty team provided a lecture and outlined an ethical framework. Case studies were provided to identify ethical dilemmas in clinical practice. After discussion the students were surveyed to determine the usefulness of the frameworks in resolving the case studies and utilizing the information.

**Outcomes:** In general, the students did not recognize the situations as dilemmas. Subsequently, in Spring 2016, to explore ethical dilemmas encountered by students, a different graduate student-faculty team surveyed the second, third and fourth year students who were in their clinical rotations for exposure to and definitions of ethical dilemmas. Two classes did have exposure to the first team's efforts. Additionally, students were asked for reasons for and barriers to speaking up in ethically challenging situations. From student responses, three case exemplars were crafted and brought back to students for validation. Students agreed the crafted case exemplars were realistic ethical dilemmas. The majority (62%) had experienced ethical dilemmas. Ethical dilemmas were defined as: issues of morality, situations requiring an ethical analysis, situations without a clear right and wrong choice, situations where any given choice violates an ethical principle, and "being stuck between a rock and a hard place." Identified barriers to speaking up about ethical dilemmas included not wanting to upset a preceptor/superior, lack of experience, and not wanting to disclose private information. The response rate was limited yet consistent.

**Conclusion:** Students in their clinical rotations seem to be better primed to identify ethical challenging situations than students in their didactic-only portion of their programs despite previous experience as a registered nurse. Once immersed in clinical rotations, they were able to recognize that not all situations had a clear and singular solution. It is possible that students in the didactic portion of their programs do not have the skills necessary to identify and voice concerns regarding ethical dilemmas. Understanding ethical frameworks and the process required for critical decision making allows for the highest provision of patient care. Identifying the appropriate place in DNP programs to introduce and discuss ethical dilemmas is paramount in developing effective and relevant DNP curriculums.

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**Funding:** University of Portland Dundon-Berchtold Institute for Moral Formation & Applied Ethics.

# NURSING EDUCATION STRATEGIES I

## An Undergraduate Nursing Student Exchange between the United States and Mexico

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Ashland, OR*

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*Trish Kohan, MSN, RN  
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**Purposes/Aims:** This presentation will share how processes and structures were established for an international undergraduate nursing student exchange between two Schools of Nursing: one located in the Pacific Northwest and the other located in Mexico.

**Rationale/Background:** Providing international service learning opportunities for nursing students can be one way to improve their ability to provide culturally competent health care and expand their global vision of health. Two Schools of Nursing are situated in “sister cities” in the United States and Mexico in which there have been multiple opportunities for cultural sharing. Nursing faculty from both Schools of Nursing met and developed relationships in 2011. Seeing similarities in both schools’ community health nursing courses provided an opportunity for development of a student exchange.

**Undertaking/Best Practice/Approach/Methods/Process:** The initial goals of the project were to 1) plan and implement an annual nursing student exchange of approximately 3 weeks in length; 2) select eight students from each school, accompanied by a faculty member, to participate in the exchange; and 3) provide, during the exchange, opportunities for students to participate in community assessments and activities in the identified host community they are visiting. Interinstitutional agreements were developed and executed between both universities prior to student travel. An application process for selection of students was developed. Planning included development of itinerary for sending and receiving students, including projects with local community partners for students to engage in during stay in the host community. Host and visiting faculty coordinated development of the on-site program of study before and during each exchange period. Opportunities were provided for visiting students to report results back to the identified host community as well as to their home university. There were also opportunities, through discussions, presentations and tours of facilities, for the visiting students to learn about the similarities and differences of each health care system.

**Outcomes Achieved/Documented:** To date, two cohorts have traveled southbound and one northbound with plans to sustain an annual exchange for both programs. Students participated in community assessments related to health, nutrition, mental health, and substance use based on community partners’ identified needs. Student reported results and recommendations based to the community and suggested further assessments for future visiting cohorts. Participants valued learning about different healthcare systems, cultural customs, and nursing role similarities and differences and reported this enhanced their understanding of issues surrounding health care access. They also appreciated the opportunity to create and develop cross cultural relationships. Understanding of the process of developing international agreements as well as national and university requirements for student travel are challenges the project team encountered. Another outcome of the project was students’ improved recognition of their responsibility toward global health ethics and what it means to be culturally sensitive.

**Conclusions:** Development of a sustainable nursing student exchange program is possible with committed partners and staff support. Students greatly value the opportunity for international learning. Understanding of the process for international travel for student travel is key to planning a successful exchange.



**Abstracts of Poster Presentations**

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**NURSING EDUCATION STRATEGIES II**

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**CHALLENGES IN NURSING PROFESSIONAL  
VALUES DEVELOPMENT**

*Heidi A. Monroe*

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**HANDOFF AND SITUATIONAL SELF-AWARENESS  
IN UNDERGRADUATE NURSING STUDENTS**

*Staci Warnert, Sarah Wallace*

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**NAVIGATING THE NURSING ACADEMY: STORIES BY  
PHD UNDERREPRESENTED MINORITY STUDENTS**

*Linda D. Gregory, Catherine Waters*

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**BARRIERS TO REGISTERED NURSES' CONSIDERATION  
OF THE ACADEMIC NURSE EDUCATOR ROLE**

*Katie Bagley, Gail Hansen Brenner*

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**PERCEPTIONS OF NURSING INFLUENCING CAREER  
DECISIONS FOR US AND UK STUDENTS**

*Shreya R. Tahiliani*

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**ORGANIZATIONAL LEARNING IN A COLLEGE  
OF NURSING: A LEARNING HISTORY**

*Lisa Echols-Cowan, Bret R. Lyman*

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**PRECEPTORS' EXPERIENCE OF NURSING  
SERVICE-LEARNING PROJECTS**

*Heather Voss*



THE EFFECT OF A DELIRIUM EDUCATION PROGRAM  
IN THE NURSES' KNOWLEDGE AND SELF-CONFIDENCE

*Meredith Padilla*

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EXPLORING WASHINGTON STATE COMMUNITY  
COLLEGE NURSING DIRECTORS HIGH TURNOVER RATE

*Sarah J. Bear*

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ONCOLOGY INTEGRATIVE MEDICINE: KNOWLEDGE  
OF NURSING STUDENTS AND THEIR INSTRUCTORS

*Jiwon Kim, Sunny Wonsun Kim*

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EDUCATING LTC RNS ON ADVANCE CARE PLANNING

*Carol S. Redfield*

## NURSING EDUCATION STRATEGIES II

### Challenges in Nursing Professional Values Development

*Heidi A. Monroe, PhD(c), MSN, RN, CPN*

*Assistant Professor*

*School of Health Sciences, Lydia Green Nursing Program*

*Seattle Pacific University*

*Seattle, WA*

**Purposes/Aims:** The purpose of this study is to measure the professional values of practicing RNs in the state of Washington using the Nurses Professional Values Scale-Revised (NPVS-R; Weis & Schank, 2009), developed from the *Code of Ethics for Nurses* (2001), and to determine if their values are significantly related to certain distinctions. The purpose of this poster presentation is to describe existing gaps in the literature related to nursing professional values development, and to discuss this in-progress research study which may yield data contributing to the strengthening of professional values of practicing nurses.

**Rationale/Conceptual Basis/Background:** Educational differences experienced by nursing students as well as varied work experiences after licensure may affect development of professional nursing values. It remains unclear from prior research how these differences relate to the level of nurses' professional values.

**Methods:** This study utilizes a non-experimental descriptive research design to determine the professional values of Washington State nurses. Data collection is through a quantitative and demographic survey utilizing the NPVS- as the dependent variable. In addition to the NPVS-R, demographic data will be collected for the independent variables of type of pre-licensure nursing program, pre-licensure ethics curriculum method, years of RN work experience, and hours of post-licensure ethics education.

**Results:** This research is currently in-progress.

**Implications:** The exploration of particular variables in this study might lay important groundwork for future studies aiming to predict strong professional values of nurses. The findings of this study may also contribute to the body of knowledge in nursing ethics curriculum design. Cumulative work in this area may target gaps in diverse educational programs and ongoing education of nurses for more effective impacts on professional values development.

Regarding practical significance, conflicts related to professional values have been associated with negative effects such as moral distress, effects upon patient safety, quality of care, persistence in the profession, and legal ramifications (Jameton, 1993; Numminen, Leino-Kilpi, Isoaho, & Meretoja, 2015; Ulrich et al., 2010). Data from this study may provide valuable insights to help strengthen professional values and reduce these conflicts.

This study may contribute to knowledge about differences in pre-licensure programs related to professional values education. If differences exist, academic educators will have additional information to use in pedagogical and curricular discussions. This study may also provide data for clinical educators responsible for new graduate nurse education, to assist them in recognizing influences on professional values and needs of novice nurses. Health care organizations may benefit from data about the value of continuing ethics education for strengthening professional values among experienced nursing staff. In both academic and clinical practice settings, this study may contribute to important knowledge for nurse educators to appropriately prioritize timing and placement of nursing ethics education.

## NURSING EDUCATION STRATEGIES II

### Handoff and Situational Self-Awareness in Undergraduate Nursing Students

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Greely, CO  
Nursing Faculty, Great Basin College  
Elko, NV*

*Sarah Wallace, MSN, RN, CPN, CNE  
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Greely, CO  
Nursing Faculty, Purdue University  
West Lafayette, IN*

**Purpose/Aims:** The purpose of this study is to evaluate an instructional method for teaching undergraduate nursing students handoff communication by examining the relationship between active observation of handoff communication and situational self-awareness.

**Rationale/Conceptual Basis/Background:** Communication handoffs of patient care occur when a patient transitions care between healthcare workers, facilities, or departments. A lack of proper communication and awareness during handoffs may lead to devastating results for patients. Utilizing a structured form of observation during communication may assist with developing nurses' self-awareness and decrease errors. Few studies have examined teaching methods for handoff communication and how students' awareness changes with these observations. Further evaluation of this topic would provide valuable insight for nursing educators implementing best strategies when teaching about communication handoffs and potential barriers that may be present in clinical practice.

**Methods:** This study is a quasi-experimental pretest-posttest design with a comparison group. The primary research question for this study is: Is there a difference in the situational self-awareness of undergraduate nursing students with or without active observation of handoff communication? The hypothesis for this study is: students in the intervention group (who participate in active observation of handoff communication) will have higher levels of situational self-awareness than students in the comparison group (who do not participate in active observation of handoff communication).

Research will be conducted at two institutions with undergraduate nursing students. Convenience sampling methods will be used for this study. Students from the first institution will comprise the intervention group and students from the second institution will comprise the comparison group. The total sample consists of 111 students. A power analysis was conducted based on the study design of a factorial repeated measures ANOVA. Assuming a medium effect size of 0.25, an alpha of 0.05, and a fixed sample of 111, there will be adequate power to test the research hypothesis. Data will be collected in November 2016. Preliminary IRB approval has been obtained from the primary authors' institution.

The Situational Self-Awareness Scale (SSAS) will be used to measure situational self-awareness of all students before and after a clinical experience in an acute care medical-surgical hospital setting with post-clinical conference (pretest and posttest). Data from the Situational Self-Awareness Scale (SSAS) pretests and posttests will be compared between and within the intervention and comparison groups using SPSS and factorial repeated measures ANOVA. The intervention in this study is an educational activity. In addition to attending a clinical experience and post-clinical conference, students in the intervention group will participate in a handoff communication educational activity during post-clinical conference. For the educational activity, participating students will practice, observe, and critique the aspects of handoff communication using the CEX Handoff Communication Provider Evaluation tool.

**Results:** Final data analysis and interpretation will take place December 2016. **Implications for Translation to Practice:** Self-awareness can be increased through everyday experiences and interactions. Utilizing a structured form and observation may assist with developing nursing students' awareness to decrease errors and promote patient safety in nursing practice.

## NURSING EDUCATION STRATEGIES II

### Navigating the Nursing Academy: Stories by PhD Underrepresented Minority Students

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**Purpose/Aims:** The purpose of this study was to examine the experiences of academic socialization and academic progression among underrepresented minority (URM) PhD nursing students. The specific aims were to: **1)** Explore any pre-admission experiences or individual factors that may act as facilitators or barriers to academic success and or attrition; **2)** Describe the social processes of social integration, persistence, academic socialization and academic progression as perceived by URM PhD nursing students attending PWIs; **3)** Describe URM PhD nursing students' perceptions of the availability of and access to institutional resources and support that facilitate or hinder academic socialization and academic progression at PWIs.

**Background/Rationale:** The continued lack of ethnic and racial parity within the nursing academy, especially at PWIs, is of critical concern. The lack of a diverse faculty and student population may contribute to a graduate schools' inability to have robust recruitment and enrollment. While increasing recruitment of URM students is crucial, it is essential to also address the multiple issues related to retention, attrition, academic success, and institutional factors, which may act as barriers or facilitators to the adjustment and transition to the new role as a PhD scholar. Strategies to promote academic success and attainment of a doctoral degree for URM students in nursing at PWIs are critical to the professoriate as well as to the workforce pipeline.

**Methods:** A qualitative constructivist grounded theory approach was applied to this study. Purposive, theoretical sampling was used recruit the sample of 20 doctoral students. In addition, flyers were distributed at local doctoral PWIs. A snowball effect and the use of social media resulted in a national recruitment response. Eligibility criteria included the following: 1) Currently enrolled as a PhD nursing student in public or private PWI nursing program; 2) Must self-identify as an URM, 18 years and older; 3) Speak and understand English. One – on – one semi-structured interviews were audio-recorded, transcribed and data was analyzed using open, focused and axial coding, memoing, and Atlas ti a qualitative software program was used to manage data.

**Results:** Narratives illustrated multiple factors as either having a positive or negative influential effect on the experiences of URMs in PWIs. Three overarching themes emerged, *Preadmission, Becoming a Scholar, and Completion/graduation*; some examples of subcategories included – *family, support systems, decision-making process, culture, race, academic environment, isolation, being the only, etc.*

**Implications:** Very few studies have compared the experiences of URM students enrolled in PhD nursing programs across PWUs. Future research is indicated. Qualitative methods facilitate a deep exploration of the phenomenon and therefore are significant to the design and implementation of interventional studies utilizing either mixed or quantitative methods. Testing interventions will facilitate the development of meaningful and sustainable programs resulting in a sustainable diverse workforce reflective of our communities served.

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## NURSING EDUCATION STRATEGIES II

### Barriers to Registered Nurses' Consideration of the Academic Nurse Educator Role

*Katie Bagley, MSN, RN, Doctoral Student*  
*Marnee Crawford, Doctoral Student*  
*Gail Hansen Brenner, Doctoral Student*  
*Lesa Hoppe, Doctoral Student*  
*Melissa Weir, Doctoral Student*  
*University of Northern Colorado*  
*Greely, CO*

**Purpose:** Multiple reasons for the shortage of nursing faculty have anecdotally been reported among nurse educators and researchers have suggested the basis for a lack of nurse educators are underlying social, personal, and professional challenges (McDermid, Peters, Jackson, & Daly, 2012). However, the literature is not clear if these challenges hold true outside the parameters of nurses currently in career transition, nor have researchers addressed the reasons why nurses choose not to become nurse educators.

**Rationale:** Therefore, the purpose of this qualitative research design study was to develop a deeper understanding of the barriers that are perceived to becoming an academic nurse educator.

**Methods:** Interviews with ten nurses were reviewed and coded by all members of the research team, using thematic analysis to discover overarching themes and sub-categories.

**Results:** Major themes for perception of academic nurse educators included, honorable qualities needed to be an academic nurse educator, similarities between academic nursing education and other nursing roles, differences between academic nursing education and other nursing roles, and benefits of being an academic nursing educator. The barriers identified by the participants in this study can be classified into four overarching themes: barriers related to compensation, the nature of the job of academic teaching, individual qualities or abilities, and the need for an advanced degree.

**Implications:** The findings of this study have the potential to help stakeholders better understand the barriers to becoming a nurse educator through the eyes of the nurses and begin to develop strategies to mitigate the shortage of nursing faculty.

# NURSING EDUCATION STRATEGIES II

## Perceptions of Nursing Influencing Career Decisions for US and UK Students

*Shreja Tahiliani*  
*Honors Student*  
*College of Nursing and Health Innovation*  
*Arizona State University*  
*Phoenix, AZ*

**Purpose:** Examine how perceptions of the profession of nursing influenced career choice for nursing students from the US and UK.

**Background:** Limited research has been published regarding comparative education and career decisions in nursing. Recent literature reports that students most often make their career selections at preschool age or after completing secondary education, citing their desire to make a difference and to help others. Healthcare systems, cultures, and professional employment opportunities vary among nations, influencing career perceptions and choices for aspiring nurses.

**Methods:** IRB approval was obtained for the project. Nursing students in adult health clinical courses in the US and UK were recruited to participate in recorded interviews about reasons for their career choices and perceptions of their family and friends about the nursing profession. Interviews were transcribed and coded using line by line content analysis and hierarchical thematic analysis.

**Results:** Themes emerged including uncertainty of career paths, role of family support, significance of personal experience, and strength of emotional responses.

**Implications for Translation to Practice:** Educators can support students more directly by understanding the influences of nursing career choice in developing professional identity.

**Implications for Further Research:** Deeper investigation into additional comparative aspects of nursing career paths in different countries may provide new opportunities for improving professional education and healthcare worldwide.

## NURSING EDUCATION STRATEGIES II

### Organizational Learning in a College of Nursing: A Learning History

*Lisa Cowan, AS, CAN, Baccalaureate Nursing Student*

*Bret Lyman, PhD, RN, Assistant Professor*

*Hannah Hoyt, CAN, Baccalaureate Nursing Student*

*College of Nursing*

*Brigham Young University*

*Provo, UT*

**Purpose:** A primary purpose of this study was to discover new insights related to organizational learning in a college of nursing that may guide nursing faculty and administrators as they strive to improve outcomes in their own colleges.

**Background:** Organizational learning is highly context-dependent process through which organizations progress toward achieving their desired outcomes. For a college of nursing, desired outcomes may relate to student achievement, faculty productivity, leadership in the profession, etc. Although organizational learning has been studied in a variety of business and industrial settings, it has not been studied in colleges of nursing. Understanding organizational learning in colleges of nursing is important for nursing faculty and administrators who wish to facilitate learning and achieve better outcomes in their own colleges. For this study, the learning history method was selected because it is specifically designed for studying organizational learning and the context in which learning occurred. Given the unique context of colleges of nursing, this method was particularly fitting.

**Methods:** This learning history was conducted with a private college of nursing in the western United States. College stakeholders participated in a focus group to identify college outcomes they felt were notable. These outcomes were used to guide interviews with faculty, staff, administrators, alumni, and students. Relevant artifacts, including college performance data, were gathered to complement the interview data. Thematic analysis was used to identify themes. Findings were validated with a subset of participants and results were presented to the college to facilitate a collective reflection process.

**Results:** College stakeholders identified five notable outcomes: 1) Learning the Healer's Art, 2) Students prepared for clinical practice, 3) Leadership and influence in the community and profession, 4) Global health, and 5) Excellent faculty. Data analysis focused on exploring the context and mechanisms of organizational learning, as it pertains to achieving these outcomes. In terms of context, the college's theme, "Learning the Healer's Art", provided a deep purpose and a shared motivation for all activity within the college. Five themes emerged that offer additional insight into the context and mechanisms of organizational learning within the college: 1) Character and quality of faculty and students, 2) Long-term perspective, 3) Collaborative leadership and adaptation, 4) Mentoring, and 5) Teaching and learning.

**Implications:** Fostering organizational learning is an important step toward achieving desired outcomes in any organization. Contextual factors that are conducive to organizational learning in a college of nursing include the presence of a unifying vision, an emphasis on quality and character in faculty and students, a long-term perspective, and collaborative leadership. Effective mechanisms for facilitating organizational learning may include mentoring and collaborative adaptation, as well as teaching and learning activities. Although additional research is needed to test the generalizability of these findings, they do provide new insight into organizational learning in colleges of nursing and offer some guidance to nursing faculty and administrators as they strive to improve their own colleges.

## NURSING EDUCATION STRATEGIES II

### The Preceptors' Experience of Nursing Service-Learning

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Oregon Health & Science University  
Ashland, OR*

**Purpose:** The purpose of this presentation is to examine elements in community academic partnerships necessary for reciprocal benefits of nursing service-learning projects.

**Background:** Service-learning is a teaching learning strategy in higher education that provides hands on experiences in authentic clinical environments. Mutual decision making, shared goals, reciprocity, and tangible benefits to organizations and the people they serve are hallmarks of service-learning. However, there are few references in the literature pertaining to preceptor experiences with service-learning projects, the extent of reciprocity, or the impact projects have had on those who received the service.

**Method:** A small phenomenological study was conducted to better understand the experiences of four community based health professionals who have worked with nursing students on service-learning projects. Open ended interviews (n=4) and written reflections (n=2) were conducted. Participants highlighted key phrases that they believed captured their meanings in the transcribed interviews (n=4). All data were analyzed by clumping meaning units into categories and then themes. The interviews were analyzed sequentially. The reflections were analyzed separately from, and after the interviews were completed.

**Results:** Four themes emerged from the interviews and reflections: 1. reciprocity; 2. intentional project planning; 3. meaningful-authentic experiences, and 4. met needs.

**Implications for Nursing Education:** Insight gained from the preceptors in this study provides valuable guidance for nurse educators who use service-learning in clinical education and for academic administrators who support them.



## NURSING EDUCATION STRATEGIES II

### The Effect of a Delirium Education Program in the Nurses' Knowledge and Self-Confidence

*Meredith Padilla, PhD, RN, CCRN-CMC-CSC*

**Purpose and Background:** Approximately 10-30% of hospital admissions develop delirium where nearly 30-40% of the delirium cases are preventable. Non-detection rates by acute care healthcare workers were reported at 72-75%. Hence, it is crucial for hospitals to develop delirium education programs focused on early recognition and prevention. Thus, the purpose of this mixed methods study was to develop and evaluate the effect of a Delirium Education Program (DEP) on improving critical care nurses' knowledge and self-confidence in identifying delirium and the associated risk factors.

**Theoretical Framework:** Kolb's Experiential Learning Theory (ELT)

**Methods:** The study was approved by the school's Institutional Review Boards (IRB) and hospital's Clinical Research Office. A sample of 32 critical care nurses from a large community hospital in Southern California participated in the quantitative phase (Phase I) of the study. The participants were randomly assigned to the intervention (n=16) and control (n=16) groups. In the Phase I of the study, both groups completed the online pre-tests and posttests. The intervention group attended the DEP. Data analysis of Phase I informed the decisions regarding the sampling (n=6) for the qualitative strand (Phase II). The quantitative data were analyzed utilizing a mixed model Analysis of Variance (ANOVA) to test whether there are significant effects of the between group subject factor (group membership: intervention vs control), within group subject Time factor (pre-intervention vs post-intervention scores), and the Group by Time interaction. For Phase II, interviews were conducted to gain a deeper understanding of the lived experiences of the nurses related to the DEP. Dataset of the qualitative strand was then embedded into the quantitative dataset to come up with the final results of the study.

**Results:** The results showed an increase in the self-confidence of the nurses who received the intervention. Although the results revealed no significant differences on the knowledge scores between the two groups, the qualitative findings showed that the participants not only indicated knowledge acquisition from the DEP but also reflected on things that they have learned from it. The following five themes permeated the lived experiences of the nurses of the DEP: (1) participants' outlook about the DEP; (2) DEP is high quality; (3) awareness or knowledge of delirium comes with DEP; (4) confidence in recognizing delirium stems from DEP; and 5) delirium: frequent or not?

**Implications for Nursing Practice, Education, and Research:** This research study was conducted from the perspective of a clinical nurse educator in the acute care setting where the results will help support hospital administration, nursing education, and future educators in developing an effective educational intervention to improve nursing staff identification, early recognition of delirium and its associated risk factors and positively impact patient outcomes. This mixed methods study provided more generalizable results, stronger evidence for the conclusion, and a credible approach to understanding the DEP and its effect on nurses' knowledge and self-confidence.

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**Funding:** University of Nevada Las Vegas School of Nursing Yaffa Dahan Scholarship Grant; University of Nevada Las Vegas School of Nursing PhD-DNP Nursing Dissertation Grant.

## NURSING EDUCATION STRATEGIES II

### Exploring Washington State Community College Nursing Director's High Turnover Rate

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**Purpose:** Within Washington State, 55 percent of community and technical colleges (CTC's) have had two to four nursing program directors between 2011 and 2014. Understanding factors influencing poor retention is needed to assure nursing standards are met. Two goals of the study were to identify factors considered supportive to the role and additional supports needed.

**Rationale:** While state statistics and anecdotal discussion at statewide nurse educator meetings support factors leading to job dissatisfaction and intent to quit, no specific qualitative study has focused on deans and directors of nursing programs in Washington State. An exploration of the factors contributing to the high turnover rate in deans and directors of CTC nursing programs should provide insight to the development of appropriate strategies to increase retention in the State of Washington.

**Method:** A qualitative study was conducted allowing ten community college nursing deans and directors across Washington State to tell their story. Two goals of the study were to identify factors considered supportive to the role and additional supports needed. Participants were recruited from the Council on Nursing Education (CNEWS) statewide roster. Each participant completed one face-to-face interview and responded to open-ended structured interview questions that asked them to describe their perception of the study's goals. Prior to data collection human subject's approval was secured from the Human Subjects Division of the University of Washington.

**Results:** Three main themes emerged from this study: *being different*, *being alone*, and *being supported*. Nursing education was described as *being different* than other community college technical programs, in that, nursing required significant amounts of time to educate institutional administration on program needs; constant worry over faculty shortages; and stress over workload and compensation. *Being alone*, a product of organizational structure and orientation processes, ranked high as a stressor for participants. *Being supported* emerged a theme of having adequate resources, such as classroom and simulation space, and access to supplies. Also considered supportive was engagement with peers. Participants unanimously described the state educator meetings (CNEWS) as providing social support and contributing to job satisfaction.

**Implications:** Future practices should support innovative programs that educate community college administrators, such as presidents and vice-presidents to the unique needs of nursing; structured orientation programs for new deans and directors; continued support for statewide strategies that address the nursing faculty shortage and compensation issues; commonalities in position titles and consistencies in role expectations; and continued support for and development of opportunities for peer interaction and engagement are all factors emerged. Strategies to improve the nursing faculty shortage, nursing faculty and administrative compensation, and heavy workloads would most likely lead to a broader pool of applicants for open nursing dean or director positions. This study provided a wealth of information for developing retention strategies that address the high turnover rate in CTC nursing deans and directors.

## NURSING EDUCATION STRATEGIES II

### Oncology Integrative Medicine: Knowledge of Nursing Students and Their Instructors

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*Julie McNulty, RN, PhD, CPHQ, Assistant Professor*

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**Purposes/Aims:** The objective of this qualitative study is to describe the college nursing students' knowledge and their instructors' perspectives on integrative medicine and oncology care, and compare the data of the two populations.

**Background:** Complementary and alternative medicine (CAM), also known as integrative medicine, is an important intervention used for holistic care of patients. It is patient-centered care, addressing multiple aspects of one's health ranging from physical and psychosocial to spiritual influences. CAM has been successful in patients' symptom and stress management, and has grown substantially in recent decades, especially in oncology nursing. Despite widespread use and their support for CAM therapies, nurses' lack of CAM knowledge and vocabulary are barriers to communication with patients. Also, little is known about the student nurses' awareness of CAM and the college instructors' opinions on the intervention, which are crucial in developing the college nursing education on integrative medicine.

**Methods:** Convenience and snowball sampling were used to recruit participants from the community in College of Nursing and Health Innovation (CONHI) at Arizona State University (ASU). Inclusion criteria for student participants were over the age of 18, currently enrolled in ASU BSN Nursing Program, and able to speak and read/write English for an in-depth interview on health topics. Inclusion criteria for faculty participants were current faculty of CONHI at ASU and a minimum of 5 years of experiences as clinical nurses. Data collection consisted of demographic surveys and in-depth interviews that were conducted either in person or over the phone, and were transcribed verbatim. Using a qualitative descriptive design, content and thematic analyses were conducted on the interview data. Two coders participated in coding and resolved inter-coder discrepancies.

**Results:** To date, 5 nursing students and 5 instructors have participated in 30-60 minute interviews. The mean age of the students was 20.4 years and 90% of these participants were female, and 10% male. The mean age of the instructors was 55.8 years and this sample included various nursing professions, such as oncology, hospice care, and obstetrics, with more than 7 years of clinical nursing experience. The preliminary findings show that nursing students' knowledge and understanding about CAM therapies in general was limited. They showed interests in learning more about CAM as well. The instructors had a great understanding of different CAM modalities, and addressed the limited education and resources about CAM in nursing practice. They also supported more education on CAM for nursing students. Both groups of participants expressed the delivery of the CAM therapies combined with the conventional approach is beneficial for patient care.

**Implications:** It is important to include CAM into the nursing curriculum to ensure that nursing students are able to competently respond to patients' need and answer their questions about CAM. As the use of CAM therapies increases among U.S. nurses should be educated about the safety and efficacy of CAM therapies as part of their standard training and must attempt to increase their level of knowledge and access to reliable resources for patient care.

## NURSING EDUCATION STRATEGIES II

### Educating Long Term Care (LTC) Registered Nurse (RN) on Advance Care Planning

*Carol S. Redfield, MN, BSN  
College of Nursing  
University of Utah  
Salt Lake City, UT*

**Purpose:** The purpose of this is to empower LTC RN through competency-based training on Advance Care Planning (ACP).

**Background:** A LTC resident's quality of life depends on individualized care plans which is generated from conversations around resident preferences. Advance care planning (ACP) is one example that requires conversations at various intervals: admission (and re-admissions), condition changes, ad hoc and or regularly updates. Research shows those with ACP have better outcomes, such as less emotional distress, less hospitalization, less use of life-prolonging treatments; and, better end of life care, quality communication and increased satisfaction with healthcare. Lower healthcare cost is also connected to ACP. Despite these benefits, many older persons still die without ACP decisions.

Research also shows that LTC residents have increased their rate of making end of life decisions when given the opportunity and information by healthcare professionals which includes RNs. RN's basic training include thorough assessment, care planning and guiding individuals and families in informed health-care decision-making process. Even though it is the RN's professional responsibility to facilitate ACP as stated by American Nurses Association (1992), legislated by the Patient Self-Determination Act (1991), and charged by the 2014 Institute of Medicine's *Dying in America* report, RNs in LTC settings still are not executing this competency well.

If association exists between RN staff and LTC quality of care, and if LTC resident's quality of life depends on nursing care that is practiced at the specialty competency level, then nurses not facilitating informed health-care decision-making process about future care with residents and families can have grave consequences. Precluding residents the opportunity to express their autonomy and authority over their future care decisions can compromise their quality of life.

**Method:** A pilot education program will be conducted with 8-10 LTC RNs to evaluate shifts in knowledge, attitude, skill comfort, and operation of the ACP process. The education consists of a 2-hour ACP content with emphasis on simulation practice. Repeat measure design will span from pre- to 30 day post training.

**Outcome:** Data will be analyzed to assess if the competency-based training can impact RN's ACP performance in the LTC setting.

**Conclusion:** Results may have implications for providing additional competency-based training in the transition-to-practice arena, beyond basic nursing education, for RNs working with older adults. This may increase ACP uptake initiated by RNs and, thereby, ensuring better quality care, which translates to better quality of life for LTC residents.



## Abstracts of Poster Presentations

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### OBESITY

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#### CHANGES IN SEX HORMONE PROFILES IN WOMEN UNDERGOING INTENTIONAL WEIGHT LOSS

*Kerryn W. Reding, Sophia A. Stone*

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#### MOTIVATED MOMS: A WEIGHT MANAGEMENT PROGRAM FOR OVERWEIGHT AND OBESE POSTPARTUM WOMEN

*Amelia S. Polheber, Kristi Feutz*

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#### INTERVENTIONS TO REDUCE OBESITY IN RURAL-DWELLING ADULTS: A SYSTEMATIC REVIEW

*Demetrius A. Abshire, Katelyn McFaul*

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#### HUNGER (RELATED TO OBESITY): A CONCEPT ANALYSIS

*Alexis J. Hanson, Patricia Daly*

# OBESITY

## Changes in Sex Hormone Profiles in Women Undergoing Intentional Weight Loss

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**Background:** Sedentary lifestyles and obesity are known risk factors for breast cancer. Serum estrogen levels correlate with body mass index (BMI), and the elevated production of estrogens in excess adipose tissue is thought to promote tumorigenesis. There is evidence that lifestyle changes that include increased physical activity and diet modifications can reduce breast cancer risk.

**Project Aims:** The Diet, Exercise, Emotional Processing, and Mindfulness (DEEM) pilot study was designed to investigate whether a 6-month, behaviorally-based dietary and exercise intervention mitigates risk factors in obese/overweight women at high risk for breast cancer.

**Methods:** Overweight/obese women at high risk for breast cancer were randomized to the control (n = 8) or intervention (n = 6) group. Plasma and urine samples were collected at baseline, 3 months, and 6 months. In both urine and plasma, levels of estrone (E1), estradiol (E2), testosterone (T), androstenedione (A-dione), and dehydroepiandrosterone (DHEA) were evaluated by UPLC-MS/MS, and plasma levels of sex hormone binding globulin (SHBG) were measured by ELISA.

**Results:** Intervention women had significantly reduced adiposity (-5.2%) versus controls (1.5%;  $p = 0.041$ ) at 6 months. A 73.3% increase in urinary E1 was observed at 6 months in the intervention group, which differed significantly from the 55.2% decrease in urinary E1 in the control group ( $p = 0.041$ ). Similar trends in urinary E2 levels between the intervention and control groups (20.3% increase and 9.9% decrease, respectively) were not significantly different ( $p = 0.085$ ). The data revealed no significant changes in plasma metabolites at 3 or 6 months in either group.

**Conclusions:** Our study observed elevated urinary estrogens in women in the intervention arm during the time of loss of adiposity, while no change was observed in plasma hormone levels. The results suggest that a rise in urinary estrogens may not be accompanied by a detectable rise in plasma levels. These findings merit further investigation in a larger sample size before conclusions can be drawn.

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**Funding:** This study was supported by the National Institute of Nursing Research (R00 NR012232).

# OBESITY

## Motivated Moms: A Weight Management Program for Overweight and Obese Postpartum Women

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**Purpose:** The purpose of this project was to implement Motivated Moms, an evidence based weight management program for postpartum women, in a community based lactation clinic. Excessive gestational weight gain was reported by 48.5% of pregnant women in the county posing a significant risk for postpartum weight retention. Through the use of diet, social support and self- monitoring, the goal of the Motivated Moms program is to reduce postpartum weight retention and help new mothers achieve a healthy BMI.

**Strength of Evidence:** In 2009, the Institute of Medicine published the report *Weight Gain During Pregnancy: Reexamining the Guidelines* as a call to action for healthcare providers. Long term consequences of postpartum weight retention and subsequent obesity include: postpartum depression, successive pregnancy complications, and chronic health conditions. Research suggests that successful weight management programs utilize a multilevel approach that includes nutrition, social support and self-monitoring.

**Methods:** Proposed Change: Offer the Motivated Moms program as routine care for postpartum women

1. Assess existing community resources
2. Identify organization with interest and lack of services
3. Obtain IRB approval
4. Recruit participants
5. Implement Motivated Moms
6. Evaluate program outcomes

The key stakeholders for this project were the director of lactation clinic, lactation consultants and postpartum women residing in the community

**Results:** Descriptive statistics were used to evaluate weight loss and program participation. Wilcoxon rank sum test was used to compare mean weight loss between low and high level participation groups.  $\chi^2$  analysis revealed the high participation group was significantly more likely to meet the weight loss goal (>5lbs) than the low participation group over an 8 week duration ( $\chi^2 = 3.89, p=0.0483$ ).

**Conclusion:** The implementation of Motivated Moms, an evidence based weight management program for postpartum women, was successful in this outpatient lactation clinic.



# OBESITY

## Interventions to Reduce Obesity in Rural-Dwelling Adults: A Systematic Review

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**Purpose/Aims:** To examine the effectiveness of interventions designed to reduce obesity in rural-dwelling U.S. adults and to determine intervention components that should be used in future studies that target obesity in this population.

**Rationale/Conceptual Basis/Background:** There is a higher prevalence of obesity among adults in rural compared to urban areas of the United States. Higher obesity prevalence among rural adults likely contributes to other rural health disparities including greater burden of chronic conditions and lower life expectancies. Effective interventions are needed to prevent and reduce obesity in rural populations to improve health outcomes and narrow these health disparities. Interventions that have been effective in urban populations may be poor models for interventions designed to achieve similar results in rural populations. People living in rural areas often travel greater distances for medical care, may experience geographic social isolation, have limited access to healthy food, and have inadequate infrastructure to support physical activity. Interventions to prevent and reduce obesity in rural populations should address the complex interrelated factors that are unique to rural-dwelling populations.

**Methods:** This systematic review is being conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Literature searches are being conducted using the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PubMed databases to identify randomized controlled trials of obesity interventions that target rural-dwelling adults living in the United States. Articles will be included if they meet inclusion criteria of being published since 2006, include rural-dwelling adults at least 18 years of age, are written in English, and report changes in body weight or body mass index (BMI). Searches include combinations of the following keywords: obesity, overweight, BMI, weight, diet, nutrition, physical activity, exercise, rural, United States, and America. Search procedures are being conducted by two authors who will critically assess each study selected for review.

**Results:** The review of articles is ongoing. Initial results of a PubMed keyword search using the terms “weight AND rural” resulted in 340 articles that will be screened for eligibility. This number decreased to 115 articles when “United States” was added to the search. Other keyword combinations yielded fewer results.

**Implications:** This systematic review will provide insight about the effectiveness of obesity interventions in rural populations and may reveal potential gaps in knowledge that could be useful for nurse researchers in planning future intervention studies that address prevention and reduction of obesity in rural-dwelling populations.

# OBESITY

## Hunger (Related to Obesity): A Concept Analysis

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**Purposes/Aims:** With an understanding of its derivation and definition, the purpose of this concept analysis is to examine hunger and its relationship to obesity utilizing the Walker and Avant method. The historical perspectives, current use, attributes, antecedents, consequences, and operational definition of hunger will be examined and a model case will be presented.

**Definition of Concept:** The term hunger is described in health care practice and literature as having multiple definitions, meanings, inferences, and assumptions. Comprehension of the term hunger is specific to an individual or group; it may vary in perception whether it is being experienced, observed, or examined. For this analysis, the definition of hunger is: intense craving or need.

**Concept Analysis Process:** The method by Walker and Avant is used to assess:

- The causes of hunger including identification of what influences eating behavior including the food industry's use of salt, sugar, and fat to influence eating.
- The attributes of hunger including, but not limited to, desires and sensations.
- Applicable model cases of this intense craving as underlying disordered eating, as well as management of hunger as the driving force for pharmaceutical and surgical anti-obesity interventions.
- Antecedents including the physical, emotional/psychological, environmental, and situational components leading to hunger.
- Consequences of hunger including, but not limited to, satiety, nourishment, energy, disordered eating, and obesity.
- Empirical referents including food portion size and food type choices (healthy and unhealthy).

**Concept Linkage to Nursing Practice:** Hunger continues to be a relevant concept in literature and in practical application, especially in developing effective interventions for obesity. This is an important concept not only to affected individuals but also to health care providers in developing effective interventions to combat this chronic disease. Sensitizing obese individuals to this intense craving or need may be important to developing long term solutions to the obesity epidemic. Better mechanisms of measuring this innate drive are needed. Exploring the evolving definition of hunger is vital to understanding the role hunger plays in this epidemic. Examining the attributes of hunger is crucial in helping primary care nurse practitioners develop interventions to assist their adult obese clients in achieving and maintaining a healthy weight, decreasing comorbidities, and improving health outcomes.

**Conclusion:** The clarification and understanding of the hunger concept and the effect it has on obesity can be instrumental for nurse practitioner/client interactions enabling affected individuals to identify disordered eating, and for the future development of effective measures and interventions in obesity research.



**Abstracts of Poster Presentations**

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**SYMPOSIUM: AN OVERVIEW OF PROJECTS  
TO INCREASE EFFECTIVE COMMUNICATION  
AND IMPROVE OUTCOMES**

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AN OVERVIEW OF PROJECTS TO INCREASE EFFECTIVE  
COMMUNICATION AND IMPROVE OUTCOMES

*Jane M. Carrington, Benjamin J. Galatzan*

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LEADING TO IMPROVE PATIENT-PROVIDER  
COMMUNICATION IN RURAL COMMUNITIES

*Janay R. Young*

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UNDERSTANDING EFFECTIVE COMMUNICATION  
BETWEEN SCHOOL NURSES AND PROVIDERS

*Luke Huffaker, Jane M. Carrington*

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LEADING THE EFFORT TO EFFECTIVE  
PATIENT-TRIAGE NURSE COMMUNICATION

*Kristyn Huffman*

# AN OVERVIEW OF PROJECTS TO INCREASE EFFECTIVE COMMUNICATION AND IMPROVE OUTCOMES

## An Overview of Projects to Increase Effective Communication and Improve Outcomes

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**Purpose:** Threats to quality care and patient safety due to miscommunication have been well documented. Rural communities, public schools, and emergency departments experience miscommunication leading increased <30-day readmission rates, student absenteeism, and poor resource allocation all of which threatens patient outcomes. Here we present the early work from three doctoral students who are using theory guided projects building on the Effective Nurse-to-Nurse Communication Framework.<sup>1</sup> These students will present their planned quality improvement projects that seek to engage nurses, providers, and patients in effective communication to improve patient outcomes.

**Background:** The Effective Nurse-to-Nurse Communication Framework has previously demonstrated effectiveness in guiding research. Here we will demonstrate its equal effectiveness in guiding quality improvement projects. Quality improvement projects seek to improve outcomes within a practice setting. Here we suggest that ineffective communication threatens care and patient outcomes and can be addressed via systematic quality improvement projects. Further, we hypothesize that this communication framework is applicable to guide quality improvement projects where the practice issue is associated with ineffective communication. This framework depicts a message from the sender to recipient. The sender and recipient use verbal and electronic communication channels. The message is a change in patient condition or clinical event (CE), which presents as a fever, pain, bleeding, changes in respiratory status, level of consciousness, or output. The framework also takes into account the experience and characteristics of the sender and receiver.

**Symposium Organization:** Each presenter has adapted the framework to their clinical communication problem that threatens patient outcomes. Ms. Young seeks to address the rate of <30-day readmission rate of heart failure patients through increasing effective patient-provider communication in the rural southwest. Mr. Huffaker seeks to address miscommunication between the school nurse-provider to reduce the absentee rate of chronically ill school age children. Ms. Huffman seeks to improve patient-nurse communication for more appropriate care in the emergency room.

**Logic Linking Theory to Project Problem:** Quality improvement projects seek to change practice to improve outcomes. Framework guided quality improvement projects facilitate changes in communication and improve patient outcomes.

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Reference:

<sup>1</sup>Carrington, J. M., (2012). Development of a conceptual framework to guide a program of research exploring nurse-to-nurse communication. *CIN: Computers, Informatics, Nursing*, 30(6), 293-299.

# AN OVERVIEW OF PROJECTS TO INCREASE EFFECTIVE COMMUNICATION AND IMPROVE OUTCOMES

## Leading to Improve Patient-Provider Communication in Rural Communities

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**Purposes:** As many as 25% of patients with heart failure (HF) are readmitted to the hospital within 30 days of being discharged leading to increased mortality, decreased quality of life and increased economic burden on the US healthcare system. Ineffective patient-provider communication and decision-making contribute towards this health issue. Guided by the Nurse Communication Framework, we seek to improve patient-provider communication and decision-making by defining clinical events (CE) for HF patients discharged to home. Here we present a planned project that seeks to ultimately reduce the <30-day readmission rate for HF patients in rural communities.

**Theory Description:** The Nurse Communication Framework will be adapted to reflect patient-provider communication in a rural setting. Naturalistic Decision Making (NDM) will then guide this quality improvement project. NDM is an approach to describing the decision-making process used by practitioners in the real world who deal with problems that are; ill-structured, uncertain, occur in dynamic environment, have time constraints, and have ill-defined goals. NDM strengthens intuition by building on experiential knowledge which improves decision-making. Using both NDM and the Nurse Communication Framework provides a pertinent framework to guide clinical scholarship seeking to improve patient-provider communication in the rural setting.

**Process Used:** CEs have been defined as sudden and unexpected change in patient condition and are displayed as fever, pain, bleeding, and change in respiratory status, levels of consciousness, and output. This project will consist of mining structured and unstructured data from a Clinical Data Warehouse (CDW) to define CEs for HF patients. Data from the CDW will be selected, preprocessed, transformed, mined, and evaluated to also identify associations between CEs and action taken in the hospital setting. After the data from the CDW is analyzed, the newly defined norms for CEs in patients with HF will be compared to the defined norm for non-acute patients.

**Logic Linking Theory to Project Problem:** We will present a model that can be used to guide a quality improvement project using the Nurse Communication Framework and NDM to search the CDW for data to define CEs for chronically ill patients with HF. We hypothesize that chronically ill patients with HF will not fit into the classic norms, thereby contributing to the HF patient <30-day readmission rate. This information can be used to develop an algorithm to increase patient-provider communication and decision-making for patient in rural communities.

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Reference:

Carrington, J. M. (2012). Development of a conceptual framework to guide a program of research exploring nurse-to-nurse communication. *CIN: Computers, Informatics, Nursing*, 30(6), 293-299.

# AN OVERVIEW OF PROJECTS TO INCREASE EFFECTIVE COMMUNICATION AND IMPROVE OUTCOMES

## Understanding Effective Communication between School Nurses and Providers

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**Purposes:** With the creation of The Individuals with Disabilities Education Act of 2004 (IDEA 2004), the United States federal government established a standard that all school aged children living with chronic illnesses would be integrated within public school systems. This mandate currently includes an estimated 12 million children living with chronic illnesses such as asthma, seizure disorders, severe allergies, cystic fibrosis, traumatic brain injuries, social anxieties, developmental delay and cancer. Over 6% of school aged children miss 11 or more days of school per year due to illness or injury, risking their scholastic development and success. This mandate has extended the healthcare system into public schools and has placed added responsibility on the school nurse by increasing the average acuity of their student population. Despite the gradually increasing acuity of children attending public schools, communication is typically limited between the school nurse and primary providers who create the treatment plans school nurses are expected to adhere to. The purpose of this presentation is to describe a quality improvement project seeking to increase effective school nurse-provider communication ultimately improving student health outcomes.

**Theory Description:** This project will be guided by an adaptation of the Nurse Communication Framework. Here, the responding nurse is the school nurse who communicates changes in student health status by using both verbal and electronic channels. The provider or receiver then interprets the message and creates treatment plans for individual students in order to create desired health outcomes.

**Process Used:** This project will use a system analysis to learn about current verbal and electronic school nurse-provider communication techniques relating to students who experience sudden and unexpected changes in condition or clinical events (CEs). CEs have been previously defined as fever, pain, bleeding, and change in respiratory status, levels of consciousness, and output. This project will consist of interviews with school nurses, providers, parents, and students from a school district in urban southwest Arizona. These interviews will reveal the current status of communication pathways between school nurses and primary care providers and suggest areas in which improvement can be made to reduce student absenteeism.

**Logic Linking Theory to Project Problem:** Here we will present a plan toward improving effective school nurse-provider communication to reduce absenteeism for chronically ill school age children. This quality improvement project will then inform ongoing efforts to ultimately adopt a well-designed electronic health record in public schools that can be used to foster bi-directional communication channels between healthcare professionals.

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Reference:

Carrington, J. M. (2012). Development of a conceptual framework to guide a program of research exploring nurse-to-nurse communication. *CIN: Computers, Informatics, Nursing*,30(6), 293-299

# AN OVERVIEW OF PROJECTS TO INCREASE EFFECTIVE COMMUNICATION AND IMPROVE OUTCOMES

## Leading the Effort to Effective Patient-Triage Nurse Communication

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**Purposes:** An estimated 130 million patients are seen annually in our nation's emergency departments (EDs). Once patients enter the ED, they are processed via triage and the use of a nationally adopted triage scoring system called the Emergency Severity Index (ESI). This scoring system relies on the triage nurse (TRN) to perform an interview and score the patient's acuity on a scale of 1-5, with 1 being most acutely ill and 5 being least acutely ill. Overcrowding in EDs has resulted in hospitals mandating shorter triage interview times. This results in unreliable ESI scores and the misallocation of ED resources towards patient care, threatening patient outcomes. To streamline the interview process, key questions seeking information about patient history have been eliminated from ED triage at many hospitals. The purpose of this presentation is to present a planned quality improvement project where a "targeted" patient history question will be used in a busy urban ED in southern Arizona to improve the allocation of ED resources and patient outcomes.

**Theory Description:** This project will be guided by an adaptation of the Nurse Communication Framework. This framework describes how the characteristics of two parties, nurse to nurse or nurse to patient, effects the communication of a clinical event. The fundamentals of the Nurse Communication Framework will be adapted to describe the factors which can influence communication and understanding between patient and the TRN. Ultimately, it is the TRN's understanding of the patient's chief complaint which determines the ESI score.

**Process Used:** This quality improvement project will use a single Plan-Do-Study-Act (PDSA) cycle to assess the effects of a targeted history question on ESI scoring and patient placement within the ED. The shortened triage process known as Quick Look is currently integrated into every patient's electronic health record (EHR) as a worksheet, to be completed by the TRN. This project will consist of integrating a single "yes or no" targeted history question into Quick Look within the EHR. Electronic data from the hospital's EHR will be analyzed prior, during, and after the integration of the targeted history question. Data analysis will reveal changes in ESI scoring, patient placement, and the allocation of resources within the ED.

**Logic Linking Theory to Project Problem:** Here we will present a plan that be used to guide a quality improvement project to improve the triage interview and ESI scoring in the ED, guided by the understandings of nurse-patient communication described by the Nurse Communication Framework. We hypothesize that adding a targeted history question to the Quick Look triage interview will improve the TRN's understanding of the patient's chief complaint. As a result, TRNs will be able to more accurately assign ESI scores and allocate patients to appropriate ED treatment areas with the intent of improving patient outcomes.

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### Reference:

Carrington, J. M. (2012). Development of a conceptual framework to guide a program of research exploring nurse-to-nurse communication. *CIN: Computers, Informatics, Nursing*,30(6), 293-299.





**Abstracts of Poster Presentations**

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**PALLIATIVE CARE AND END-OF-LIFE  
PRACTICE**

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**INPATIENT PALLIATIVE CARE IN HEART FAILURE:  
A SNAPSHOT OF CURRENT PRACTICES**

*Kristen J. Overbaugh, Jennifer Healy*

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**BEST PRACTICES FOR OBTAINING PALLIATIVE  
CARE REFERRALS IN THE ICU**

*Dawn Swick*

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**CREATING MEANINGFUL END-OF-LIFE  
EXPERIENCES FOR NURSING EDUCATION**

*Judy Borgen, Patti Warkentin*

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**IMPROVING ADVANCE DIRECTIVE COMPLETION  
RATES THROUGH ADVANCE CARE PLANNING**

*Erica S. Koeppen, Joseph F. Burkard*

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**ASSOCIATION OF SELF-EFFICACY AND HEALTH  
LITERACY IN PEDIATRIC PALLIATIVE CARE**

*Eileen Fry-Bowers, Kathleen Adlard*

# PALLIATIVE CARE AND END-OF-LIFE PRACTICE

## Inpatient Palliative Care in Heart Failure: A Snapshot of Current Practices

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**Purpose:** The overall aim of this project is to develop an educational initiative to improve earlier access to palliative care (PC) services for patients admitted to a tertiary VA hospital with a diagnosis of heart failure (HF). Specifically, as a first step, this study sought to assess the current state of PC for inpatients with HF by examining the prevalence of inpatient PC consultations for HF patients and describing characteristics of this sample.

**Background:** HF which impacts over 5 million Americans is associated with uncertain illness trajectories, a significant symptom burden, substantial morbidity and mortality, and diminished quality of life (QOL). Models of PC for HF patients are being explored to optimize symptom management, facilitate complex decision-making, and provide greater psychosocial and spiritual support. In cancer populations, earlier PC has been shown to enhance QOL for patients and families and increase survival while decreasing aggressive treatment at the end of life. Although PC has been shown to improve symptoms, depression, QOL, and advance care planning in HF, it is not yet widely available to hospitalized HF patients, including those admitted with advanced HF.

**Methods:** A retrospective chart review of patients discharged with a diagnosis of HF was conducted over a period of 8 months. Demographic and clinical variables examined included age, sex, ethnicity, and presence of advance directives (AD), code status, goals of care discussions, co-morbidities, symptoms, ejection fraction, length of stay (LOS), and mortality. Descriptive statistics were examined as appropriate.

**Results:** A total of 176 cases were reviewed. Only 10% of HF patients (n = 17) received PC consultations. Participants who received PC, consistent with a VA population, were all male with a mean age = 71 years, SD = 14 years; 36% were African American, 29% Caucasian, and 18% Hispanic or Latino. This sample had a mean LOS = 12 days, SD = 12 days; 88% had goals of care discussions documented, 76% had AD on file, 47% had DNR orders, 59% were referred to hospice, 18% were referred to outpatient PC, and 18% died in the hospital. Shortness of breath, edema, and weight gain were the symptoms most commonly reported by this cohort, 94% had a reduced ejection fraction, and the most common comorbidities included chronic kidney disease (71%), DM (47%), HTN, (47%) and chronic lung disease (36%).

**Conclusions and Implications:** A very small percentage of HF patients admitted to a tertiary VA hospital with a well-established inter-professional PC service received PC consultations. Findings indicate that most participants were nearing the end of life but importantly had participated in goals of care discussions. Results help to support the need to design interventions to facilitate earlier access to PC and can be used in future studies to evaluate outcomes associated with quality improvement initiatives. In addition, data should be examined in a larger, more diverse population and in relation to other clinically significant and patient and family centered outcomes including readmission rates, satisfaction, and caregiver burden.

# PALLIATIVE CARE AND END-OF-LIFE PRACTICE

## Best Practices for Obtaining Palliative Care Referrals in the ICU

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**Purposes/Aims:** In the Intensive Care Unit (ICU), nurses observed that patients and families facing serious illness or impending death are often focused on lengthening life and not how the illness is impacting quality of life. Palliative care (PC) is focused on the relief of symptoms and the goals of the patient and family until the end of their life. Often times, PC is not referred until close to the end of life. The aim of this project was to examine the evidence and determine the best intervention to increase PC referrals in the ICU.

**Rational/Background:** Death can be difficult to discuss, leading many people to make end-of-life decisions when death or serious illness is imminent. This is further complicated in that patients are not always identified, nor are they always referred to palliative care (PC) services early enough. ICU nurses observed that terminally ill patients are sometimes referred to PC in their final days, thus limiting access to services that could decrease suffering during that time, and promote communication about end of life decisions. The project was conducted during a nursing research and EBP fellowship program.

**Practice Question:** The Johns Hopkins Model for conducting EBP projects was used to evaluate the evidence for the following practice question: What is the best method for obtaining a nurse-driven palliative care referral?

**Approach/Method:** A preliminary review of the evidence suggested that a scoring tool, available for use by direct care nursing staff to trigger a PC referral, might be the most objective mechanism. Following a review of available tools, one created within our own organization by a Clinical Nurse Specialist, appeared to be the best fit and was further examined for implementation. The following steps were taken: 1) Partner with PC team to explain project idea and gain support, 2) Formally educate ICU nurses on goals of PC services and on use of the PC screening tool, 3) Begin process of screening each ICU patient before rounds, reporting on positive screens during rounds, and supporting physician-initiation of PC referral when indicated, 4) Survey nursing staff on their experiences with tool and process.

**Outcomes Achieved:** Focusing on intensivists' patients, nurse-driven PC referrals increased 180% over physician-alone referrals. Using a 5 point Likert Scale, nurses surveyed agreed that screening patients brings attention to PC services, and strongly agreed that all ICU patients should be screened. The primary barrier identified was the additional paperwork to complete during rounds.

**Conclusion:** Implementation of nurse-driven PC referrals was met with a great deal of enthusiasm. The team integrated a successful practice change; the screening tool is consistently used during rounds. Continued work in this area focused on an integrated report sheet and movement beyond the initial patient sub-population (intensivists' patients) to include all patients admitted to our ICU. Future work includes expansion to other ICUs within the hospital system; a pilot is currently underway to determine the workload impact on the PC team when expanding to other ICUs in the system. Formal education is also planned to sustain change.

# PALLIATIVE CARE AND END-OF-LIFE PRACTICE

## Creating Meaningful End-of-Life Experiences for Nursing Education

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**Purpose/Aims:** This purpose is to present an educational innovation offering opportunities in the undergraduate rural nursing setting for students to experience palliative care education. The aims are:

1. To engage undergraduate nursing students, through experiential and intentional learning to develop skills related to end-of-life in nursing education.
2. To promote increased knowledge and transfer of knowledge of palliative education from the clinical setting to professional practice.
3. To incorporate the American Association of Colleges of Nursing competencies from *CARES: Competencies and Recommendations for Educating Undergraduate Nursing Students: Preparing Nurses to Care for the Seriously Ill and their Families*, into the undergraduate nursing curriculum.

**Rationale/Background:** Nurses as healthcare providers most consistently care for patients in an end-of-life setting. Despite this, research shows a relative absence of palliative and end-of-life curricula in nursing education. In addition, literature supports perceptions that the professional practicing nurse does not feel adequately prepared to care for the end-of-life patient. Further, most undergraduate nursing curricula have deficiencies in end-of-life education. Therefore, providing opportunities to address the challenges of end-of-life nursing care education using innovative strategies in the undergraduate nursing setting are critically needed.

**Brief Description of Project:** Using simulation as the framework, a campus clinical site was set up as an innovative answer to the challenges of educating in end-of-life care. Two distinct simulation clinical sites were created on campus to provide a rotation for junior students to become safely immersed in end-of-life scenarios. Through faculty facilitated- student lead research, case development, applied theater/simulation, debriefing and active reflection, the students fully participated in four separate spiraling clinical cases over a four-week period.

**Outcomes:**

- Identified insight and understanding of case development within the chronic illness and palliative setting using case scenarios across the lifespan
- Recognition of ones' own ethical, cultural, and spiritual values and beliefs about chronic illness and death
- Demonstration of respect and compassion for clients and families with cultural, spiritual, ethical, and other diversity needs while providing palliative care
- Provision of competent, compassionate and culturally sensitive care for clients and families in an end-of-life setting

**Conclusions/Recommendations:** Through blogs and group forums, students identified rich learning, meaningful interactions and development of chronic illness course outcomes. Feedback revealed robust support to incorporate student driven case design clinical simulations for chronic illness/end-of-life curriculums. Students describe being challenged both by the context of learning and by the collaborative and dynamic environment of the campus clinical site. Future plans include researching the simulation as a clinical site to evidence clinical learning.

# PALLIATIVE CARE AND END-OF-LIFE PRACTICE

## Improving Advance Directive Completion Rates through Advance Care Planning

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**Purpose:** The purpose of this evidence-based practice (EBP) project is to assess the effectiveness of a multimodal intervention to increase advance care planning discussions (ACP) and advance directive (AD) completion rates.

**Background:** Advance care planning (ACP) and advance directives (AD) are defined as the ongoing discussion and recording of patient preferences and goals of care in the event that patients lose the capacity to speak for themselves. The Center of Disease Control and Prevention (CDC) estimates that 70% of Americans are without ADs. While 82% of Californians say it is important to have end-of-life wishes in writing, only 23% say they have done so. This consistent gap in health care has led the Centers for Medicare and Medicaid Services (CMS) to begin reimbursing for advance care planning consultations. ACP helps to ensure patients are receiving care that is consistent with their wishes. ACP has improved multiple outcomes including higher rates of AD completion and patient satisfaction.

**Project Process:** This evidence-based IRB approved project is ongoing in a primary care setting, where the number of patients with advance directives is unknown. Patients are being identified based on AD completion status, age, and history of at least one chronic illness. Record reviews are being conducted to identify patients ages 65 and over with medical decision making capacity who have at least one chronic illness and no AD on file. These charts are being flagged, indicating the need for ACP and form completion. Participants are being mailed the California Advance Health Care Directive, and a letter of intent addressing the need for AD completion within two weeks of their scheduled appointment with the primary care provider. Following the 2016 CMS guidelines for reimbursement of ACP, a 30-minute face-to-face discussion focusing on ACP is being conducted for each consenting patient. Patients will be encouraged to complete the AD form during the encounter. Social work referral and biweekly follow up phone calls will be conducted for patients unable to complete documentation during the encounter. The data is being collected and analyzed and will be used for pre and post measurements that include: AD completion and ACP discussions.

**Outcomes:** The plan is to evaluate how a multimodal intervention in primary care will increase completion rates of AD's, and ACP discussions.

**Conclusions:** Multimodal interventions have shown to increase completion rates with a specific focus on face to face conversations with trained healthcare professionals. Advance Care Planning may help reduce invasive medical treatment that patients often do not favor towards the end-of-life. Providers are in the best position to know when to bring up sensitive topics such as end of life care. Through this evidence-based quality improvement project, providers will be encouraged to initiate and guide advance care planning discussions.

# PALLIATIVE CARE AND END-OF-LIFE PRACTICE

## The Association of Self-Efficacy and Health Literacy in Pediatric Palliative Care

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**Purpose:** This pilot study evaluates the relationship between parental self-efficacy (PSE) and parental health literacy (PHL) among English- and Spanish-speaking parents of children with complex medical conditions within the context of pediatric palliative care (PPC).

**Background:** Children with medical complexity (CMC) experience frequent and lengthy hospitalizations. With advancements in pediatric care however, many CMC are living longer and, as a result, require integrative approaches to care, which can be met through the provision of timely and appropriate PPC. Importantly, PPC improves symptom management and quality of life for CMC and their families, and provides support in decision-making.

Levels of PSE and PHL can impact parental care taking, communication and decision-making skills. Within the context of PPC, higher levels of PSE have been associated with less caregiver strain and better parental management of pain in seriously ill children and adolescents nearing end of life.

Low health literacy, which is associated with low educational attainment, race, ethnicity, age, and English-speaking ability, can influence the participatory dimensions of the patient-provider relationship, shape patient decision-making, and affect involvement in care. Recent evidence indicates that a large number of U.S. parents possess limited HL skills and additional evidence demonstrates relationships between PHL and specific pediatric health outcomes. Notably, HL is an important factor in end-of-life decision-making for adult populations. Although some studies suggest a correlation between self-efficacy and HL in medically complex or chronically ill adults, to date, no studies have examined the relationships between PSE, PHL, and PPC.

**Method:** We will employ a cross-sectional design using survey methods and convenience sampling. Participants will be English- ( $n = 50$ ) and Spanish-speaking ( $n = 50$ ) parents or primary caregivers of CMC, age 1 – 21 years, receiving care for cancer or cancer related condition at a regional children's hospital cancer institute. Parents will be at least 18 years of age, free from cognitive impairment and willing to participate in the study. PSE will be measured using the *Palliative Care for Parental Self-Efficacy Measure (PCPEM)*, a 43-item tool that asks parents of CMC about their perceived self-efficacy in five domains: 1) medical discussion/decisions; 2) symptom management / medication; 3) daily activities; 4) feelings/concerns; and 5) spirituality. PHL will be measured using the *BRIEF*, a tool consisting four questions, which have been used in numerous studies to screen for level of HL. Child and parent/primary caregiver sociodemographic characteristics will also be collected. All tools will be available in English and Spanish.

**Results:** We will use standard descriptive statistics to report baseline participant characteristics. In addition, we will use logistic regression to analyze associations between PSE, PHL, and parent and child sociodemographic characteristics.

**Implications:** This study will examine the relationships between PSE and PHL in a diverse population of parents of CMC, which has not been explored. Examining these concepts within the context of PPC will address a current gap in the literature, and provide a strong foundation for developing and implementing caregiver interventions in practice to improve quality of life for this growing population and reduce health disparities.

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**Funding:** The Sence Foundation, Visalia, CA.

**Abstracts of Poster Presentations**

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**SYMPOSIUM: THE PERILS OF CONDUCTING  
RESEARCH STUDIES ONLINE**

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**OVERVIEW: THE PERILS OF CONDUCTING  
RESEARCH STUDIES ONLINE**

*Kelley C. Connor, Jane Grassley*

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**PERILS OF USING THE INTERNET TO RECRUIT  
PARTICIPANT FOR ONLINE RESEARCH**

*Kelley C. Connor*

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**THE PERILS OF ENGAGING PARTICIPANTS  
IN ONLINE INTERVENTION STUDIES**

*Jane Grassley*

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**THE PERILS OF USING THE INTERNET  
TO CONDUCT SURVEY RESEARCH**

*Teresa Serratt*



# THE PERILS OF CONDUCTING RESEARCH STUDIES ONLINE

## Overview: The Perils of Conducting Research Studies Online

*Kelley C. Connor, MS, RN  
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*Teresa Serratt, PhD, RN  
Associate Professor  
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**Purposes/Aims:** The purpose of this symposium is to discuss the perils of conducting research using the Internet and strategies for avoiding them.

**Rationale/Background:** The Internet would appear to be an innovative and fertile setting to conduct nursing research. For example, many adolescents and adults report using the Internet as a significant source for their health information, which supports the potential effectiveness of developing and investigating online health promotion interventions. In descriptive survey research, the online environment offers ready access to a larger sample size. However, conducting research online presents investigators with unique challenges, particularly in participant recruitment, retention, and participation in study protocols (e.g. intervention and survey). Researchers who understand the potential challenges of the online environment can better prepare for managing these concerns.

**Process:** The three papers share a common aim of helping colleagues understand the potential challenges of the online environment so they can better prepare for managing these issues. Each paper will address a particular peril that the presenters encountered when conducting research online. The first paper discusses the challenges related to online recruitment and offers suggestions to mitigate fraudulent participation. The second paper describes the challenges of participant engagement in a study evaluating a breastfeeding promotion intervention designed to deliver information using an online gaming platform. Strategies for encouraging ongoing participant engagement will be discussed. The third paper explores strategies for overcoming the perils of conducting survey research online, such as challenges with participant recruitment, ease of access to the survey, and technological issues that may have diminished survey participation.

**Outcomes:** To help other nurse scientists avoid these common perils of the presenters will discuss recommendations related to using the Internet to recruit participants and gather data via surveys, decreasing attrition from an online study, and increasing participant engagement.

**Conclusions:** The Internet can be effective environment for conducting research if researchers identify and plan for the challenges they may encounter. Guidelines describing best practices for using the online environment for research need to be developed.

# THE PERILS OF CONDUCTING RESEARCH STUDIES ONLINE

## The Perils of Using the Internet to Recruit Participants for Online Research

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Boise State University  
Boise, ID*

**Purpose/Aims:** The purpose of this paper is to explore challenges related to online recruitment and offer suggestions to mitigate fraudulent participation.

**Rationale/Background:** Research using Internet-based techniques to recruit and provide interventions for online participants are increasingly common. Benefits of online research include ease of outreach to participants and decreased recruitment costs. However, due to the anonymity of the Internet, there are risks for fraudulent participation. Researchers should be aware of these risks and strategies to mitigate them.

**Process:** This paper describes challenges encountered recruiting participants for the study evaluating *Healthy Moms*, an antenatal breastfeeding education intervention. In this study, participants were asked to contact one of the primary researchers for information and to give consent to participate. The researcher would then email logon information to *Healthy Moms* where participants were asked to complete a pre-survey, engage in breastfeeding education modules, and then take a post-survey. Participants received an electronic \$10 gift-card for completing the pre-survey and an electronic \$20 gift-card when they completed the post-survey.

Initially study recruitment was conducted through flyers at community groups supporting pregnant women, healthcare facilities, a high school for pregnant adolescents, and a university campus. Recruitment was less than anticipated so an informational website was created to promote the study.

Interest in the study increased, however, fraudulent requests were suspected due to use of language in the requests and the use of unlikely names or pregnancy information of potential participants. Individuals who requested to participate in the study were screened by researchers for authenticity. Email addresses and survey responses were evaluated through Internet search engines and by Internet Protocol (IP) addresses queries to determine if the origination of the participant appeared to be legitimate.

**Outcomes:** Findings included email addresses that appeared in blogs advertising earning money by participating in Internet research, multiple email addresses originating from the same IP address requesting to participate in the study using different participant names, and countries of origin outside the United States.

**Conclusions:** Online researchers should attempt to engage online participants, but be alert for fraud. Strategies to minimize false participation include verifying participant authenticity by telephone, entering potential email addresses into an Internet search engine, and looking up IP addresses of potential or actual participants to determine their geolocation. Finally, consider if the participant compensation method would be attractive to imposters.

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**Funding:** This presentation was made possible by a grant from the National Institute of General Medical Science (5U54 GM104944) from the National Institutes of Health.

# THE PERILS OF CONDUCTING RESEARCH STUDIES ONLINE

## The Perils of Engaging Participants in Online Intervention Studies

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**Purpose/Aims:** The purpose of this paper is to explore the challenge of study participant attrition when using the Internet to conduct health intervention research and to identify strategies that encourage participant engagement.

**Rationale/Background:** The Internet appears to be a fertile setting to conduct health promotion research, particularly for women of childbearing age. This population often uses the Internet for health information supporting development of an online intervention to improve women's access to breastfeeding information. The online environment offers access to potential participants, and ease in participant consent and data collection. Surveys can be delivered, tracked, and downloaded into a database. Intervention fidelity can be strengthened because all participants receive the same information delivered in the same way. In addition, computer platforms can enhance the researchers' ability to access and calculate individual participants' intervention dosage. Although computer-based health intervention research appears alluring, researchers need to understand and plan for potential challenges when conducting intervention studies online.

**Description:** This paper describes the challenges encountered when conducting a study to evaluate *Healthy Moms*, an antenatal breastfeeding education intervention that delivered information in 12 quests or learning modules using an online learning platform. Participants were recruited online through a study web site and flyers. Those interested emailed the researchers. After providing consent electronically, they received a login to *Healthy Moms*, which used a game-based learning platform. They then could complete the online pretest, orientation modules, and begin their "quests". Participants had one month to complete the intervention. Participant engagement was a major challenge. Of the 41 participants who enrolled 25 submitted the pretest and 19 the post-test. Of those submitting the pretest, 11 women completed no breastfeeding quests and eight completed one to six quests. Six women completed 10 to 12 quests.

**Outcomes:** Factors that influenced participant engagement were identified. These included the formal login required by the learning platform, one month as not enough time to complete the learning modules, too many orientation modules, and difficulty accessing the intervention on-line. Strategies that could facilitate intervention engagement were explored and included using more accessible mobile technologies (e. g. cell phone applications or social media) and revising the way the information is delivered.

**Conclusions:** Although computer-based education seems like an efficient way to deliver breastfeeding and other health promotion information, user practices and priorities for information need to be investigated. A community engagement study is planned to explore women's experiences of using current web-based technologies to determine preferred online delivery formats as well as the essential information they need to facilitate breastfeeding.

# THE PERILS OF CONDUCTING RESEARCH STUDIES ONLINE

## The Perils of Using the Internet to Conduct Survey Research

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Boise State University  
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**Purpose/Aims:** The purpose of this presentation is to utilize a completed research endeavor as a case study to explore potential issues related to utilizing the internet to conduct online research and discuss strategies that may improve study success.

**Rationale/Background:** The proliferation of online surveys to collect a broad array of information-from customer service and product satisfaction to population demographics, has become a mainstream phenomenon. Online surveys offer a means to collect data that may be of a sensitive nature, from a large number of participants relatively quickly. If the internet is utilized to recruit participants and deliver the survey, these studies may also be less resource intensive than traditional mailed surveys or personal interviews. Although there are significant positive aspects, researchers new to the use of the internet for conducting survey research may hold some assumptions regarding accessibility, ease, and cost that can result in less than optimal results.

**Description:** In 2009, the State of Nevada mandated that hospitals establish a staffing committee and submit a report to the Department of Health and Human Services of their staffing plan annually. Three years after this legislation was passed, nurses across the state were expressing concerns that staffing committees had not been not implemented at their facility or was not effective in ensuring adequate staffing. The purpose of the study was to assess the perceptions of staff nurses, nurse managers, charge nurses/shift managers, nurse executives and other nurses as to the effectiveness of this legislation (Nevada Revised Statute, Chapter 449). Nurse and hospital demographic information, participant qualifying questions, and specific questions related to nurses' general knowledge of the staffing committee mandate, as well as their perceptions of the effectiveness of this legislation was collected via an online survey using SurveyMonkey®. The results of this study were to be shared with legislators and other key stakeholders as they considered a bill that would mandate nurse-to-patient ratios in the upcoming legislative session. What was expected to be a comprehensive, timely, and cost effective study became an experience that ultimately informed and enriched the methodological expertise of the researcher. Using this research as a case study, the assumptions that led to some of the study challenges will be explored. Additionally, successful strategies, as well as strategies that, in retrospect, would have resulted in a much more successful study will be discussed.

**Outcomes:** This presentation reviews the 'lesson's learned' in conducting an online survey and presents strategies for better participant recruitment and to enhance the ease of participation, which may be beneficial for other researchers considering conducting online surveys.

**Conclusions:** Conducting survey research online can be an effective means to reach geographically diverse participants and obtain timely information in a cost effective manner. However, challenging commonly held assumptions and utilizing appropriate strategies can produce a more effective study.

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**Funding:** Nevada Nurses Association, Smernoff Foundation & private donor.



## Abstracts of Poster Presentations

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### PRACTICE CHANGE/ACUTE CARE

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ORAL CARE AND THE PREVENTION OF HOSPITAL  
ACQUIRED PNEUMONIA IN NON-VENTILATED PATIENTS

*Shandeigh N. Berry*

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IMPROVING FIRST CASE STARTS  
IN INTERVENTIONAL RADIOLOGY

*Paulo Jusay*

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SUPPORTIVE CARE NURSING PROTOCOL  
FOR A PUBLIC ACUTE CARE HOSPITAL

*Jutara Srivali Teal, Dana Rutledge*

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IMPROVING OUTCOMES IN DERMAL FILLER CLIENTS  
USING A QSEN BASED COMPETENCY ASSESSMENT

*Kathy James, Stacey D. Stephens Ross*

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DEVELOPMENT OF A POST BURN  
PRURITUS RELIEF PROTOCOL

*Yeon S. Kim*

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LEARNING FROM ERRORS IN HOSPITALS:  
A REALIST REVIEW OF THE LITERATURE

*Britney M. Rencher, Bret R. Lyman*

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THE EFFECT OF THE MAGNET RECOGNITION  
PROGRAM ON PATIENT SATISFACTION

*Carri Wyn Claycomb*

WHEN NURSES ARE CONCERNED: TACTICS NURSES  
EMPLOY TO MANAGE PATIENT SAFETY

*Marla Jean Seacrist, Michelle Sarah Arellanez*

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MIDRANGE BRADEN SUBSCALES ASSOCIATED WITH  
INCREASED RISK FOR PRESSURE INJURY IN THE ICU

*Jenny Alderden, Mollie Cummins*

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NURSES' PERSPECTIVES ON BARRIERS TO PROMOTING  
MOBILITY IN HOSPITALIZED OLDER PATIENTS

*Gordana Dermody*

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OPTIMIZING ACCOUNTABLE CARE  
COORDINATION TEAMS

*Nora Flucke*

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THE RN-PATIENT DECISION MAKING THEORETICAL  
MODEL: A MULTILEVEL APPROACH

*Kristy Haun*

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A MULTI-DISCIPLINARY APPROACH TO THE  
REDUCTION IN VENTILATOR-ASSOCIATED PNEUMONIA

*Gina Finical, Cheri Winter*

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LEADING PRACTICE CHANGE BY FORCING  
ENTERIC TUBE VERIFICATION VIA THE EMR

*Barbara Ju*

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DEVELOPMENT OF PEER REVIEW  
FOR CLINICAL OUTCOMES

*Jenn Hoffarth, Salomeja M. Garolis*

SILVER CATHETERS: MINIMIZING RISK IN  
THE NEURO-CRITICAL CARE POPULATION

*Sandra L. Maddux, Carol Simmons*

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INNOVATION IN COLLABORATION: MEETING THE  
NEEDS OF NURSING EDUCATION AND EMPLOYERS

*Jenny Landen*

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CARE TRANSITION/READMISSIONS PREVENTION:  
RN FOLLOW-UP CALLS TO DISCHARGED PATIENTS

*Alison L. Keith, Lynne C. Andrus*

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CARE TRANSITION/READMISSIONS PREVENTION:  
RN NAVIGATOR & PHARMACIST PATIENT CONSULTS

*Carmencita Esteve, Lynne C. Andrus*

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SIMILARITIES AND DIFFERENCES IN STATE  
PROVISIONS FOR DELEGATION OF NURSING TASKS

*Elena Siegel, Kristen Bettega*

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RESILIENCE AT WORK AMONG FIRST-LINE  
NURSE MANAGERS

*Ron C. Carpio, Laura P. Castro*



## PRACTICE CHANGE/ACUTE CARE

### The Role of Oral Care in the Prevention of Hospital Acquired Pneumonia in Non-Ventilated Patients

*Shandeigh N. Berry  
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**Purpose:** To demonstrate the significant role oral care plays in the reduction of hospital acquired pneumonia (HAP) in non-ventilated patients when implemented at least twice daily.

**Synthesis of Evidence:** HAP is a leading nosocomial infection, resulting in poor patient outcome, an increase in length of hospital stay, and increased non-reimbursable expense. Non-ventilated patients account for more than 60% of HAP cases. The combination of increased oral microorganisms (which replicate by 4 billion every 4-6 hours) introduced into the lower respiratory tract through microaspiration, and a weakened host leave all hospitalized patients at risk for HAP, rather than ventilated patients only. Oral swabs and mouth wash have not demonstrated adequate reduction in oral bioburden. Mechanically removing oral biofilm using a tooth brush decreases the number of pathogens introduced into the pulmonary system via microaspiration. By brushing patients' teeth at least twice daily, the risk of HAP is dramatically reduced.

**Proposed Change in Practice:** An oral care protocol was developed and is being implemented on the surgical unit. The protocol contains three components: 1. Provide education to patients regarding the importance of oral care based on the relationship between oral microorganisms and HAP; 2. Provide oral care (brushing teeth) at least twice daily; 2. Document oral care provided.

**Implementing Strategies:** Education was provided to the surgical unit nursing staff on the pathophysiology of pneumonia, emphasizing the oral/pulmonary connection. The oral care protocol was presented to staff and flyers were placed throughout the unit; an educational poster board was placed in the staff break room. Monthly oral care audits are being completed and e-mailed to staff.

**Evaluation:** A decrease from baseline HAP rates in non-ventilated patients will demonstrate a successful outcome. Quarterly evaluation of HAP cases on the surgical unit are being conducted. Compliance is assessed through audits of oral care documentation. The success of the practice change will be demonstrated by an increase of oral care provision and a reduction in HAP developed in non-ventilated patients.

**Conclusion:** In this ongoing practice change, a decrease in HAP will highlight the importance of focusing on non-ventilated patients as well as ventilated patients. Preventative measures against HAP via oral care administration is an inexpensive care measure that can significantly reduce the risk of developing HAP, significantly improving patient outcome, as well as shortening length of stay, and decreasing non-reimbursable costs related to the treatment of HAP.

# PRACTICE CHANGE/ACUTE CARE

## Improving First Case Starts in Interventional Radiology

*Paulo Jusay*

*California State University, Fullerton*

The occurrences of case delays in Interventional radiology (IR) have a significant impact on the delivery of high quality medical care in hospital settings. During the months of November 2015 to April 2016, on-time First Case Start (FCS) in a 215-bed California tertiary medical center was approximately 21 percent. On time FCS is significant because a delay in the first case causes a ripple effect of subsequent delays to the remaining scheduled IR cases for the day. Delays in the first case have led to prolonged patient wait times, case cancellation, staff frustration, increased staff workload, delays in treating patients with acute illness (“add-on” case), and decreased patient satisfaction (Nundy et al., 2008). Moreover, delays can impact patient safety and increase cost (Porta et al., 2013).

The purpose this quality improvement project is to decrease case delays in IR by improving first case starts (FCS). This quality improvement initiative proposes the implementation of a planning and preparation checklist for all scheduled IR patients. The checklist will be supplemented by a briefing that will occur the day before the scheduled case. Methods will include evaluating FCS before and after implementation of the checklist and briefing for all scheduled procedures in IR. Metrics will consist of time reports that include outpatient arrival check-in to radiology reception, patient time-in the IR suite, and actual start time when FCS is delayed and reasons for delays. An interdisciplinary quality improvement team representative of all stakeholders in the process of IR patient care will be formed. The team will meet weekly in person. An agenda will be used to communicate the proposed meeting content. During project initiation, patient workflow will be reviewed and mapped, and the appropriate metrics to be collected will be defined. Results will be analyzed and presented.

Nursing leadership is imperative in any quality initiative process. The implementation of a checklist and team briefing will standardize the IR pre-procedural process and improve communication among team members. Creating a standardized data collection process will also allow for examining other systems and process related delays. This quality improvement project can improve first case starts and decrease overall delays can promote delivering high quality medical care and save money.

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# PRACTICE CHANGE/ACUTE CARE

## Supportive Care Nursing Protocol for a Public Acute Care Hospital

*Jutara Srivali Teal, RN, MSN; Dana N. Rutledge, RN, PhD; Sue Robertson, RN, PhD*

**Purpose:** The purpose of this project was to develop a Supportive Care Nursing Protocol (SCNP) to assist acute care medical-surgical nurses to systematically address the needs of seriously ill patients who require supportive care beyond that provided by acute care nursing protocols.

**Background:** Seriously ill inpatients often have needs that are unmet by routine acute care protocols. Some of these needs may be addressed by the multidisciplinary palliative care team. However, palliative care consultation requires a physician order, and thus palliation may arrive late in an illness trajectory. Delaying palliative care collaboration can be an ethical challenge, and may result in moral distress when patient care is not optimal. There are supportive independent nursing interventions that can address some unmet needs of the seriously ill. Using non-pharmacological interventions for symptom management, assessing for signs of active dying, and facilitating communication with the patient and family during this process are independent nursing actions can be a part of supportive care. However, many nurses are not proficient in supportive care strategies.

**Methods:** The SCNP was developed using national guidelines and evidence-based interventions. A search for evidence used to develop the SCNP included CINAHL and PubMed. Searches in the National Center for Complementary and Integrative Health ([nccih.nih.gov](http://nccih.nih.gov)) and the Agency for Healthcare Research and Quality (AHRQ) were also performed. An assessment of nursing knowledge of palliative care was done prior to SCNP implementation.

The KTA (Knowledge to Action) framework was used to develop the protocol and help plan its implementation/evaluation. The SCNP is a knowledge tool tailored to meet the needs of nurses in a large public tertiary academic hospital. The SCNP outlines consistent assessment of symptoms of the seriously ill. Assessment tools are included in the SCNP along with references for delirium recognition and signs of active dying. Evidence-based independent nursing interventions are suggested. Prompts for interdisciplinary collaboration are included to encourage the nurse to advocate for Comfort Care orders when imminent death approaches.

**Outcomes:** The SCNP is projected for implementation in Spring 2017. Key indicators for successful implementation include increased nursing knowledge and the frequency of protocol implementation as evidenced in the electronic health record. Increased palliative care consultation requests and Comfort Care orders would indicate appropriate use of interdisciplinary collaboration prompts.

**Conclusions:** Implementation of the SCNP will empower nurses with early identification and treatment of common symptoms of the seriously ill and provide evidence-based strategies to alleviate suffering.

# PRACTICE CHANGE/ACUTE CARE

## Improving Outcomes in Dermal Filler Clients Using a QSEN-Based Competency Assessment

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**Purpose:** The purpose of this evidenced-based project was to decrease adverse events (AEs) associated with dermal filler injections by creating a competency-based assessment and training program using our evidence based (EB) protocols, placed in the Quality and Safety Education for Nurses (QSEN) and Novice to Expert format.

**Background:** Aesthetic nursing is a new branch of nursing practice. Formal nursing education and standards are lacking, making it challenging to assess competency. AEs range from minor (bruising) to severe (vascular compromise) and can be associated with poor technique or lack of knowledge. Standardized practice using EB protocols is necessary to provide safe, high quality care. The IOM and The Joint Commission recommends use of QSEN competencies to promote safety and improve healthcare outcomes. QSEN competency statements are divided into categories of Knowledge, Skills, and Attitudes (KSAs).

Due to varied training, “experienced” aesthetic nurses, may or may not perform competently. After doubling the staff of “experienced” injectors at the medical spa, dermal filler AEs doubled over one year. AEs at the medical spa are defined as anything that causes a client return visit, post-injection, due to a complaint. The majority of AEs are lumps, asymmetry, and rarely vascular compromise.

**Methods/Process:** A competency assessment form, with customized training, was developed using the QSEN format. All physician assistants and nursing staff, RNs and NPs (n=10) at two separate locations completed the assessment and training within a four month period. Providers had to demonstrate all KSAs at the “competent” level. All staff self-evaluated and were objectively evaluated on a Novice to Expert Scale. Anything noted as less than “competent” in the KSA was addressed using customized training programs. AEs were monitored monthly.

**Outcomes:** Results are pending.

**Conclusions:** All aesthetic providers in a medical spa will be assessed, trained, and annually evaluated using the QSEN based competency assessment program to promote safety, improve outcomes and decrease cost associated with AEs in clients seeking aesthetic medical treatments.

# PRACTICE CHANGE/ACUTE CARE

## Development of a Post Burn Pruritus Relief Protocol

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**Purpose:** This article is to show how to relieve post burn pruritus (PBP) effectively by developing a post burn pruritus relief protocol.

**Background:** PBP is a syndrome of stressful symptoms that is pervasive and occurs in over 90% of burn patients and continues for years after the burn has healed. Post burn pruritus is commonly experienced by burn survivors that may require medical management and effective interventions. Although pruritus in post burn patients is well recognized, there is no consensus on standardized treatment for PBP.

**Design:** A systematic review was conducted from September 1, 2013 to November 17, 2014 for 79 relevant empirical articles to create a post burn pruritus relief protocol. Thirty eight out of 79 articles were selected using pre-established inclusion criteria: any age group experiencing burn related pruritus after second or third degree burns.

**Conclusions:** This protocol included both non-pharmacological and pharmacological interventions that have been delineated for use and was developed to apply based on the healing stage: pre-healing, healing, and post-healing.

**Recommendation:** Clinicians need to validate the efficacy of this PBP relief protocol through intervention studies by determining if the protocol: 1) relieved pruritus discomfort; 2) reduced cognitive dysfunctions such as low concentration, agitation, anxiety, and/or flat affect; and, 3) increased quality of life.

# PRACTICE CHANGE/ACUTE CARE

## Learning from Errors in Hospitals: A Realist Review of the Literature

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**Purpose:** The purpose of this realist review is to better understand the process of learning from errors in hospitals, thus helping nurses lead their hospitals toward improved quality and safety.

**Background:** Preventable medical errors are the third leading cause of death in the United States, leading to approximately 400,000 deaths each year. Every error presents a critical opportunity for a hospital to learn, thus reducing error rates and improving patient safety. However, evidence indicates that many errors do not lead to organizational learning. In order to better understand the process of learning from error in hospitals, a realist review was initiated. Realist reviews are systematic, rigorous reviews of the literature that are designed to provide insight into processes (such as learning from error) that are complex and heavily context-dependent. The results of this review provide insight into why hospitals miss opportunities to learn from errors and how nurses can facilitate learning from errors in their hospitals. To our knowledge, this realist review is the first to focus on learning from error as a form of organizational learning.

**Methods:** The articles used in this realist review are a subset of those obtained for a realist review of organizational learning in hospitals. A rigorous, systematic search in CINAHL, MEDLINE, Academic Search Premier, Business Source Premier, PsychINFO, SCOPUS, Web of Science, and Sociological Abstracts resulted in approximately 2,300 articles. Using specific, predetermined inclusion/exclusion criteria, articles were systematically sorted first by title and then by abstract. A total of 458 articles were advanced for full-text review, 197 of which met the inclusion criteria for the realist review on organizational learning. Of these articles, 26 focused specifically on learning from errors and were included in this review.

**Results:** During the data extraction and synthesis process, a proposed model by which hospitals can learn from error emerged. This model includes six distinct, sequential steps, which are: 1) Recognizing and acknowledging that an error occurred, 2) Reporting the error, 3) Analyzing the error, 4) Accurately interpreting factors contributing to the error, 5) Implementing an appropriate solution, and 6) Evaluating whether the solution was effective. Although this sixth step was not explicitly expressed in the articles included in this review, other literature validates the importance of evaluation in learning from error. If a hospital successfully progresses through each of these steps for an error, it is anticipated that learning will occur. Additional findings from this review offer insight into contextual factors (such as psychological safety, manager feedback, and open communication) that influence successful progression through each step and, subsequently, learning from error.

**Implications:** Learning from errors is a complex and context-dependent process. As a result, opportunities to learn are often missed. This realist review offers a proposed model of how hospitals can learn from errors. Although additional research is needed to further validate this model, these preliminary findings provide guidance to nurse leaders who wish to foster learning from error and improve quality and safety in their hospitals.

# PRACTICE CHANGE/ACUTE CARE

## The Effect of the Magnet Recognition Program on Patient Satisfaction

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**Purposes/Aims:** The purpose of this quantitative causal-comparative study was to address the gap in literature regarding differences in patient satisfaction between Magnet and non-Magnet hospitals within the United States after controlling for hospital bed size, teaching affiliation, and ownership type. Specifically, the study addressed the differences in the percentage of patients who (1) gave an overall hospital rating of a 9 or 10 (2) stated they “Always” received help as soon as they wanted and (3) reported their nurse “Always” communicated well with them between Magnet and non-Magnet hospitals.

**Rationale/Conceptual Basis/Background:** In 2012, the Centers for Medicare & Medicaid Services announced they were reducing Medicare reimbursement by 1% (2% in 2017) for all hospitals to create a reserve of \$1 billion dollars to incentivize hospitals to earn this money back by improving patient satisfaction and clinical outcomes. The stakes are high for hospitals in the United States to make improvements on patient satisfaction scores, as the patients’ subjective perspective of the hospital stay will now influence the hospitals’ bottom line. Donabedian’s structure-process-outcome was the framework used for this study. Based on the structure-process-outcome framework, hospital structures influence the way healthcare is delivered to patients (process) and subsequently this affects patient outcome such as satisfaction.

**Methods:** This was a quantitative, causal comparative study that utilized the ANCOVA model to answer the three research questions. Does the Magnet Recognition Program influence patient satisfaction as measured by:

- Overall hospital rating after controlling for bed size, ownership type, and teaching affiliation?
- The percentage of patients who report they “Always” received help as soon as they wanted after controlling for bed size?
- The percentage of patients who report their nurse “Always” communicated well with them after controlling for bed size and ownership type?

**Results:** There was a significant positive difference in the percentage of patients who rated the hospital a 9 or 10 between Magnet and non-Magnet hospitals after controlling for bed size, ownership type, and teaching affiliation,  $F(1, 395) = 32.93, p = <.001$ . Additionally, there was a significant positive difference in the percentage of patients who reported the “Always” received help as soon as they wanted between Magnet and non-Magnet hospitals after controlling for bed size,  $F(1, 397) = 22.09, p = <.001$ . Finally, there was a significant positive difference in the percentage of patients who reported their nurse “Always” communicated well with them between Magnet and non-Magnet hospitals after controlling for bed size and ownership type,  $F(1, 396) = 49.24, p = <.001$ .

**Implications:** Hospitals that have Magnet accreditation had higher patient satisfaction scores for overall hospital rating, nurse communication, and responsiveness of staff than non-Magnet recognized hospitals. Incorporating principles of the Magnet Recognition Program (structural empowerment, exemplary professional practice, transformational leadership, new knowledge/innovations/improvements, and empirical outcomes) may lead to better hospitals finances by receiving higher Medicare reimbursement for better patient satisfaction scores.

# PRACTICE CHANGE/ACUTE CARE

## When Nurses Are Concerned: Tactics Nurses Employ to Manage Patient Safety

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**Purpose:** The purpose of this study was to explore tactics that nurses employ when they become concerned about their patients.

**Background:** Functioning as the eyes and ears of the healthcare team, nurses are accountable for recognizing the patient who is exhibiting early clinical signs of deterioration. Although some signs provide clear direction, other signs are more subtle requiring nurses to probe more deeply while using clinical reasoning to select the appropriate response. For safe patient care, nurses need a strong knowledge base, clinical reasoning skills, as well as the ability to be fully aware of their patient situation. Intuition is one element of clinical reasoning that nurses employ, including self-knowledge in recognizing changes. Intuition is also a cognitive skill that is developed over time. The nurses' intuitive skill contributes to when they recognize signs of clinical deterioration and which intervention they will choose. Other elements of clinical reasoning include the ability to appropriate interventions contextually. Tactics nurses employ in their assessment, interventions, and decision making process have not been fully explored.

**Methodology:** Sample consists of Registered Nurses practicing in the acute care setting. Grounded theory is the method of analysis. Data consists of digital audio files and verbatim transcripts. Data are examined using the constant comparative method.

**Results:** Nurses describe four major tactics they employ when concerned about their patients status: calm demeanor, further assessment, exhausting their own resources first, and then seeking advice and support from others. Nurses describe a variety of situations that make them concerned about their patients. Themes include both diagnostic and physiological findings such as vital signs, urine output, respiratory distress, lethargy, and laboratory values. Intuition is described as a gut feeling that also occurs in conjunction with becoming concerned. The most frequently described resource nurses use is other nurses. They also use physicians, ancillary healthcare team members, internet resources, textbooks, and professional organizations. Decisions made by concerned nurses are dependent on the patient condition and the context of the situation. When accessing others, nurses chose those with more experience or ones they respect, avoiding others that they did not think had the skill set they needed to arrive at an accurate conclusion regarding the patient's status.

**Implications:** Nurses frequently consult each other when they become concerned about their patients. Supporting our colleagues during complex experiences is an important role, especially for experienced and well respected nurses. Debriefing was also a support strategy identified to improve self-reflection and experiential learning. Some decision-making did not occur until after the event; they described using hindsight and self-reflection to analyze the patient's status. This delayed examination resulted in earlier decision making and/or recognition with future patients experiencing similar circumstances.



# PRACTICE CHANGE/ACUTE CARE

## Midrange Braden Subscales Associated with Increased Risk for Pressure Injury in the ICU

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**Background:** Hospital acquired pressure injuries are a serious problem among ICU patients. In the United States, pressure injury risk and associated care planning have historically been determined using the Braden scale total score. However, some institutions now use the Braden scale subscale scores to focus pressure injury prevention efforts.

**Purpose:** The purpose of the current study is to examine risk of developing a pressure injury associated with Braden subscale scores in a surgical ICU population.

**Methods:** We identified a cohort of 6,377 surgical ICU patients via electronic health record data to determine Braden Scale total and subscale scores, age, and incidence of pressure injury development. We used survival analysis to determine the hazards of developing a pressure injury associated with each subscale of the Braden scale, with the lowest risk category as a reference.

**Results:** Two hundred and fourteen patients (4%) developed a pressure injury stages 2-4, deep tissue injury, or unstageable and 516 (8%) developed a hospital acquired pressure injury of any stage. With the exception of the friction and shear subscales, regardless of age individuals with scores in the intermediate risk levels had the highest likelihood of developing pressure injury.

**Implications:** The finding that individuals with midrange risk (vs. high risk) on standard risk-assessment tools experienced increased rates of pressure-injury development was unexpected. This non-intuitive finding may be because nurses initiate certain preventative interventions for those with high risk, but not intermediate risk. Maximal preventative efforts should be extended to include individuals with intermediate Braden scale subscale scores.

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# PRACTICE CHANGE/ACUTE CARE

## Nurses' Perspectives on Barriers to Promoting Mobility in Hospitalized Older Patients

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**Purpose/Aims:** To examine the association between nurses' knowledge, attitude and external barriers and the nurse's mobility-promoting behavior. Nurse perception of the priority organizations place on mobility, and the relationship of nurses' level of experience to nurse prioritization for promoting mobility was also investigated.

**Rationale/Conceptual Framework:** The geriatric population has complex nursing care needs as their natural age-related changes are complicated by illness, severity of illness, comorbidities, and the accompanying symptoms. Some studies suggest that promoting mobility in hospitalized older adults is a complex process for nurses and that nurse knowledge barriers, attitude barriers, and external barriers converge. *The adapted Knowledge, Attitude and Behavior Framework* based on Cabana's (1999) work shows the interactive relationship between knowledge, attitude and external barriers that may influence behavior. Nurses may be confronted with interpersonal barriers including knowledge and attitude barriers, and external barriers that may influence their mobility promoting behavior. External barriers--such as patient, interdisciplinary and environmental factors--may contribute to insufficient promotion of mobility. Patient factors including the patient's condition, presence of medical devices, and patient preferences may also contribute to nurses' barriers to promoting mobility

**Methods: Design:** Cross-sectional, descriptive, correlational study with convenience sampling. **Setting:** Two community-based hospitals in the Pacific Northwest of the U.S. **Participants:** Eighty-five nurses caring for 98 inpatients 65 and older. **Measurement:** Nurses' knowledge, attitude and external barriers were examined with a validated 5-point Likert Scale. Patient-related and other clinical barriers and the nurses mobility-promoting behavior was obtained with the validated self-recorded mobility log. Patient Basic Metabolic Index (BMI) and severity of illness was obtained through data extraction.

**Results:** Nurses viewed the promotion of mobility as important, yet mobilizing older patients was infrequent. Nurses perceived a number of barriers to promoting mobility: Patient condition, the perception that patients could be harmed during mobilization, perceptions of heavy workload, difficulty prioritizing nursing care, and staffing shortages. While novice nurses had lower priority to promote mobility compared to more experienced nurses, novice nurses tended to promote more mobility.

**Conclusion/Implications:** As nurses care for hospitalized older adults the convergence of interpersonal, patient, and environmental complexities acting as barriers to mobility need to be considered. It is important to understand the needs of beginning, less experienced nurses to overcome the barriers to promoting mobility. This study shows that even experienced nurses need to overcome barriers to promoting mobility. Hospitals need to address the needs of the novice nurse while enhancing the practice of more experienced nurses in order to support nurse-promoted mobility. The findings from this study show that nurses knowledge, attitude, and external barriers could play a role in the low levels of mobility in hospitalized older adults.

# PRACTICE CHANGE/ACUTE CARE

## Optimizing Accountable Care Coordination Teams

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**Purposes/Aims:** Care coordination is considered one of the most promising strategies for improving value in health care. Provisions for care coordination, authorized through the Affordable Care Act, are intended to facilitate safe transitions across the continuum of care through collaboration and shared accountability. However, difficulty reconciling the many, seemingly incompatible, conceptualizations of care coordination has hampered the development of standards to address quality improvement across health care settings. Specifically, there is little theoretical knowledge for guiding the assembly, training, and evaluation of effective care coordination teams comprised of diverse roles, including nurses. The purpose of this realist synthesis was to apply a rigorous approach to investigate a common conceptual understanding of care coordination and contributing role functions within multidisciplinary care teams by (1) identifying shared conceptual elements of care coordination purported by influential health policy groups and technical expert panels, (2) extracting contributor roles associated with improved care coordination outcomes from the peer-reviewed literature, and (3) systematically collating results for modeling effective team arrangements.

**Rationale/Background:** Care coordination has been investigated within a large body of research that is based on 60 distinct definitions of care coordination. So far, insufficient attention has been spent examining collaborative teams for effective and efficient delivery of care coordination services. As a consequence, no process models exist for optimizing multi-disciplinary team arrangements with shared accountability for quality, safety, and efficiency outcomes.

**Methods:** The investigation was designed, conducted, and reported according to *Realist And Metanarrative Evidence Syntheses: Evolving Standards (RAMESES)* criteria. The scope of the synthesis spanned system, provider, and patient levels and included records representative of multidisciplinary consortia, professional associations, and para-professionals. The peer-reviewed literature was sourced to extract the roles of contributors to effective care coordination processes, which were then plotted against the identified care coordination elements.

**Outcomes Achieved/Documented:** A pattern consistent with stable concept utilization was identified as supported by conceptual overlap for 11 extracted elements of care coordination. *Assessment, teamwork, information sharing, and self-management support* were endorsed by 90% of the national expert groups as important aspects of care coordination. In turn, *community resource linkages, transition care, and monitoring/follow-up* showed 80% correspondence. Care coordination characteristics with lesser overlap were *care planning and evidence-based chronic care management* (both 60% congruence), *population health management* (50% congruence), and *workflow coordination* (30% congruence). The realist synthesis showed that care coordination needs of adults and children can be met through a variety of team arrangements involving contributors from public health, managed care organizations, physicians, pharmacists, nurses (both RNs and APRNs), social workers, lay workers, and purpose-specific provider groups.

**Conclusion:** The plot of collated care coordination elements and contributor roles presents a useful model for visualizing capacity within care coordination networks, including coverage, duplication, and gaps. Prospectively, the matrix can simulate optimal care team arrangements with sufficient flexibility to accommodate local workforce variation.

# PRACTICE CHANGE/ACUTE CARE

## The RN-Patient Decision Making Theoretical Model: A Multilevel Approach

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**Purposes/Aims:** As healthcare payers shift toward a system that reimburses based on patient outcomes, many clinicians and administrators have focused on extracting value from care provided. In order to extract value from nursing care, one must understand the complex interactions and decisions made when a patient receives care. There is a need to examine the nurse-patient relationship and the reciprocal decision making process that occurs during an episode of care. There is not a current model that examines this complex relationship from a multilevel theoretical lens. The purpose of this poster is to present a multilevel nursing theoretical model that describes relationships between nurse, patient, and environmental variables that influence the reciprocal cascade of decisions made by the nurse and patient, and the resulting outcomes during an episode of care.

**Description/Definition of Theory/Concept:** The nurse-patient relationship is at the center of several other competing relationships. Simultaneous interactions between the nurse and work environment, the patient and the health environment, and the health environment and the community are examined as they influence the nurse-patient relationship. These complex relationships interact to influence decisions made by the nurse and patient. The series of decisions cascade throughout the relationship, influencing outcomes. Antecedents to each major concept of nurse, patient, and environment are identified. Outcomes of these relationships are discussed at individual, organizational, and community levels.

**Internal Consistency of the Theory/Concept:** A literature review was conducted to clarify the current state of knowledge regarding nurse-patient-environment relationships and decision making, and to evaluate the logic and truth of the relationships presented. Testing is needed to gain support for the validity of this theoretical model.

**Logic Linking Theory/Concept to Practice/Research Problem:** Through examining the multi-faceted relationships between the nurse, patient, and environment, a better understanding of how outcomes are reached is gained. With this understanding, a nurse's influence over outcome can be operationalized and value extracted. This model can provide a framework for research to prove the value of the nurse-patient relationship in care outcomes.

**Conclusions, Including Utility of Theory/Concept:** The RN- Patient Decision Making Model offers new insights into how health decisions are made in the nurse-patient relationship and how those decisions affect the patient, nurse, organization, and community. This model will help to extract value from the nurse-patient relationship and gain a better understanding of influences affecting nursing practice.

# PRACTICE CHANGE/ACUTE CARE

## A Multidisciplinary Approach to the Reduction in Ventilator-Associated Pneumonia

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**Purpose/Aims:** Reduce ventilator-associated pneumonia in a Medical Intensive Care Unit (MICU) with the implementation of a prevention bundle, staff education, and chart audits.

**Rationale/Background:** Patients receiving mechanical ventilation are at risk for complications, such as pneumonia. About 10-20% of mechanically ventilated patients develop ventilator-associated pneumonia (VAP) and is the leading cause of death associated with hospital acquired infections. VAP has serious implications including increases in intensive care and hospital length of stay, anti-microbial use, healthcare cost, utilization of health care after discharge, mortality risk, and extended duration of mechanical ventilation. The estimated cost is \$10,000-\$13,000 per case of VAP and the mortality rate is about 10%. VAPs may be preventable with the implementation of education and prevention modalities. The MICU had a VAP rate per 1,000 ventilator days of 3.9 in 2013 (8 cases of VAP with 2,013 ventilator days), a rate of 1.95 (4 incidences per 2,047 ventilator days) in 2014, and 0 in 2015. National VAP rates range 1.2-8.5 per 1,000 ventilator days.

**Brief Description of the Undertaking/Best Practice, Including Approach, Methods, or Process Used:** A VAP prevention bundle was initiated in 2012, which included oral care every four hours, early patient mobility, daily sedation interruption, daily spontaneous breathing protocol, evening rounds with the physician, charge nurse, nurse, and respiratory therapist, and staff education sessions by the unit nurse champion and clinical resource nurses. An in-patient antibiotic stewardship program was implemented for the physicians to order the right antibiotic at the right time. In 2015, a computer-based educational module was required to be completed by every MICU nurse regarding the new sedation assessment trial and spontaneous breathing trial protocols. The nurse champion attended 2-5 change of shift huddles per week to reinforce the VAP bundle requirements, provide feedback on charting compliance, and inform staff how many days it had been since the last VAP incidence. The information was also posted in the breakroom and emailed to staff weekly by the nurse champion. The champion and clinical resource nurses conducted chart audits at least weekly with in the moment teaching when charting was noncompliant. After implementation, the MICU had no incidence of VAP. The VAP bundle is achieved with participation by a multidisciplinary team consisting of doctors, nurses, respiratory therapists, physical therapists, pharmacists, and unit champions.

**Outcomes Achieved/Documented:** The last documented VAP in the MICU was September 7, 2014. To date, the MICU has kept the VAP incidence rate at 0 due to the continued efforts of the multidisciplinary team and education.

**Conclusion Emphasizing Implication for Clinical or Educational Practices, and Recommendations for Research or Future Undertakings:** Through the implementation of a VAP bundle and a multidisciplinary approach, it is not only possible, but feasible for a high-acuity intensive care unit to achieve and maintain low to zero VAP rates with continued education, training, and internal auditing. Other ICUs can follow the example of the MICU and successfully decrease VAP rates.

## PRACTICE CHANGE/ACUTE CARE

### Leading Practice Change by Forcing Enteric Tube Verification via the EMR

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**Background/Significance:** Injuries from blindly inserted, enteric tube misplacement include aspiration pneumonia, pneumothorax, perforations, and death. Patients at greatest risk are those with diminished mental status, decreased cough or gag reflexes, and are critically ill and/or obtunded. Multiple studies have indicated that traditional bed-side methods of verifying proper placement of enteric tubes are not reliable. These methods include bubbling (observing bubbles when end of tube is placed in water) and audible auscultation of air bolus through tube. Although the gold standard for confirming tube placement is radiography (x-ray) of the chest, traditional methods of verification continue to be used. Two separate incidences of enteric tube misplacement occurred recently in a 425-bed acute care facility, with resulting hospital acquired pneumonia. Root cause analysis revealed both tube placements were confirmed via traditional bed-side methods and not by radiographic means. This practice was widespread throughout the facility, including the practice of newly graduated nurses. In addition, although licensed independent practitioner (LIP) orders for radiographic verification of placement were present, these orders were buried in the electronic medical record (EMR) and not easily visible by nurses.

**Purpose:** The purposes of this evidence-based practice project were to: a) review current evidence surrounding enteric tube placement verification, b) develop standardized nursing protocol and competency, and c) improve the force-functioning of EMR to support radiographic verification. This poster will share the protocol and simulated competency, and describe the changes made to the EMR to support practice.

**Methods:** An interdisciplinary team was formed consisting of critical care nurses, physicians, and information specialists. After an intensive review of literature, a protocol for enteric tube placement and verification was developed. A simulated laboratory competency in enteric tube placement and verification was established. Based on location of use, specific units were identified to complete the competency. The electronic medical record was re-designed to force the function of ordering radiographic confirmation. **Results:** An initial improvement in enteric tube placements accompanied by radiographic confirmation prior to use was realized. Audits are currently being done to determine continued frequency of ordering of radiographic confirmation post-implementation.

**Implications and Significance of the Project for Nursing:** Changes to patient care and best practices are made daily. Nurses are expected to remember and comply with all changes. Practices often become entrenched through education and years of repetition, thus contributing to the delay in change to practice. Using the EMR to support changes in practice will lead to adoption and maintenance of change.

# PRACTICE CHANGE/ACUTE CARE

## Development of Peer Review for Clinical Outcomes

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**Background/Significance:** Key clinical outcomes of nursing care such as device related infections, falls and pressure ulcers provide public and external agencies a measure of nursing quality. Peer review is a process to evaluate nursing care from established practice standards. A group of nurses or an individual nurse is evaluated by a nurse of the same rank for adhering to best practice and quality standards. This assures competent practice and continuous professional development. Peer review fits our organizational goal of delivering highly reliable care.

**Purpose:** Develop process for clinical peer review to:

- Provide objective and nonjudgmental evaluation of individual performance and competence in performing clinical bundles of care.
- Foster a teaching and learning environment among peers.
- Identify weaknesses in practice that can guide planning for staff development and education
- Provide evidence of change in practice to improve care & serves as a documentation mechanism that nurses are practicing at the highest standard of care.

**Methods:** A team consisting of staff nurses, educators, managers and a practice director convened to design the process. Evidence-based practice bundles for the prevention of catheter-associated urinary tract infections and central line-associated bloodstream infections were used to define the clinical performance level individual nurses would be benchmarked against when conducting a peer review. In order to make the results accessible for each clinical unit, an on-line review process for data entry and analysis was created. This process allows data analysis by unit and at the aggregate level to identify both excellence in practice and needed changes. Simultaneously, infection data is analyzed for comparison. The ultimate goal is reducing patient harm by eliminating in hospital acquired infections. The electronic process uses electronic a survey format which minimizes the need to handle and track paper forms. The charge nurse assigns a peer member to review another staff nurse who is caring for a patient with a central line device or indwelling Foley catheter at the start of the shift. The review would be conducted over the course of a shift and then entered into the survey format.

**Results:** Data is being collected from the on-line tool.

**Implications and Significance of the Project for Nursing:** By focusing on the clinical practice standard and not the person per se; the associated feelings of negativity or vulnerability often associated with peer review can be controlled and even eliminated. Nursing can no longer rely on their clinical experience to provide quality care. Peer review is an effective tool to build and sustain important practice changes necessary to improve patient outcomes. It engenders front-line accountability and serves as a dataset to describe the practice level within a particular unit, division, or hospital.

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# PRACTICE CHANGE/ACUTE CARE

## Silver Catheters: Minimizing Risk in the Neuro-Critical Care Population

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**Purpose:** This presentation explores the process of applying evidence based practices to achieve improved outcomes in reducing catheter associated urinary tract infection (CAUTI) in a neurological critical care unit.

**Background:** Indwelling urinary catheters account for over 30% of all healthcare acquired infections reported to the National Healthcare Safety Network (NHSN). They are known to increase morbidity and mortality, length of stay, and overall healthcare costs. Data from the National Scorecard on Hospital-Acquired Conditions indicate that a 16% reduction in CAUTI has occurred between 2011-2014 is linked to the use of published guidelines by CDC. However, data from a recent study found that programs implemented within intensive care environments have not been able to show similar results. Moreover, data from NHSN suggest that rates of CAUTI in ICUs have increased by 9% between 2009 and 2012. Limiting catheters to those who absolutely need them is the key strategy in eliminating unnecessary infections. This is particularly challenging for intensive care units (ICU) whereby many of these patients require indwelling catheters to closely monitor urinary output. This was the case for our neuro-surgical critical care unit (NCCU). Cerebral Salt Wasting was a primary reason for having an indwelling catheter placed within this population and necessary for managing their fluid replacement. Despite implementing the high priority recommendations published by the CDC, we continued to experience an unusually high rate of CAUTI (7.58/1000 device days).

**Methods:** Consideration was given to insertion of antimicrobial/antiseptic impregnated catheters based on CDC secondary approaches to manage infection risk. Following educational sessions in the late fall of 2015, silver-alloy catheters were introduced to evaluate effectiveness within the NCCU population in January 2016. A significant reduction in CAUTI rate was observed from 7.58 to 1.17 per 1000 device days following the introduction of the novel catheters in the NCCU.

**Implications to Practice:** Acting on both recommendations of a comprehensive strategy and a special approach, a reduction in CAUTI rates was actualized within the NCC environment. Staff continued to improve in bundle adherence particularly in the priority area of catheter maintenance while simultaneously introducing impregnated catheters; therefore, it is difficult to attribute the overwhelmingly positive outcome to only the novel catheters thus limiting the generalizability of this quality improvement study. Nonetheless, patients have enjoyed a much lower risk of infection under the new standard of care. Future research directed at comparing silver alloy catheters to standard indwelling catheters, the effectiveness against specific organisms and the use in a variety of patient populations would add to the literature.



## PRACTICE CHANGE/ACUTE CARE

### Innovation in Collaboration: Meeting the Needs of Nursing Education and the Employer

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The purpose of this project was to pilot a nursing elective in the final semester for pre-licensure nursing students at a community college that could help students self-select for the emergency department (ED) while providing a framework to orient and train new nurse employees and senior nursing students so that retention in the ED could be improved. One of the major aims of this collaborative effort between the school and the hospital was to take the Emergency Nurse Orientation Course (ENOC) and integrate the material into a structured credit-bearing course for senior nursing students as well as new nursing staff in the ED. A second major aim was to evaluate the outcomes to see if recruitment and retention could be improved as a result.

Six years ago Christus St. Vincent Medical Regional Center (CSVMRC) approached Santa Fe Community College (SFCC) with a proposal as a clinical partner. CSVMRC had observed a decrease in retention regarding new nurse employees in the emergency department (ED). Although many of the new nurses were graduates from the nursing program at SFCC, the capstone experience and traditional orientation did not seem to be enough to screen for the best candidates that would be well suited for the ED. In order to do a better screening of potential new graduate hires and offer a standardized orientation based on a nationally standardized course, the hospital requested to partner with SFCC on creating a course to meet both the educational needs of the employer and the students.

CSVMRC provided the faculty (ED Education Coordinator) along with the ENOC modules. SFCC provided the selected senior nursing students interested and prepared for the intensity of such an elective. The college also allowed the clinical partner to send approximately 6 new nurse employees each semester to receive the training at no cost. The course met for five hours weekly for ten weeks on campus using a combination of didactic and lab work (primarily in a medical simulation center). The content not only included emergency nursing but also covered critical and intensive care nursing.

This nursing elective has now been offered every fall and spring for the past 5 years. The average class size is twelve and continues to be a very popular course requested by senior nursing students. The success of the course has led to a discussion between the two partners on expanding to include a similar medical-surgical course. The outcome data that will be presented indicates that retention has significantly increased in the ED over the past three years due to participation in the elective. The success of this pilot shows that innovative collaboration between clinical partners and nursing education programs can result in solutions to significant patient care issues such as nursing recruitment and retention.

# PRACTICE CHANGE/ACUTE CARE

## Care Transition/Readmissions Prevention: RN Follow-up Calls to Discharged Patients

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**Purpose:** This abstract presents Registered Nurse follow-up telephone care of acute care patients discharged from units as part of an initiative to provide quality care transitions and to prevent unnecessary readmissions.

**Rationale/Background:** Research suggests that many acute care readmissions can be prevented with timely follow-up calls regarding healthcare provider appointments, understanding of discharge instructions, taking medications as prescribed, and controlling side effects and pain. Discharged patients benefit from follow-up calls from trusted acute care nurses that both know and served as a member of the team that cared for the patients.

**Description:** Registered Nurses working in direct patient care units in a not-for-profit Central Texas hospital system are calling patients within 24 to 72 hours post discharge. With a conversational approach, the RNs survey each patient or family member by asking five open-ended questions:

- Were you able to make a follow-up appointment with your doctor?
- Do you have any questions about your discharge instructions?
- Did you fill your prescriptions and get information about potential side effects?
- We are concerned about your comfort. Are you having any pain now?
- Is there anything else that I can do for you?

Registered Nurses address issues and questions that can be resolved within about five minutes. Otherwise, the survey information collected via third-party software is escalated to a Registered Nurse Navigator or hospital Pharmacist for in-depth consultation with the patients and their healthcare providers. In addition, incidental feedback – including complements, complaints, and suggestions – is documented and sent directly to the department representative who can best solve the issue or concern.

**Outcomes:** The table below shows preliminary data from the first half of October, 2016. (Two more rural and one behavioral health hospital will initiate calls in November, 2016).

Hospital Type	# Hospitals	Unit Contacts	Total # Escalations	% Escalations
Urban	2	972	139	14.3 %
Suburban	4	562	45	8.0 %
Rural	1	51	3	5.9 %
Pediatric	1	115	21	18.3 %

**Conclusions:** Anecdotal and descriptive data provide preliminary support that this program addresses and improves discharge and other quality gaps. Using inferential analytical methods, future research will evaluate these interventions and their impact on readmissions and other patient outcomes.

## PRACTICE CHANGE/ACUTE CARE

### Care Transition/Readmissions Prevention: RN Navigator & Pharmacist Patient Consults

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**Purpose:** This abstract presents the in-depth follow-up with discharged patients once identified by unit Registered Nurses and escalated to Registered Nurse Navigators and Pharmacists. This program is part of an initiative to provide quality care transitions and to prevent unnecessary readmissions.

**Rationale/Background:** Other healthcare providers place follow-up calls to discharged patients. However, quality care transitions – often in partnership with community pharmacies and providers – assist patients work through the healthcare system and recover their health.

**Description:** Quality care transitions includes two keys practices beyond follow-up calls to patients: The unit Registered Nurse (1) places the initial patient call and identifies and addresses patient needs and (2) escalates cases that need more extensive or protracted assistance to a Registered Nurse (RN) Navigator or hospital Pharmacist. The RN Navigator or – for hospital medication issues, the Pharmacist – contacts identified patients by phone within 24 hours to consult with and assist the discharged patient. In addition, these patients are provided a 24/7 hotline phone number where they can reach a Registered Nurse for call triage and telehealth assistance as needed.

**Outcomes:** After escalation and resolution, outcomes are charted in the electronic health record for review in case of subsequent encounters or readmissions. Escalation data collected from the first half of October, 2016 summarize 208 escalations shown as type, number, and percentage of needs addressed. Escalations often include multiple needs.

PCP Appointment	126	24 %	Medication Access	47	9 %
PCP Access	4	1 %	Medication Cost	25	5 %
PCP Contact	38	7 %	Medication Questions	48	9 %
Education	38	7 %	Seton Pharmacist	30	6 %
Equipment	7	1 %	Signs & Symptoms	104	20 %
Home Health	10	2 %	Specialist Need	33	6 %
Insurance	9	2 %	Transportation	3	1 %

**Conclusions:** Backed by a 24/7 telehealth/call triage line, Registered Nurse Navigators and Hospital Pharmacists are integral to the discharge process and follow-up for care transition and prevention of unnecessary readmissions. Future research using inferential methods will focus on these interventions and their impact on readmissions and other patient outcomes.

# PRACTICE CHANGE/ACUTE CARE

## Similarities and Differences in State Provisions for Delegation of Nursing Tasks

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**Purpose/Aims:** The purpose of this paper is to describe similarities and differences in state agency/boards of nursing provisions for delegation.

**Rationale/Background:** Delegation is foundational to nursing home quality and safety, with team nursing employed in these settings as the standard model for nursing care. With team nursing, the registered nurses' (RNs') nursing practice is highly dependent on appropriate delegation, and requires collaboration and effective communication of residents' care plans and changes in condition. Studies that identify inconsistent differentiation in RN and licensed practical/vocational nurse scopes of practice in nursing homes raise questions regarding the clarity of state agency/board of nursing (SBON) provisions for delegation. As part of a larger study to develop delegation guidelines for nursing home directors of nursing, this paper describes the findings from a review of SBON provisions for delegation across all 50 states.

**Conceptual Framework:** Donabedian's Structure-Process-Outcomes model (1980) serves as the conceptual basis for this review, with SBON delegation provisions (structure) guiding nurses' practices (process), which in turn, influence care quality and safety (outcomes).

**Methods:** We used a systematic approach to search SBON provisions for any reference to the term *delegation*, starting with a comprehensive search of Nurse Practice Acts posted at state websites. We then expanded our search to include: (1) Administrative Codes, Statutes, Regulations, Bulletins and other documents posted at SBON websites, and (2) SBON provisions for *assignment, supervision, and standards/scope of practice*. All documents with any reference to delegation were uploaded to the data management software NVivo 10. The content was reviewed and coded for type of delegation-related information covered, such as: *definition of delegation, provision explicitly allowing/disallowing delegation of certain activities, and training requirements*. Thematic analysis was used to identify patterns and themes for delegation provisions across states.

**Results:** Limited consistency across states was identified in the type of documents that referenced delegation and the extent of delegation content included in each document. For example, provisions for delegation were found in stand-alone Nurse Practice Acts or Nurse Practice Acts embedded in Regulations and Statutes, Administrative Codes, Bulletins, and/or Position Papers. The level of delegation-specific detail contained in the documents ranged from minimal, including only a general definition of delegation, to extensive, with entire chapters/sections of Regulations dedicated to delegation. Some state provisions included specific tasks that can or cannot be delegated and to whom, and special qualifications or training required for RNs prior to delegating certain tasks and/or for UAP prior to accepting certain delegated tasks. The detailed listing of tasks that can or cannot be delegated also varied. In several states, medication administration may not be delegated, whereas other states allow delegation of medication administration to persons who have completed standardized training/certification.

**Implications for Translation to Practice/Further Research:** Regulatory clarity and ease of access to delegation provisions are critical to ensuring state regulatory parameters for all types of delegation are effectively translated into quality and safe nursing practice. Further research is needed to establish best practices that advance the clarity of and access to delegation regulations across states.

# PRACTICE CHANGE/ACUTE CARE

## Resilience at Work among First-Line Nurse Managers

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**Purposes:** The aims of this study were to determine: 1) the level of R@W among first-line nurse managers (NMs) and 2) whether or not years of experience in NM role, total years of experience as a registered nurse, years in current role, level of education, ethnicity, age, gender, or the number of direct reports are related to resilience at work.

**Background:** If nurse managers (NMs) lack resilient behaviors, they may experience difficulty managing professional and personal responsibilities, and ultimately may withdraw from management. Windle (2011) defines resilience as “the process of negotiating, managing, and adapting to significant sources of stress or trauma... the capacity for adaptation and ‘bounce back’ in the face of adversity” (p. 331). Resilience at work (R@W) scale and subscales measure resilience behaviorally. R@W scale has not been used with NMs. R@W results allow targeted intervention planning to reduce stress and improve support and development of NMs (Winwood et al., 2013).

**Methods:** A descriptive, cross-sectional survey of 77 NMs with direct reports was conducted in 6 ministries of Providence Health & Services Southern California Region. The valid and reliable R@W scale consisted of 7 subscales and 25 statements that measure resilient behaviors in the workplace on a 0-6 ordinal scale. Eight demographic questions were added to the survey. Data were analyzed using descriptive statistics and Spearman’s correlation coefficient with  $p < 0.05$ . Cronbach’s alpha was used to confirm reliability of the scale/subscales.

**Results:** Among the 48 respondents (62% response rate), the mean overall R@W score was 4.2 on a 6-point scale. The highest mean R@W subscale was Living Authentically with a score of 5.3. The lowest mean R@W subscale was Maintaining Perspective with a score of 3.1. Significant correlations were found between total years as NM and overall R@W mean score ( $p = 0.02$ ), Maintaining Perspective subscale score ( $p = 0.03$ ), and Staying Healthy subscale score ( $p = 0.04$ ). No other variables were related to R@W overall or subscale scores. Four subscales had low reliability: Living Authentically ( $\alpha = 0.47$ ), Maintaining Perspective ( $\alpha = 0.63$ ), Interacting Cooperatively ( $\alpha = 0.45$ ), and Building Networks ( $\alpha = 0.56$ ) subscales.

**Implications:** Given a non-representative sample, more studies of NMs are needed. Select results provide a tentative, behavioral pathway forward to achieve and maintain NM resilience skills at work through education and orientation. Further reliability testing of R@W within NMs is warranted. While this study began exploration of NM resilience at work and initial testing of R@W with this group, more studies are needed before using select subscale findings or generalizing to other NMs.

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## Abstracts of Poster Presentations

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### PRACTICE CHANGE/ACUTE CARE II

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UNCERTAINTY IN THE PICU & NICU:  
PHYSICIAN-PARENT COMMUNICATION

*Claire A. Richards, Helene Starks*

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A COMPARISON OF NP/PA AND MD DIAGNOSIS OF  
ABDOMINAL PAIN IN THE EMERGENCY DEPARTMENT

*Karen Sue Hoyt*

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THE QUANTITY OF CARE PROVIDED BY NURSE  
PRACTITIONERS TO OLDER ADULTS WITH CANCER

*Lorinda A. Coombs, Wendy Max*

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TEXT MESSAGES TO ENHANCE STUDENT'S NUTRITIONAL  
LITERACY AND PHYSICAL ACTIVITY

*Christine Costa, Kholoud M. Khalil*

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ULTRASOUND GUIDED INTRAVENOUS ACCESS BY  
EMERGENCY NURSES: THE PROGRAM AND OUTCOMES

*Sarah Feinsmith*

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ANALYSIS OF ED TRANSFERS:  
FROM SATELLITES TO MAIN HOSPITAL

*Fatih Kunkul, Mustafa Ozkaynak*

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TRANSITIONAL CARE FOR ELDERLY FREQUENT  
ED USERS: A NEEDS ASSESSMENT

*Remington Bigelow Stickney, Patricia Daly*

EVALUATING A SMOKING CESSATION  
PROGRAM IN A CORPORATE SETTING

*Leah C. Griffiths, Kathy James*

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PILOT IMPLEMENTATION OF A LOW-LITERACY ZONE  
TOOL FOR HEART FAILURE SELF-MANAGEMENT

*Daniel J. Weiss*

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CHLAMYDIA SCREENING IN WOMEN AT A  
UNIVERSITY STUDENT HEALTH CENTER

*Jaime Katherine Carroll, Karen Macauley*

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IMPROVING SYPHILIS FOLLOW UP RATES:  
A QUALITY IMPROVEMENT PROCESS

*Erin Leigh Edwards, Mary Barger*

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IMPLEMENTATION OF AN ELECTRONIC HANDOFF  
REPORTING TOOL: A QUALITY IMPROVEMENT PROJECT

*Angelica Kaisa Ahonen*

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STAKEHOLDER EDUCATION AND GUIDELINE PROPOSAL  
FOR NITROUS OXIDE USE AS LABOR ANALGESIA

*Noelle Sarah Dove*

## PRACTICE CHANGE/ACUTE CARE II

### Uncertainty in the PICU & NICU: Physician-Parent Communication

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**Purpose:** To describe communication strategies used by critical care physicians with parents of critically ill pediatric and neonatal patients.

**Background:** Parents experience long-term distress as a result of parental role disturbance and poor communication when their child is in an intensive care unit (ICU). Parents have differing preferences for information (e.g., how much, how often) and involvement in decision making (e.g., all decisions, some, none) in this setting, while clinicians often limit the information they share and restrict parental decision-making to minimize parents' emotional distress. There is a lack of information about how clinicians make choices about what to modify when communicating with parents based on different contextual factors in pediatric and neonatal ICUs.

**Methods:** Semi-structured interviews with 22 pediatric and neonatal critical care physicians were conducted to ask about communication strategies used to deliver bad news and resolve conflict when families and the clinical team have different goals. Interview transcripts were analyzed using content analysis to identify communication strategies and mediating contextual factors that clinicians use to assess and respond to parents' preferences for information and decision making.

**Results:** Pediatric and neonatal ICU physicians balance different priorities in making choices about *how* and *if* they invite parents to decision making and *what* therapies are offered, based on the prognosis and degree of clinical certainty. When there is uncertainty about survival, physicians tend to be the primary decision makers and typically prioritize saving the child's life. In contrast, there are a range of practices used when death is considered a certain outcome but decisions can be made about *how* and *when* dying happens, including: deferring to parents without making a recommendation; making the decision for families, with or without their permission to do so; and constraining the options based on elicited family goals or what physicians think is best for the family. Physicians select decision-making strategies based on their understanding of what families need. When interventions could result in the child's survival but with uncertain severity of neurological deficits, clinicians defer to parents, with some giving recommendations while others do not. Physicians are often uncertain how to incorporate the interests of the family as a whole. Physicians report that they lack time and skills to learn about the goals and values of the family and often rely on other clinicians for this information.

**Implications:** Physicians' communication strategies are often based on their imperfect predictions of patients' future clinical outcomes and best interests based on patients' current clinical data, pain and suffering and family goals, when known. Physicians are at risk of marginalizing family involvement as a result of their own assumptions about what is best for families. Since nurses spend the most time with patients and families, they are positioned to facilitate communication between physicians and families by sharing information with physicians about what is important to patients and families in terms of quality of life (for example being able to interact with the child, being able to go home at the end of life).

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## PRACTICE CHANGE/ACUTE CARE II

### A Comparison of NP/PA and MD Diagnosis of Abdominal Pain in the Emergency Department

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**Purpose/Aims:** The purpose of this retrospective study was to compare nurse practitioners (NPs) or physician assistants (PAs) with physicians regarding the accuracy of diagnosing Emergency Severity Index (ESI) Level III abdominal pain (AP) patients seen in an emergency department (ED).

**Rationale/Background:** AP is the most common reason for a visit to the ED. Accuracy of diagnosis in the ED affects care management patterns including number and type of diagnostic tests, discharge destination and readmission within 72 hours. Physicians, NPs, and/or PAs are responsible for providing an initial diagnosis of patients who present with AP. Few studies have compared the accuracy of a preliminary diagnosis of AP patients among these groups of providers.

**Methods:** A retrospective chart review obtained from a large emergency hospital medicine group (450 clinical sites in 31 states) yielded 12,440 de-identified adult ( $\geq 18$  years) patient records who were initially seen in the ED with AP during 2015. Data compiled included ED discharge diagnosis, the discipline of the person providing the initial AP diagnosis, hospital size, and discharge destination. Cases were classified as “accurate” when the discharge diagnosis was consistent with the admitting AP diagnosis and “inaccurate” when the discharge diagnosis was not consistent with the admitting AP diagnosis. Logistic regression determined if the discipline of the person providing the preliminary diagnosis, if the four hospital sizes or three discharge destinations were related to accuracy of agreement between preliminary and discharge AP diagnosis.

**Results:** The percentage of accurate AP diagnoses were 95.3%, 92.9% and 97.1% by physicians, NP/PA and collaboration of NP/PA & physician respectively ( $\chi^2=46.01$ ,  $p<.00$ ). Logistic regression indicated that compared to the reference group of physicians, NP/PAs has a significantly reduced odds (31%) of an accurate admitting diagnosis while the collaboration of NP/PAs and physicians significantly increased the odds of an accurate diagnosis by 41% compared with physicians alone. Accuracy of AP diagnoses among the various hospitals ranged from 93.8 to 95.8% ( $\chi^2=18.64$ ,  $p<.00$ ). Logistic regression indicated that compared to hospital 0, hospitals 1 and 2 had 36-39% lower odds of accurate diagnoses while hospital 3 exhibited a similar odds of accurate diagnosis. Finally, the percentage of accurate AP diagnoses were greater than 99% with a general or ICU admission, 94% with discharge, and 98% with AMA/transfer ( $\chi^2=102.94$ ,  $p<.00$ ). With discharge as the reference group, the odds of an accurate diagnosis significantly increased with a general admission (1165%), and ICU admission (817%) and AMA/transfer (152%).

**Implications:** The misdiagnosis of AP has not improved over time. This study indicates a number of factors that influence the accuracy of the AP diagnosis in the ED: 1) the discipline of the person providing the preliminary diagnosis, 2) the size of the hospital and 3) the discharge location of the patient. Based on these findings collaborations between NP/PAs and physicians, arriving at a hospital and being a general or ICU admission from the ED increases the odds of an accurate abdominal pain diagnosis.

## PRACTICE CHANGE/ACUTE CARE II

### The Quantity of Care Provided by Nurse Practitioners to Older Adults with Cancer

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**Purposes/Aims:** The purpose of this study is to: 1) describe the number of Nurse Practitioners (NPs) providing care to older adults with cancer and the amount of care provided in a two-year period from 2010 through 2011; and 2) Identify and describe the specific types of malignancies for which NPs provide greater amounts of care.

**Rationale/Conceptual Basis/Background:** The leading cause of death for individuals' age 40 to 79 years in the United States is cancer. Approximately 40 percent of all Americans will be diagnosed with a malignancy in their lifetime. Cancer is most frequently diagnosed in adults over 65 years of age, and the incidence is expected to dramatically increase between 2010 and 2050. Estimates of the oncology workforce suggest there may not be enough oncology physicians in practice to care for these older patients with cancer. The lack of a sufficient cancer workforce will directly impact patient care and represents a public health issue.

**Methods:** Utilizing 2010-2011 data from the Surveillance, Epidemiology and End Result (SEER) program linked to Medicare enrollment and provider data; we will provide a description of the oncology workforce who provides care to Medicare patients with cancer. All members of the oncology workforce who provide cancer care to patients with Medicare are in the dataset, including NPs and physician specialists. Patient malignancy will be identified using the associated International Classification of Diseases (ICD) code. Analysis will include calculating median proportion and inter-quartile range of visits by provider groups. We will examine differences between malignancy types that receive a significant amount of NP care and malignancy types that receive little or no care from NPs.

**Results:** The research study is currently in process; results are anticipated to be available February 2017.

**Implications:** This is the first study to present non-self reported data on NP provided cancer care to any population. The public health implications of this study include: identifying a solution to the growing need for cancer care and the anticipated cancer workforce deficit, possibly reducing Medicare workforce expenditures for cancer care by fully utilizing the current workforce, and allowing specialty physicians to focus on complex care while nurse practitioners provide care within their scope of practice.

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## PRACTICE CHANGE/ACUTE CARE II

### Text Messages to Enhance Student's Nutritional Literacy and Physical Activity

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**Background:** MyPlate icon was launched in 2011 by the United States department of agriculture (USDA) to help American people to utilize the 2010 dietary guidelines effectively. MyPlate website and super tracker e-tool can help individuals to customize their food plans and engage in social and health promotion initiatives.

**Purpose:** To examine the effectiveness of receiving daily text messages encouraging healthy eating and physical activity the students' nutritional literacy and level of physical activity change.

**Methods:** The study was approved from the University Institutional Review Board (IRB). Eligible participants should be university level students, 18 years old or above. Participants will be assigned to either control or intervention groups. All participants will be emailed a brochure contains nutrition and physical activity information materials. The experimental group participants will receive a daily motivational text message through their MMS supported phones. The text messages are intended to remind and encourage participants to follow certain nutritional and physical activity instructions. The participants' are required to complete a self-administered pre survey at the beginning of the study and post survey eight weeks later. The survey consists of four parts (1) demographic, (2) Health & Diet, (3) Physical Activity, and (4) Eating Habits. Independent t-test will be used to examine the changes in the participants' responses.

**Results:** In addition to be familiar with MyPlate icon and applications, it is anticipated that there will be an improvement in the experimental group' nutritional knowledge and an increase in their physical activity level. Additionally, a change in the experimental groups eating behaviors and body mass index scores.

**Implications:** It is anticipated that the results will lead to establish successful obesity prevention programs among low-income and under served populations. Educational programs should be tailored carefully to account for potential differences in knowledge and attitudes towards health.

## PRACTICE CHANGE/ACUTE CARE II

### Ultrasound Guided Intravenous Access (USGIV) by Emergency Nurses: The Program and Outcomes

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**Introduction:** IV access is vital for treating emergency department (ED) patients but some medical or anatomical conditions can lead to difficult IV access (DIVA). One of the most popular, successful and highly recommended avenues for mitigating DIVA is the utilization of ultrasound-guided intravenous access (USGIV). Some USGIV training programs have limited enrollment to experienced nurses or nurses with excellent IV skills. Other studies have implemented intensive and unrealistic training regimens for a typical ED, some taking as long as 3 days to train nurses.

**Purpose:** The purpose of this study was to produce a realistic and applicable model of USGIV training and competency for registered nurses (RNs) and to examine the impact of this program on all ED patients requiring IV access.

**Methods:** For this translational research study, RNs completed a 4.5-hour unpaid, continuing education (CE) approved USGIV course taught by ED resident physicians. The course was open to all ED RNs, regardless of experience level. After the training, RNs were required to have 10 supervised USGIV attempts and expected to seek out practice opportunities at their own initiative. Data was collected from a nurse completed USGIV log, the electronic medical record (EMR) and a post training questionnaire.

**Results:** 34 RNs with experience levels of under 1 year to 30 years were enrolled in the study and 280 USGIV attempts were logged over 7 months at an urban academic teaching hospital with over 80,000 ED visits annually. 41% of the RNs who attended the training class developed competency in the procedure as evidenced by completing 10 supervised USGIV attempts. Successful cannulation rates were 81% in attempts 1-10, 84% for attempts 11-20, 96% for attempts 21-30. The greatest number of successful participants came from the 3-10 years of experience group. Common RN perceptions were feeling empowered and excited to use the new skill, the need for practice, feeling confident after practice and appreciating more autonomy. All patient IV attempts pre and post intervention were examined using two tailed T test ( $n=24471$ ). Overall, the mean number of IV attempts per site decreased by 2%,  $P=0.013$ . DIVA patients with  $\geq 2$  failed IV attempts experienced a 7% decrease in number of attempts per site,  $P=0.003$ . Patients who had their USGIV placed by an RN experienced a 28.02% reduction in IV attempts when compared to USGIVs placed by a physician ( $P=< 0.0001$ ).

**Implications:** An RN USGIV training program can decrease total number of IV attempts, empower nurses and decrease cost of IV supplies. Opportunities for structured practice time may amplify skill mastery, however, RNs motivated to develop this competence will seek out learning opportunities independently. RNs with 3-10 years' experience are most likely to succeed at this skill. Training environment with high demand for IV placement would benefit skill acquisition. The training class can be arranged at economical cost and RNs will attend this unpaid class to receive CE credit. A randomized controlled study is indicated to more accurately assess RN vs physician skill in placing USGIVs.

## PRACTICE CHANGE/ACUTE CARE II

### Analysis of ED Transfers: From Satellites to Main Hospital

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**Aim:** The purposes of this study were to: (1) examine transfer patterns of patients between emergency departments (EDs) within a pediatric health system; and (2) evaluate the value of the electronic health record (EHR) data to examine these patterns.

**Background:** Patient transfers (between satellite and main hospital EDs) are common for complex patients, however transfers pose a financial and distressing burden on patients, providers and the overall health system. Unnecessary transfers, double patient wait times, and contribute to overcrowding at the main ED. While literature exists on transition of care between various intensive and medical care settings, little is known about transfers between EDs. Examining these transfers has been labor intensive. Interoperable EHRs can potentially allow us to examine these transfers more efficiently. Understanding these transfers, is essential to design, and to implement organizational, policy and informatics interventions, to minimize these transfers and ensure the safety and quality of necessary transfers.

**Methods:** Patient episodes were identified in the main hospital ED (MHED) and its four satellite ED clinics (SEDCs). The MHED receives nearly 70,000 visits/year and serves as a Level I Regional Pediatric Trauma Center. The MHED has 40 private patient care rooms, 8 observation rooms, and a psychiatric unit. The four SEDCs accounted for an additional 60,000 visits/year. The median number of private and observation rooms at SEDCs, was 9.5. From 2008 through 2013, a total of 719,566 encounters were examined across sites. The research informatics department extracted the data (i.e. time stamped event logs) from the institutional EHR system and created a limited dataset.

**Results:** Our preliminary analysis revealed 1,886 transfers from SEDCs to the MHED. The age and gender were similar between transferred and the MHED patients. Admission to the hospital was also similar between transferred and non-transferred patients. However, distribution of insurance status, diagnosis and chief complaint were different. ESI score was lower in transferred patients indicating...worse/better health status. Transferred patients had a statistically higher history of mental health diagnosis, than the non-transferred patients ( $P=0.000$ ). Our qualitative inquiry with ED staff and administration revealed that patients presenting in a SEDC with a possible psychiatric issue, were almost automatically transferred to the MHED. This was concerning because many of these cases did not require psychiatric intervention. However, the EHR data was not sufficiently detailed to validate this speculation.

**Implications:** We found EHRs limited regarding transfer data. Important details regarding the main issue (unnecessary transfers between EDs) were not available in EHR database. As EHRs progress technologically, more details could be included for robust analysis. Telehealth interventions can help eliminate unnecessary transfers of patients with suspected mental health issue. A potential design alteration could be for nurses at the SEDC and clinicians who can perform psychiatric assessment at the MHED, could communicate through telehealth, to make informed decisions for transferring patient.

## PRACTICE CHANGE/ACUTE CARE II

### Transitional Care for Elderly Frequent ED Users: A Needs Assessment

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**Background:** There are record numbers of unanticipated emergency department (ED) readmissions and visits annually. Frequent ED users are generally over the age of 65 years, insured by Medicaid, of higher acuity and have more health related issues of higher acuity level than non-frequent users. Moreover, elderly patients suffer a 20% mortality rate upon admission and a 30% decrease in activities of daily living (ADL) after discharge. The Transitional Care Model (TCM) has been shown to decrease ED visits, readmission rates, improve ADL and increase event-free survival. Complex Adaptive Systems Theory (CAS) is the foundation for this quality improvement project (QIP) supporting the co-evolution of knowledge by all participating stakeholders and its enhancement of patient care.

**Purpose:** The purpose of this QIP is to evaluate the need for implementation of an ED transitional care team (TCT) to reduce this upward trend. The aims are to measure ED providers' and staff nurses' knowledge of patient discharge coordination needs, current resources and potential role of a TCT. A Needs Assessment (NA) will be developed to gauge the depth of knowledge held by the providers and nurses providing bedside care for patients over 65 years of age with chronic conditions who are ED frequent users.

**Proposed Methods:** This QIP will be conducted within one community based ED in Tucson, Arizona. The content of the NA survey will be determined by a review of the literature focused upon elderly transitional care. Nurses and providers will be recruited into the project upon verbal consent. Inclusion criteria: willingness to participate in a 15 minute survey and work one or more shifts per week within the ED. Demographic data will be collected on the participants including number of shifts worked per pay period, educational background, prior experience with a TCT, traveler/agency status and years of practice and specialty. The survey will be comprised of 10-20 questions focused on patient needs, current resources and the role of a transitional care team. The survey is anticipated to take between 5-10 minutes to complete, followed by a 5-minute debriefing to review questions regarding content. Questions will be structured with Likert scale type and categorical answers. Ordinal and nominal scale data will be collected and analyzed.

**Results:** Following IRB approval, data is anticipated Summer of 2017.

**Implications:** This QIP will reveal current provider and staff nurse knowledge regarding needs of elderly frequent ED users and knowledge of the role of a TCT. This assessment will guide future staff education, identify needed services, explore current resources and lay the groundwork for establishing a potential TCT for elderly frequent ED users. This QIP needs assessment will identify staff knowledge deficits regarding the needs of elderly frequent users and address transitional care while laying the groundwork for the implementation of a TCT initiated in the ED.

## PRACTICE CHANGE/ACUTE CARE II

### Evaluating a Smoking Cessation Program in a Corporate Setting

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**Purpose:** The purpose of this evidenced-based project is to identify current smokers, monitor periodic follow-up, and determine which smoking cessation interventions were most effective in helping employees decrease or quit in an employee health clinic.

**Background:** Tobacco smoking is the number one cause of preventable death in the United States. It increases a person's risk for cardiovascular and respiratory disease as well as diabetes and many types of cancers. When contrasted with non-smoking employees, smokers have a greater amount of lost productivity and cost of health and life insurance claims due to illness, estimated to be around \$5,816 per smoker annually. Given that 5% of employees reportedly smoke at the site, the estimated yearly cost for the organization is \$465,280. In combination with the behavioral intervention provided by the nurse practitioner, there are three first-line medications utilized in cessation efforts, including nicotine replacement therapy (NRT), varenicline, and bupropion. The evidence suggests rates of cessation with NRT or varenicline are most efficacious, followed by bupropion.

**Methods:** In October 2016, the doctorate of nursing practice student will present an evidence-based project proposal to key stakeholders and collect baseline data using the electronic health record. Information to be collected includes rates of tobacco use and medications prescribed to each smoker. Additional data on these two parameters will also be collected monthly for three months, coinciding with follow-up visits with the nurse practitioner. In February 2017, the final data will be organized and analyzed, and then presented to stakeholders in March 2017.

**Outcomes:** It is expected that there will be a change in the number of cigarette smokers at the site with the utilization of a combination behavioral and pharmacological intervention implemented by the employee health practitioner.

**Conclusion:** Findings will add support for best practices, helping to guide current and future clinicians in the employee health setting.

## PRACTICE CHANGE/ACUTE CARE II

### Pilot Implementation of a Low-Literacy Zone Tool for Heart Failure Self-Management

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**Purpose:** The purpose of this evidence-based practice project was to test the effect of a low-literacy zone tool for heart failure self-management on self-care and quality of life.

**Background:** Heart failure (HF) affects nearly 6 million Americans, resulting in high symptom burden and decreased quality of life. Each year HF results in 1 million hospitalizations (with a 25% readmission rate) and \$30 billion in total healthcare costs in the U.S. Palliative care (PC), home-visiting programs, and self-care interventions help improve quality of life, decrease readmissions, and lower healthcare costs for HF patients.

Older HF patients have particular difficulty recognizing and responding appropriately to symptoms leading to decompensation. Self-care support tools with color-coded zones (green=stable; yellow=caution; red=take immediate action) help patients and caregivers recognize and respond to signs and symptoms of HF exacerbations, and help reduce readmissions and costs. Studies are lacking, however, on these zone tools' impact on HF self-care and quality of life.

**Methods:** The PI and members of a PC inter-disciplinary team adapted an existing green-yellow-red zone tool for use with HF patients in this team's home-based PC program in the San Diego area. This tool was adapted with permission from a zone tool available on the Visiting Nurses Association of America website. The adapted zone tool was written at the second-grade reading level and was designed to help patients and caregivers recognize, self-manage, and report signs and symptoms of HF exacerbation to their PC nurses.

Participants were recruited from this home-based PC program and randomly assigned to a control group receiving usual care or an intervention group receiving the zone tool plus usual care. Usual care included weekly or biweekly home nursing visits in the first two months, then monthly or bimonthly nursing visits, with phone follow-up between visits. Nurses instructed patients and caregivers in home management of advanced HF, providing printed lists of signs and symptoms of worsening illness to report to their nurse.

Health literacy was pre-screened using the Newest Vital Sign (NVS) tool. Patients and/or caregivers with very low health literacy (NVS scores of 0-1 out of a possible 6) were excluded from this project. The two primary outcomes of interest, HF self-care and HF-related quality of life, were measured respectively with the Self-Care of Heart Failure Index (SCHFI v.6.2) and the short form Kansas City Cardiomyopathy Questionnaire (KCCQ-12), in pre-tests upon enrollment and in 30-day and 60-day post-tests.

**Outcomes:** Data collection will be completed in January, 2017. Analysis of pre-test and post-test results will be completed in February, 2017, and will evaluate the extent to which use of the zone tool affected HF self-care and quality of life in the intervention group vs. the control group.

**Conclusions:** Zone tools can help HF patients recognize, self-manage, and report signs and symptoms of HF exacerbation to their nurses or other providers. Further evidence-based research is needed with larger samples and in other clinical settings to assess the effect of similar zone tools on self-care and quality of life in HF patients.



## PRACTICE CHANGE/ACUTE CARE II

### Chlamydia Screening in Women at a University Student Health Center

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**Purpose:** The purpose of this evidenced-base project (EBP) is to increase chlamydia screening in women under 25 who present with urinary symptoms at a University Student Health Center (SHC).

**Background:** Chlamydia is one of the most commonly reported sexual transmitted infections (STIs) in the United States. Females between the ages of 15 and 24 are at the highest risk for infection. Chlamydia puts women at risk for pelvic inflammatory disease (PID) which can lead to infertility. There were 627.2 cases of chlamydia per 100,000 females in the United States in 2014. In 2013, the chlamydia rate for women was twice as much as men in both California and San Diego. Chlamydia is often asymptomatic in women but can also cause typical symptoms of a urinary tract infection (UTI). Several studies in the Emergency/Urgent care area have shown a range of 10-50 % of women presenting with UTI symptoms will have a STI such as Chlamydia. The United States Preventive Service Task Force (USPSTF) recommends women under 25 have chlamydia screening. CDC guidelines recommend annual chlamydia screening for women under 25 years old. In 2015, the American College Health Association (ACHA) survey showed 152 SHCs were 58% compliant with the CDC chlamydia screening guidelines. The rate of compliance at the project site was 44% in 2015.

**Process:** An educational workshop about chlamydia screening and an explanation of the program plan was provided for clinic staff. The program included a pre-visit questionnaire created for female patients presenting with urinary symptoms upon arrival to the SHC. Computer alerts were also generated in the electronic medical record (EMR) alerting providers to screen for chlamydia during these visits. Chlamydia screening education was delivered during these visits as well. If indicated, patients received one of three options for chlamydia screening (urine sample, vaginal self collected swab, or cervical swab). The data collected included the amount of women under 25 screened for chlamydia during urinary symptoms visits, the specific race and age of the women screened, the number of positive and negative chlamydia results, the amount of patients who declined screening and reason for declination, and finally the amount of urine samples, vaginal swabs or cervical swabs collected.

**Outcomes:** Outcomes are pending. The project is expected to improve access to chlamydia screening and increase the amount of chlamydia screenings in women under 25 years old.

**Conclusions:** Conclusions are pending. It is expected chlamydia screening rates will increase in women under 25 years old at the project site. Discussion will include lessons learned and feasibility at other University SHCs.

## PRACTICE CHANGE/ACUTE CARE II

### Improving Syphilis Follow-up Rates: A Quality Improvement Process

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**Project Purpose:** This evidence-based practice intervention aims to improve follow up rates and tracking of patients diagnosed with syphilis. Issuing patient reminder cards and provider coaching at the initial visit will improve patient follow up rates. Providers will retain patient information in a central location for easy identification of those needing follow up.

**Background:** Syphilis infection rates have been on the rise in California, especially in the men that have sex with men community. If not treated adequately, syphilis can result in life-long severe morbidities, including neurological deficits. Currently, the public health sexually transmitted disease clinic does not have a standard method for patient follow up reminders and patient tracking. Serial serologic testing after initial diagnosis and treatment is needed to ensure that treatment has been adequate. An identified of this public health clinic is elimination of syphilis through improved follow up rates and treatment.

**Methods:** At the initial visit, the provider provides the patient with an appointment reminder card identifying the week the patient should return for the next follow up. The provider will also encourage the patient to set a personal reminder, such as marking a calendar or phone reminder, before ending the visit. If the patient does not return to the clinic during the suggested time frame, the public health nurse will reach out to the patient for education and to encourage a return visit. The appointment reminder card will have a detachable section for the provider to document patient information, reason for and date of follow up. This section will be left at the front desk when the patient chart is returned and front desk staff will file it in the designated place by return date week for easy tracking.

**Outcomes:** Increase the follow up rate of serologic testing in patients diagnosed with syphilis at a public health clinic in southern California.

**Conclusions:** Improving tracking and follow-up serologic testing of those infected with syphilis will ensure adequate infection. Adequate treatment reduces the number of people suffering from long term morbidities from inadequately treated syphilis and thus decreases the cost of healthcare and burden to society.

## PRACTICE CHANGE/ACUTE CARE II

### Implementation of an Electronic Handoff Reporting Tool: A Quality Improvement Project

*Angelica Ahonen, RN, MSN, DNP(c)*

**Purpose:** The purpose of this doctoral project is to develop a standardized electronic handoff reporting tool. The aim of the proposed process is to have a concise communication tool. Utilization of this handoff tool will promote accurate, relevant, and complete communication between the emergency department and inpatient units. The project product is an electronic handoff tool that is consistent, safe, and efficient.

**Background:** Critical information such as a patient's vital signs, neurological status, and level of care is exchanged between registered nurses during a patient handoff report. It is imperative that the communication between health care professionals is accurate, specific, relevant, and timely. When the care of a patient is transferred from one healthcare provider to another, the patient may experience potential risk because of communication failure.

**Methodology:** The Iowa Model of evidence-based practice to promote excellence in the health care framework was used in this quality improvement project. An inter-professional team consisting of frontline nurses, educators, administrators, and technicians was created. The team met to identify practice issues surrounding the current handoff process. Pre-survey data results were reviewed. Scheduled meetings between the focus group took place every second Wednesday over the last four months. During these focus meetings, the creation of the electronic handoff reporting tool took place. In-services to all Emergency Department RN's and Medical Telemetry RN's on the new electronic handoff report was conducted by the nurse manager. A two-month pilot took place between the ED and Medical Telemetry unit. The data collection began once the electronic handoff report pilot was implemented.

**Outcomes Achieved/Documented:** The parameters analyzed: (1) Nursing satisfaction survey monkey results (2) Safety and Quality Information Systems related to client flow. The results from the two month pilot demonstrated a positive impact on nursing satisfaction. Preliminary results for quality and safety in patient admissions to appropriate unit also had a positive impact. The post pilot survey results for nursing satisfaction consisted of eighty Registered Nurses. Results of the tool were rated as: 43.75% excellent, 17.50% very good, 16.25% good, 6.25% fair, and 16.25 % poor. Transfers of patients to the wrong level of care decreased from six episodes before implementation to one.

**Conclusions and Implications for Practice:** Results demonstrated a positive impact on nursing satisfaction and an increase in patient safety. The handoff process was expanded to be used between the emergency department and all units within the organization. Further data will be collected to determine if electronic handoff reporting tool will continue to demonstrate an increase in patient safety, and nursing satisfaction.

## PRACTICE CHANGE/ACUTE CARE II

### Stakeholder Education and Guideline Proposal for Nitrous Oxide Use as Labor Analgesia

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**Purpose:** The purpose of this project is to introduce nitrous oxide for labor analgesia at an Army hospital by introducing a clinical practice guideline and educating stakeholders. **Background:** Most laboring women in the United States do not have access to nitrous oxide for pain relief in labor. Nitrous oxide is an inhaled gas mixed with oxygen that reduces the sensation of labor pain and reduces anxiety. It works and clears the body within minutes with minor side effects to women, like nausea and drowsiness, and no side effects to the fetus (Stewart & Collins, 2012). This option should be available at all birthing institutions including those in the Army. In 2009, the American College of Nurse-Midwives (ACNM) issued a position statement that endorsed a variety of pain management options, including nitrous oxide for laboring women. Nitrous oxide for analgesia in labor is readily available to women in other countries like Canada, Australia, and the United Kingdom. Women in the U.S. are usually offered epidural anesthesia and intravenous opioids for pain control in labor. This is a problem because women may want more options for labor pain management and may not be aware that they do not have access to an intervention that reduces pain and anxiety while not affecting the labor progress. Epidural anesthesia, the most common form of pain control in labor, is an intervention that leads to other interventions, for example Foley catheterization, continuous fetal monitoring, and intravenous fluids. This method also carries the risks of prolonged 2<sup>nd</sup> stage of labor, operative vaginal delivery, maternal fever, and maternal hypotension. Nitrous oxide, on the other hand, does not lead to other interventions or carry the risks of epidural anesthesia (Likis et al., 2012). The ACNM's position statement promoted a dramatic increase in the availability of nitrous oxide for labor analgesia in the U.S. Over 150 birthing institutions offer it to women in labor and the number will continue to rise ((Collins, 2015). It is an evidence-based, cost-effective way to promote healthy labor and birth in women. For these reasons CNMs and other nurses should advocate and work toward widespread implementation of nitrous oxide for labor analgesia in the U.S.

**Undertaking:** The following objectives are outlined to address the aim of this project:

- 1) Submit and present a guideline to an Army Hospital for the use of nitrous oxide in labor, specifically to key stakeholders including nurse-midwives, obstetricians, anesthesia providers, and obstetric nurses.
- 2) Increase stakeholders' knowledge of nitrous oxide use in labor.
- 3) Improve the guideline based on feedback from participants.
- 4) Disseminate the nitrous oxide guideline to other hospitals in the Army.

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## Abstracts of Poster Presentations

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### PSYCHIATRIC HEALTH

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ASSESSING CLINICIANS' ENDORSEMENT OF  
PATIENT ACTIVATION IN HEALTH MANAGEMENT

*Demetra Bastas-Bratkic, Penny Weismuller*

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A METABOLIC MANAGEMENT PRACTICE CHANGE  
IN A PSYCHIATRIC BEHAVIORAL HEALTH CLINIC

*Brenda J. Boyle*

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MENTAL HEALTH CLINICAL SIMULATION TO DEVELOP  
THERAPEUTIC COMMUNICATION STRATEGIES

*Louise Suit, Roxane England*

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LOW PERCEIVED CONTROL IS ASSOCIATED WITH  
DEPRESSION IN PATIENTS WITH HEART FAILURE

*Marysol Cacciata, Janet Amanda Hildebrand*

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PTSD IN CHILDREN AND PARENTS ADMITTED  
TO PICU: A SYSTEMATIC REVIEW

*Zainab Alzawad, Frances Marcus Lewis*

# PSYCHIATRIC HEALTH

## Assessing Clinicians' Endorsement of Patient Activation in Health Management

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*Penny Weismuller, DrPH, RN*

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**Purpose:** To determine the impact that a tailored training on patient activation (PA) and clinician approaches to enhance activation will have on clinicians' perceived role in PA at two time periods following training.

**Background:** The management of chronic conditions in the U.S. requires new strategies to more efficiently mobilize patients to be active partners in their health. One such strategy developed in 2004 is a validated psychometric tool known as the Patient Activation Measure (PAM) (Hibbard, J. H., Stockard, J., Mahoney, E. R., & Tusler, M.). This tool has demonstrated positive predictive properties for patient behavior, as well as for effective approaches for health counseling. This is valuable for clinicians, as a patient's score can serve as a guide for tailoring disease specific interventions. Prior research studies have demonstrated that departures from traditional patient-clinician roles are positively correlated with higher patient activation, but the success of this dynamic relies on clinician motivation for patient engagement. Continuing education training often does not incorporate strategies for partnering with patients. A relatively new and reliable measure to assess and differentiate between clinicians who support patient self-management, and therefore activation, is called the Clinician Support for Patient Activation Measure (CS-PAM) (Hibbard, J. H., Collins, P. A., Mahoney, E., & Baker, L. H., 2009). Few studies have examined the impact of training on clinician's beliefs on their role in enhancing patient self-management and the degree a clinician's belief in supporting patient activation has on the patient's health outcomes.

**Process:** The process included the development of a training educational module patient activation for primary care providers through a review of the literature, attending PAM conference(s), working with the corporation licensing the PAM and CS-PAM. Expert review of the educational workshop was obtained. The CS-PAM was administered to all clinicians prior to the in-person continuing education workshop; results were provided to each clinician and overall results with unique identifiers were maintained for analysis following the continuing education. Training sessions are now underway with a target of 50 participants. A pre and post-test will be conducted to assess knowledge readiness and acquisition prior to and after workshop attendance. Clinician readiness for the role of patient activation as measured before the training with the CS-PAM will be compared to one-month and three-months post intervention scores to determine if there is a change in clinician attitude and self-reported behavior. Results are pending.

**Outcomes:** Expert review of the developed clinician-training module and of the pre and post-tests has been successfully obtained. Outcomes to be reported include comparison of pre-training CS-PAM scores to post-test scores on clinicians' view of the value of patient activation and their self-reported patient activating behaviors.

**Conclusions:** Although clinical use of PAM is well supported through the research, there are still gaps in the research literature to demonstrate that clinicians can reliably assess patient activation and then engage the patient within the time constraints of a clinical encounter. Additionally, there have been minimal published reports on CS-PAM training via key strategies and assessing what links exists between PCP behavior, patient activation and patient outcomes. This is the gap this project is attempting to fill.

# PSYCHIATRIC HEALTH

## A Metabolic Management Practice Change in a Psychiatric Behavioral Health Clinic

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**Purpose:** The goal of the change project is to provide improved patient care in an outpatient community psychiatric behavioral health clinic by increasing the psychiatric provider's adherence to the recommendations of the metabolic monitoring clinical guideline for assessment and treatment of patients prescribed second-generation antipsychotics (SGA's). Psychiatric providers prescribing SGA's should ensure that a baseline blood pressure, height and weight for a body mass index calculation, and waist circumference are documented in the psychiatric note.

**Background:** As SGA's are the treatment of choice for psychotic disorders, their use has soared over the past decade. Trends have been identified between the use of SGA's and obesity, diabetes, and cardiovascular disease. In 2003 the American Psychiatric Association, the American Association of Clinical Endocrinologists, and the North American Association for the Study of Obesity convened and created a set of guidelines for metabolic monitoring of patients taking the newer SGA's.

The psychiatric behavioral health clinic is currently operational two afternoons a week and staffed with psychiatric physician residents and a newly hired psychiatric nurse practitioner (PMHNP). Currently the patient volume does not provide justification for the hiring of a medical assistant and any baseline data such as blood pressure, height, weight, or waist circumference should be collected and documented by the providers themselves. The new PMHNP acting as a change agent is in an excellent position to influence provider behavior in the collection and consistent documentation of this baseline data.

**Methods:** The Iowa Model of Evidence Based Practice will be used as a framework to pilot the practice change. Twenty four months of retrospective data from the electronic medical record will be collected evaluating patient charts of those prescribed SGA's and noting whether blood pressure, body mass index calculation or waist circumference were documented at the time of the psychiatric visit.

The target strategies in this project include education to the psychiatric providers on the metabolic monitoring guideline with pre and post knowledge evaluations, a review of rudimentary skills and documentation in measuring blood pressure, body mass index, waist circumference, reminder systems, chart audits and feedback, and addressing any perceived barriers to baseline data collection inherent in the implementation of a metabolic management protocol.

**Results:** The project results are pending. The project will be evaluated based on the following three objectives: 1.) a 20% increase over baseline in the documentation rate of body mass index (height x weight), 2.) a 20% increase over baseline in the documentation rate of blood pressures, and 3.) a 20% increase in the documentation rate of waist circumference. A descriptive and correlational analysis will be noted.

**Implications:** The project is the first step in the process of shifting psychiatric provider behavior to include adherence to the recommendations set forth in the guidelines for metabolic management of the patient prescribed second generation antipsychotics. The successful implementation of the project may have long lasting impact on attention to metabolic changes within the behavioral health clinic patient population.



# PSYCHIATRIC HEALTH

## Mental Health Clinical Simulation to Develop Therapeutic Communication Strategies

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**Purpose/Aims:** The purpose of using innovative clinical simulation strategies in teaching mental health nursing is to prepare baccalaureate nursing students to use therapeutic communication strategies with clients who have mental illnesses or behavioral management issues.

**Rationale/Background:** Nursing students frequently come to mental health nursing with anxiety, limited background in using therapeutic communication, and a limited knowledge of providing care to clients with serious mental illnesses or behavioral difficulties. In some instances, student nurses who are inexperienced in behavioral management are not provided with experiences needed by practicing nurses such as de-escalation of client's in critical situations. While learning about various behaviors and illnesses is an outcome, most students are fearful and struggle with how to communicate with clients who have mental health issues and behavioral problems. Mental health simulation allows a safe place for students to practice therapeutic communication techniques with a variety of live simulated clients to hone their communication knowledge and skills. Therapeutic communication skills are essential for the professional nurse in any situation requiring nursing care. Therapeutic communication is the foundation of mental health nursing and is a skill necessary for nursing practice in the ever-changing, complex health care environment.

**Brief Description of the Undertaking:** Prior to the clinical simulation, students prepare with reading assignments and by watching videos. During the simulation pre-briefing, affiliate faculty serve as clients with mental health issues and a second faculty demonstrates the role of the nurse in providing successful communication for the client situation. As students rotate through mental health simulations, they interact with affiliate faculty actors demonstrating usual client behavior with an array of situations including: depression, boundary issues, delusions, mania, anger and aggression, and alcohol withdrawal. Students practice behavioral management and intervention for client behaviors also including some mental health situations not available for student intervention in the clinical area like de-escalation of a client with mania. Students receive immediate feedback and coaching during debriefing with affiliate faculty to strengthen their communication skills, ease anxiety and fear, and to offer alternative strategies to address client needs and behaviors.

**Outcomes Achieved:** Students report an increased confidence in using therapeutic communication with clients who have mental health issues and a decrease in fear prior to their clinical experience.

**Conclusion:** By providing students the opportunity to learn therapeutic communication in an environment which provides safe interactions, students can take those tools to the clinical sites and are more prepared to use communication techniques, assess clients, and have a richer mental health clinical experience to prepare them for professional nursing practice.

# PSYCHIATRIC HEALTH

## Low Perceived Control Is Associated with Depression in Patients with Heart Failure

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**Purpose/Aims:** The aims of this research study are to: 1) describe levels of perceived control and depression in patients with chronic heart failure (HF); 2) examine the relationship between sociodemographic and clinical variables (e.g., age, gender, functional status [max VO<sub>2</sub>]), perceived control and depression in this population; and 3) determine the predictive value of perceived control on depression in patients with chronic HF.

**Background:** Depression is highly prevalent in patients with HF. It can cause cardiotoxic effect and has been linked to poor quality of life, high morbidity and mortality rates. Patient with HF experiencing depression have high hospital readmission rates compared with nondepressed individuals and they are more likely to suffer premature death. Yet, little is known related to the association between low perceived control and depression. Filling this gap in knowledge can provide opportunities to explore for effective interventions to reduce depression in this highly vulnerable population.

**Methods:** One hundred seventy three male and female patients (average age  $54 \pm 12.5$  years, average max VO<sub>2</sub>  $13.8 \pm 3.6$  ml/kg/min, 71% males, 60% whites) were recruited for the study. They were asked to complete the Beck Depression Inventory and Control Attitude Scale. Descriptive statistics, Pearson correlations, and multivariate regression were used to analyze the data. Level of statistical significance was set at 0.05.

**Results:** Average perceived control and depression scores were  $10.9 \pm 3.2$  and  $10.9 \pm 10.7$ , respectively; 41% were defined as likely to be depressed. Male gender was associated with higher perceived control while younger age was associated with higher functional status. Perceived control was associated with functional status and depression (see Table). After controlling for age, gender, and functional status, low perceived control and accounted for 12.4% of the variance in symptoms of depression.

Variables	1	2	3	4	5
1 Age	1.00				
2 Gender	-.001	1.00			
3 Functional Status	-.246**	-.093	1.00		
4 Perceived Control	.144	-.222*	.259**	1.00	
5 Symptoms of depression	.071	.045	-.173	-.368**	1.00

\*correlation is significant at .05 level (2-tailed) \*\*correlation is significant at .01 level (2-tailed)

**Implications:** Findings from this study show that depression is highly associated with perceived control over the heart disease in patients with HF. Interventions to support low perceived control need to be explored and warrant additional research.

**Funding:** American Heart Association Western Division (NCR, 133-09, PI, K. Dracup).

# PSYCHIATRIC HEALTH

## PTSD in Children and Parents Admitted to PICU: A Systematic Review

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**Purpose:** To critically appraise and systematically summarize research on the prevalence, risk and predictive factors of posttraumatic stress disorder (PTSD) in children admitted to a pediatric intensive care unit (PICU) and their parents.

**Background:** Despite the growing interest in PTSD in children admitted to PICU and their parents, there has been no systematic review of published research. There is also a growing concern that both parents and children may be at increased risk for PTSD. In the absence of knowing prevalence and risk and predictive factors for PTSD, programs and services lag far behind need.

**Methods:** A systematic review was conducted using PRISMA analysis and reporting methods. Five databases were searched from May 2016 to October 2016: PubMed, CINHAL, PsychINFO, Web of Science, and Cochran Library. Relevant articles examined PTSD in children admitted to a PICU ages 0 to 19 years, parents of PICU children, or both children and parents.

**Results:** A total of 52 PICU studies were initially identified, 17 of which met inclusion criteria. Full texts were assessed for quality using an appraisal tool adapted from the McMaster Tool and Effective Public Health Practice Project. The final pool of articles included three randomized trials, nine prospective cohort studies, two retrospective cohort studies, one prospective cross-sectional study, and two retrospective cross-sectional studies.

The PTSD prevalence rate in children ranged from 12% to 32%; parents' prevalence ranged from 12.2% to 42%. Overall, there was insufficient evidence to draw robust conclusions about PTSD risk factors for both children and parents due to heterogeneity in study measures, designs, and findings. One factor significantly predicted PTSD in children: illness severity (n=2). Three factors significantly predicted parents' PTSD: gender of parent (n=4), parental anxiety or stress (n=3), and number of stressful life events prior to PICU admission (n=2).

Only 41.18% of the studies included a definition of PTSD but there was no consistency in definition across studies. Children's' PTSD was assessed through self-report questionnaires completed by children or their parents (n=4); through interviews (n=3); or through both self-report and interview (n=1). Parents' PTSD was assessed in 14 studies through self-report (85.71%) or interview (14.29%).

Only two of the descriptive studies and one of the clinical trial studies used a theoretical framework to guide the study.

**Implications:** The absence of a common measure of PTSD precludes a reliable estimate of PTSD prevalence in PICU children and their parents and deleteriously affects the validity of study results on risk and predictive factors. Future studies are needed that conceptually and operationally define PTSD and include developing a standardized and valid PTSD measure that is relevant to PICU children and their parents. Future studies need to be anchored in a theoretical framework. This collective body of research is needed as a first step to prevent or reduce PTSD in this high risk population.

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## Abstracts of Poster Presentations

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#### CHALLENGES OF INTEGRATING NURSING RESEARCH WITH SOCIAL WORK RESEARCH

*Janet U. Schneiderman, Ellen F. Olshansky*

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#### DECREASING HEMATOMAS BY CONVERTING FROM NEEDLES TO CANNULAS

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#### WEB-BASED STRESS REDUCTION FOR OCCUPATIONAL HEALTH

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#### IDENTIFYING RECRUITMENT BARRIERS FOR OBESITY STUDIES

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#### METHODOLOGY TO INVESTIGATE MICROAGGRESSIONS AND HEALTH AMONG COLLEGE STUDENTS

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#### EVALUATION OF ADOLESCENT DEPRESSION SCALES: A MULTIDIMENSIONAL PERSPECTIVE

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COMPARING SMART WATCH AND RESEARCH  
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MEASUREMENT INVARIANCE OF THE CENTER FOR  
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SECONDARY ANALYSES IN NURSING:  
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LEADING EFFORT TOWARDS IMPROVING  
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*Monte Roberts, Jane M. Carrington*

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A CONCEPT ANALYSIS OF “STANDARDIZED WORK”

*Melodie Ruth Daniels, Joseph Burkard*

# RESEARCH METHODS

## Challenges of Integrating Nursing Research with Social Work Research

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**Purpose:** Provide a framework and examples of how nursing research can be integrated with social work research and embrace the intersection of health, nursing, and social work.

**Rationale:** The University of Southern California (USC) began a new nursing department within the school of social work. In order to integrate nursing within the social work research structure, nursing faculty have educated the interdisciplinary social work faculty about nursing's focus on person, health, environment, and nursing care and how this fits within social work's focus on person-in-environment. Both nursing and social work are concerned with understanding and explaining individual behavior within the context of environment. Using a specific emphasis on the social determinants of health, nursing research at USC has begun to explore the linkages between social and biomedical aspects of health. Additionally, the nursing department at USC has adopted the social work grand challenge of homelessness as one of their primary emphases for existing and future research projects.

**Methods:** Nursing faculty have joined social work faculty in numerous research endeavors. The first project is a grant application that links the local fire department with nursing and social work. The team is proposing a needs assessment regarding emergency calls (911) to identify the housing situations of those in need, the type of health services required, and the precipitating conditions for the calls. The purpose of this assessment is to identify how nurse practitioners may be able to accompany the fire department and provide health services that would decrease the need for using emergency departments and collaborate with social work to provide social services that may prevent repeat calls to 911. A second project involves data analysis of a longitudinal cohort study of young adolescents who have child welfare-documented maltreatment and a community sample. One of the nursing faculty has been involved in assessing the health of these adolescents as they age and has begun examining housing issues during late adolescence. The third project is a joint nursing-social work seminar on using grounded theory to conduct research funded by USC's Center for Excellence in Research.

**Outcomes:** The combined social work and nursing research team has completed an analysis of the predictors of unstable housing including homelessness in maltreated and comparison adolescents. We have found that male sex, a maltreatment history, more lifetime residences and not being Latino increases the chances of an unstable housing incident. We also found that an unstable housing experience is associated with increased odds of delinquency behaviors. The multidisciplinary fire department grant is under review but the conversations between nursing, social work, and the fire department have enlightened the need for how translational science can work with real-life problems. The qualitative research seminar will emphasize how grounded theory is an ideal methodology for examining the intersection of nursing and social work.

**Conclusions:** Nursing research can combine social work tenets with nursing science to develop inter-professional and trans-professional research projects that serve the public health.

## RESEARCH METHODS

### Decreasing Hematomas in a Med-Spa Setting by Converting from Needles to Cannulas

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**Purpose:** The purpose of this evidenced-based practice project is to standardize dermal filler injection techniques from needle administration to cannula administration within a multi-center, Southern California med-spa

**Background:** Accounting for greater than 2.2 million of in-office cosmetic procedures, dermal filler injections are the second most common in-office cosmetic procedures performed in medical aesthetics today. Historically, dermal fillers are injected using a needle to deposit hyaluronic acids at various dermal depths. Evidence suggests that there have been greater than 100 cases of permanent blindness due to embolization of facial arteries during dermal filler administration using a needle. The evidence also indicates that needle administration increases intra-procedural pain and hematoma severity. Recently, an alternative technique to needle administration has emerged as a safer and less painful alternative. Dermal filler administration via blunt-tipped cannula has emerged as an alternative to needles and because the tip of the cannula is blunted, less tissue damage and vessel laceration occurs. This new technique has been shown to decrease intra-procedural bruising and pain.

**Description:** All providers were trained on cannula technique and successfully converted from needle to cannula dermal filler administration techniques. Dermal filler guidelines were standardized for all centers of the facility. Cannula dermal filler administration will be performed on 50 patients over an eight week time period. Patients receiving dermal fillers via cannula over the eight week time period will also complete satisfaction surveys one-week post procedure. Data collection will start in October 2016 and continue for eight weeks. Evaluations of project outcomes and data synthesis will be begin in January 2017 with conclusions and project completeness scheduled for March 2017.

**Outcomes:** Goal is to decrease hematoma occurrence by 50 percent and intra-procedural pain by 75 percent with no decrease in aesthetic effect.

**Conclusions/Implications for Clinical Practice:** Cannula use in dermal filler administration can significantly decrease hematoma formation and increase revenue in consumer-based aesthetic practice as a result of increased patient satisfaction and patient referral. Opportunity to decrease incidence of blindness as a result of cannula use will make dermal filler administration safer for aesthetic patients.

## RESEARCH METHODS

### Web-Based Stress Reduction for Occupational Health

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**Purpose:** The purpose of this evidenced-based practice project is to implement a sustainable 6-week mindfulness web-based program to reduce stress of call center employees in a corporate setting.

**Background/Significance:** Stress is a major public health issue, calling for a need of better stress management programs to prevent and manage chronic stress. Stress is caused when an individual perceives environmental demands as beyond his/her adaptive capacity. In the workplace, stress leads to emotional exhaustion, job dissatisfaction, lower productivity, and impaired performance (Allexandre et al., 2016). According to The National Institute for Occupational Safety and Health report, 40% of workers reported their job was very or extremely stressful. The Seventh Annual Labor Day Survey results indicate that 80% of workers feel stress on the job, nearly half say they need help in learning how to manage stress, and 42% say their coworkers need such help (The American Institute of Stress, 2014). Mindfulness meditation consists of developing focused attention, non-judgmental awareness, openness, curiosity, and acceptance of internal and external present experiences, all of which aim to help individuals act more reflectively rather than impulsively. Internet-based stress management programs, focusing on mindfulness meditation, may provide easy access, minimize stress-related diseases, and improve individual resilience (Morledge et al., 2013). The study site experienced a high number of stress-related clinic visits and had a significant need for a program to reduce stress.

**Methods:** From September 2014 to June 2016, 860 employees were seen in the clinic and completed a health questionnaire. Of these employees, 15.6% were unsatisfied or very unsatisfied with their stress management. These employees were informed about the web-based mindfulness stress management program via email and if interested in completing the 6-week course, were encouraged to inquire by responding to the notification. A group meeting was held prior to the start of the program to introduce and review the details of the 6-week program. Another group meeting was held at the end of the program to debrief. Throughout the duration of the program, employees received emails every 2 weeks to ensure participation and completion of weekly topics. Two validated scales, The Perceived Stress Scale and the Mindfulness Attention Awareness Scale, were used at three time periods throughout the program: pre-program, post-program, and post plus 6 weeks.

**Outcomes Achieved:** It is expected that a web-based program based on the principles of mindfulness meditation will reduce stress and improve well-being in a stressful and emotionally demanding work setting

**Conclusions:** This program is expected to be reproducible and provide mental health awareness and stress reduction techniques to the corporate setting.

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## RESEARCH METHODS

### Identifying Recruitment Barriers for Obesity Studies

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**Purpose/Aims:** The purpose of this literature review is to identify the challenges researchers face when recruiting Latino pediatric patients into obesity studies and propose strategies to address these barriers.

**Background:** According to the Centers for Disease Control and Prevention (CDC) the number of obese children in the United States is currently in the millions. There is an urgency to address this growing problem because childhood obesity can lead to future medical problems some of which include dyslipidemia, hypertension, type 2 diabetes mellitus, and bone malformations. Research has shown that along with lack of physical activity and poor eating habits, being part of minority ethnic group is associated with being overweight or obese. Latino children have rates of obesity that are higher than both non-Hispanic White and Non-Hispanic Black children. The first step to increasing enrollment of Latino patients into obesity studies is to understand the barriers that hinder their participation.

**Methods:** The databases used for this literature review were CINAHL, PubMed, Cochrane, and Google Scholar. The following words, in various combinations, were used to search for articles: childhood obesity, pediatric obesity, obesity, nutrition, studies, challenges, problems, diet, research, and recruitment. Studies published between 2006-2016 were included. The studies had to meet the following criteria: specifically focus on describing the challenges examined by researchers when recruiting for childhood obesity studies. A total of six studies were identified that met the inclusion criteria.

**Results:** This literature review describes the following factors related to parents that may hinder recruitment into pediatric obesity programs: parental denial about their child's obesity diagnosis; confusion about obesity diagnosis; fear related to discussing sensitive issues; mistrust of researchers; and lack of motivation. Stigma was also a commonly cited barrier to program participation. Healthcare provider's lack of time to refer patients to programs and limited knowledge about how to discuss obesity with parents was identified as additional barriers. For both community workers (ex. teachers) and healthcare providers lack of "buy-in" into the programs they are asked to refer to create a challenge for researchers. Lastly, logistical issues such as transportation and scheduling played a role in recruitment.

**Implications:** In order to reduce the barriers faced by researchers recruiting Latino pediatric patients in obesity studies it is important to gain a better understanding of parents' denial and beliefs. Research examining the role of culture in parents' willingness to participate in obesity studies is warranted. In addition, it is important for researchers to address stigma directly and that an effort be made to change society's views on obesity. We need to acknowledge that society often views obesity as the new norm, making it difficult to help parents understand childhood obesity is a problem. Healthcare providers should receive more training related to discussing obesity with families and every effort should be made to accommodate them in order to increase their recruitment efforts. Lastly, logistical issues can be addressed through flexibility and patient centered care.

## RESEARCH METHODS

### Methodology to Investigate Microaggressions and Health among College Students

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**Purpose/Aims:** Microaggressions are recognized as harm-producing insults and slights associated with increased anxiety, acute stress, and engagement in risky health behaviors (e.g. smoking, alcohol and drug use), however the extent and impacts on health are not fully understood or adequately explored.

**Rationale/Background:** Microaggression studies have been mostly qualitative inquiries concentrated in the fields of psychology, sociology, education, and law. A mixed methods approach is being utilized to investigate the perceived health effects related to microaggressions and chronic stress among college students using methods designed to elicit information aimed at understanding lived microaggression experiences from participants' perspectives but focused on impacts that may have long term stress and health implications.

**Methods:** A sequential explanatory mixed methods model in which participants are self-administering surveys, using SurveyMonkey, about their microaggression experiences and perceptions of their own stress and health is being utilized for quantitative cross-sectional methods and semi-structured individual interviews are planned for qualitative methods to explore more in-depth the meaning of lived racial/ethnic microaggression experiences and relationships to perceived health. College students of all races/ethnicities, as defined by the United States Office of Management and Budget will be recruited from one academic institution to explore the specific aims. Quantitative data collection includes demographic data and utilization of reliable and valid scales to collect data about microaggression experiences, perceptions about stress and health, and coping techniques.

**Results:** Participants from racial/ethnic subgroups with statistically significant associations among microaggressions, perceived stress, and perceived health will be asked to participate in semi-structured individual interviews to conduct a more in-depth investigation into the descriptions and contexts of microaggression experiences and the perceived associations to stress and health.

**Implications:** Studying racial/ethnic microaggression experiences and perceived impacts on health using a sequential explanatory mixed methods approach is important to understand not just racial/ethnic microaggression experiences and differences in perceptions about stress and health but the climate and context in which racial/ethnic microaggressions are able to occur. The findings of this study may provide insights that contribute to information used to develop interventions and policies which address the health needs and campus services of a broader range of college students. While the findings of this project will not be applicable in other settings, it can potentially serve as a template for similar studies in other populations.

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**Funding:** National Institute of Nursing Research (NINR) T32 NR007077 and the Institute of American Cultures, UCLA Institute of American Cultures, Asian American Studies Center, and Bunche Center for African American Studies, University of California, Los Angeles.

# RESEARCH METHODS

## Geographic Information Systems and Service Gaps of Older Adult Ex-Offender

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**Purpose:** Since the use of geography information systems (GIS) can determine geographic shortages and preparedness of rehabilitation programs in offering age appropriate and accessible health services to older ex-offenders post-incarceration, the purpose of this integrative literature review was to determine how GIS has been used to identify the service gaps of older ex-offenders.

**Background:** Web-based tools like GIS are helpful in mapping spatially referenced health data to visualize population trends and patient outcomes among the older ex-offender population. Because reintegration into society by older ex-offenders is complicated by chronic illnesses, institutionalism effects, and criminal records, it is difficult for the ex-offender to find housing, receive age-appropriate health services and educational or vocational opportunities. It is unknown how geography affects the ability of older adults to successfully reintegrate, especially if they return to disadvantaged communities characterized by limited formal resources. Since there are a growing number of older ex-offenders, there is a critical need to investigate how GIS can be used to uncover the service gaps.

**Methods:** Thirty-five English, peer-reviewed articles were found from the following journal databases: Google Scholar, CINAHL, PubMed, and PsychInfo. The following key words were used: geographic information systems, GIS, and ex-offenders. Three duplicate articles were excluded and twenty-nine were excluded because they were not published within the last 10 years and did not utilize GIS to address health needs specific to the adult post-incarcerated population. Articles were evaluated for rigor and themes that identified the utility of GIS in identifying service gaps for ex-offenders.

**Results:** Three articles were critically analyzed. Two major barriers to reintegrating into society were difficulty in finding employment and stable housing, which were due to individual risk factors such as the history of incarceration, low educational status, drug activity including use and sale, or lack of job skills, and neighborhood risk factors such as spatial contagion (proximity to other ex-offenders). Another study mapped the strong association between the census tract incarceration rates and gonorrhea rates. The association was independent of age, race, and poverty. Additionally, GIS revealed that 70% of health and social services were located within proximity of where ex-offenders lived but there were disparities in the distribution of legal and mental health services. Overall, these articles determined that social and health care services, sexually transmitted infections, and substance abuse issues were critically important in this population. The age-appropriateness of services could not be evaluated.

**Implications:** This review shows there is paucity of literature as to how GIS has been used to uncover the service gaps of older ex-offenders. GIS has primarily been used to assess the health service availability and accessibility in the ex-offender population revealing a lack of health services in areas where ex-offenders return to live. Future studies could investigate disparities of health services using GIS analysis to determine which areas where older ex-offenders live have the highest prevalence of negative health outcomes and/or risk of re-incarceration. Ultimately, this can help providers determine best locations for age-related health and rehabilitation programs.

## RESEARCH METHODS

### Evaluation of Adolescent Depression Scales: A Multidimensional Perspective

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**Purpose/Aim:** The purpose of this study was to examine survey items from commonly used self-report adolescent depression scales to see whether these items adequately present four identified depressive symptom domains: cognitive, emotional, interpersonal, and somatic.

**Rationale/Conceptual Basis/Background:** Adolescent depression is the most common type of mental illness but is unrecognized and untreated. Depression is a multi-factorial disease; a variety of depressive symptoms can be grouped into four domains (i.e., cognitive, emotional, interpersonal, and somatic). Early identification and intervention in adolescent depression results in improved depression prevention and treatment outcomes. Self-report adolescent depression scales are used as a major screening tool; however, it is unclear if items from these scales adequately assess the four depressive symptom domains.

**Methods:** Deductive qualitative analysis was used to examine items from nine commonly used adolescent depression assessment scales. They are Patient Health Questionnaire-9 modified for Adolescents (PHQ-A), Beck Depression Inventory-II (BDI-II), Center for Epidemiologic Studies Depression Scale for Children (CES-DC), Mood and Feelings Questionnaire (MFQ), Kutcher Adolescent Depression Scale (KADS), Birleson Depression Self-Rating Scale (DSRS), Columbia Depression Scale (CDS), Montgomery Asberg Depression Rating Scale (MADRS), and Hamilton Depression Rating Scale (HDRS). A Ph.D. trained nurse and three graduate student nurse researchers reviewed scale items and assigned them into one of four depressive symptom domains using the REDCap (Research Electronic Data Capture) database system; an "other" option was available for raters when an item did not fit into the existing domains. Besides the agreement rate between and among raters, Krippendorff's alpha was used to assess the inter-rater reliability. A consensus meeting was held to discuss discrepant items and reach a final agreement among raters.

**Results:** Within these nine scales, 170 items were evaluated by four raters with average pairwise agreement of 0.76 and Krippendorff's alpha 0.64, which indicated the acceptable agreement. Full agreement was reached for 59.4% (n=101) of the items. The majority of discrepancies were found for items which potentially belonged to either cognitive or emotional domain, which can be contributed to the high correlation between cognitive and emotional variables indicated from the other study. Regarding the percentage of items from each domain of depressive symptoms, 39.4% (n=67) of items were categorized as cognitive, 35.3% (n=60) as somatic, 14.7% (n=25) as emotional, 10.0% (n=17) as interpersonal, and 0.5% (n=1) as other. The "other" item was "*Feeling down, depressed, irritable, or hopeless?*" which contained both cognitive and emotional symptom domains in the statement. Only four scales included all four depressive symptom domains.

**Implications:** Interpersonal stressors were indicated in the previous studies as one of important predictors of adolescent depression; however, this domain was underrepresented in existing adolescent depression scales compared to other domains. Additionally, clinically problematic behaviors such as substance abuse and self-harm, which are strongly correlated with adolescent depression was absent in those adolescent depression assessment scales. Future research should explore the addition of a "behavior" domain to assessing adolescents' depression related behaviors.

# RESEARCH METHODS

## Pitfalls and Preservation of Participants in a Pilot Study

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*Natalie Jackson, MS, PhD Student*

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**Purpose/Aim:** To describe the approaches and challenges of participant recruitment and retention during implementation of an electronically delivered, nationally based, pilot study addressing healthcare communication skills for breast cancer survivors.

**Background:** Minimal literature exists that addresses recruitment and retention strategies for studies that use national organizations to facilitate recruitment, and that attempt to retain participants with varying computer literacy.

**Methods:** Participants were recruited to the Medical Appointment Planning study (MAP) with the assistance of the Army of Women (AOW), associated with the Susan Love Research Foundation, in collaboration with the American Association for Cancer Research and the National Breast Cancer Coalition. Investigators work with the AOW to advertise research opportunities. After approval by the Susan Love Research Foundation, a prepared email “blast” was sent to the AOW. If interested, women responded directly to the research foundation who then sent contact information and basic eligibility and demographic information to the primary investigator. MAP study staff screened participants for eligibility then sent women information about the study, a link to the MAP program, and instructions for program use. Opening the link, reading the introductory materials and logging in to MAP indicated participant consent to participate. Retention strategies included a) offering a \$25 gift card for completion of a medical appointment and associated MAP surveys; b) implementing a series of email reminders alerting women to the need to complete surveys post-appointment, which also helped us address individual problems associated with survey delivery; and c) provision of individualized technical help, usually conducted by email.

**Results:** Recruitment closed within 2 hours due to an overwhelming response. Approximately 2000 emails were sent initially with 212 interested women responding immediately. Due to this initial large response rate, study staff were unable to immediately contact and provide several women with their individualized login ID, resulting in a loss of interested participants. Despite program debugging and testing during development, recruitment and retention were further challenged by connection and compatibility issues such as mobile versus laptop, and windows versus apple versus android operating systems that impacted how the MAP program operated. This contributed to additional participant withdrawal. Our tailored approach to technical assistance was successful in retaining women who emailed us with difficulties and whose problems were promptly resolved. Participants indicated via email their appreciation for gift cards, however, this did not impact attrition if technical difficulties persisted. At 10 weeks our sample consists of 51 women who have completed one or more medical office visits and the associated surveys, with 7 women completing three medical appointments and associated surveys thus concluding their MAP participation.

**Implications:** Future research enrolling participants using national organizations may benefit from time limited enrollment opportunities and enrollment over multiple time periods. In addition, studies that employ online applications may benefit by having a dedicated programmer available to promptly address and troubleshoot unanticipated problems. Evaluation of recruitment and retention strategies identified areas for improvement and areas of success that will be addressed and/or implemented in future larger studies.

# RESEARCH METHODS

## Comparing Smart Watch and Research-Grade Activity Monitors

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**Aim:** The objective of this presentation is to describe results of an initial feasibility test of two smart watch step counters as compared to a research-grade activity monitoring device.

**Background:** Smart watches are among the top selling consumer-grade devices of 2016 and show promise for use in health-related applications in everyday life. Many of these devices report the ability to record activity, though few manufacturers publish validity testing for their devices and there are few published studies of smart watches (Reeder & David, 2016).

**Methods:** We conducted an initial feasibility study (n=1) of smart watch step counters using a research-grade activity monitor as a control. The first author wore two smart watches (Pebble Classic and Samsung Gear) and the Actigraph WGT3X-BT activity monitor during every day living (Figure 1). Device tests were conducted in three different configurations: Pebble-Actigraph (3 days), Gear-Actigraph (5 days), and Pebble-Gear-Actigraph (4 days). Hourly activities, device usability, and technical issues were logged in a diary from 0800 to 1800 each test day.

**Results:** Smart watch step counters performed with varying degrees of accuracy as compared to the Actigraph control device (Table 1). Such variation occurred for hourly totals as well for daily totals. Hourly analyses of activity measurements in relation to user-logged activities from daily diaries will also be presented.



Figure 1. (a) Pebble Classic, (b) Samsung Gear and (c) Actigraph WGT3X-BT devices

Table 1. Example step count totals for all devices worn simultaneously

	6/7/2016		6/8/2016		6/10/2016	
	Steps	Accuracy	Steps	Accuracy	Steps	Accuracy
Actigraph	8947	-	12655	-	18780	-
Pebble	6053	68%	10268	81%	14392	77%
Gear	6753	75%	13841	109%	16326	87%

**Technical Issues.** One technical challenge is the need for a secondary mobile device, such as a smart phone or tablet. Smart watches only function with specific hardware and software versions of secondary devices. Each of the watches froze or had malfunctions during test periods. Bike riding was not recognized as a measured activity but car rides would trigger step counters. Short battery life was a limitation of both devices (2-3 days).

**Conclusion:** Smart watches appear to either under-report or over-report step counts as compared to a research-grade activity monitor. In addition, all devices diverge in their activity measurements, depending on activity. Smart watches have potential to enable cost-effective daily feedback based on activity levels and connection to health care providers through tailored messaging. However, larger studies to validate and understand smart watch function and usability must be conducted with targeted populations. Toward this end, standards for functional and usability test protocols, data collection, and algorithm transparency are needed. Alexandria David was supported in part by intramural funding from the Undergraduate Honors Program of The University of Colorado College of Nursing.

**Reference:** Reeder, Blaine, & David, Alexandria. (2016). Health at Hand: A Systematic Review of Smart Watch Uses for Health and Wellness. *Journal of Biomedical Informatics*, 63(5), 269-276.

## RESEARCH METHODS

### Measurement Invariance of the Center for Epidemiological Studies-Depression Scale

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**Objective:** This research sought to test the gender and temporal measurement invariance of the Center for Epidemiological Studies-Depression (CES-D) scale across two time points in order to compare differences in depression levels between men and women and to examine the stability of depression levels over time.

**Background:** The CES-D is a widely used scale screening for depressive symptoms in the adult population. The CES-D is frequently used to assess differences in depression across gender and changes in depression over time in numerous types of samples, with findings implying a true difference in the symptomology of depression across gender and across time. However, without a prior demonstration of the equivalence of the CES-D (i.e., a demonstration of measurement invariance) across gender and across time, it is impossible to determine whether the observed differences in depression are due to true differences or due to the measurement properties of the scale.

**Methods:** Multiple-groups and longitudinal confirmatory factor analysis was used to evaluate the measurement invariance of the CES-D in a healthy, community dwelling sample of 697 participants first entering the study, and 519 of those participants returning for an assessment two years later.

**Results:** Gender measurement invariance of the CES-D was demonstrated across both time points with men having significantly lower depression levels than women at time one ( $z = -3.62, -p = .000$ ) and time two ( $z = -4.06, p = .000$ ). Additionally, results indicated temporal measurement invariance of the CES-D with stable levels of depression over time ( $z = .849, p = .396$ ).

**Conclusion:** Demonstrating gender measurement invariance of the CES-D allows for the interpretation of gender differences in depression as expressed by the CES-D, as true differences. Similarly, demonstrating temporal measurement invariance of the CES-D allows for the interpretation of temporal changes in depression over time as expressed by the CES-D, as true changes.

**Implications:** The CES-D is a robust tool allowing healthcare providers and researchers to track depression across gender and over time, as well as to examine the effects of treatment interventions in adults.

## RESEARCH METHODS

### Secondary Analyses in Nursing: Exemplars from the Add Health Database

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**Purposes/Aims:** One of the purposes of this study was to identify and analyze variables within a large national database that would best predict adolescent reckless and emerging adult deviant behavior. One of the study research questions was: What set of variables within this database will predict adolescent reckless behavior and emerging adult deviant behavior?

**Background:** Adolescents and young adults as a group are generally healthy. Threats to their health and well-being come primarily from their behavior and life choices that they make. Research is limited with respect to the transition from reckless to deviant behaviors as adolescents become adults. The analysis of a large scale nationally representative database offered researchers the opportunity to explore numerous variables across many segments of the adolescent population, a segment of the population that is traditionally difficult to reach.

**Methods:** This study was a secondary analysis of certain variables within the Add Health database. Portions of Wave I (n = 90,118 adolescents) and Wave III (n = 15,197 emerging adults) public-use data were analyzed. Wave I focused on faculty influencing adolescent health and risk behaviors. Wave III included information related to decisions and behaviors during the transition to adulthood. Operational definitions for key variables were created. Scales from the original Add health study came from a variety of sources and were often combined or changed. In addition, there were no intact scales left from the original study. Thus, it was necessary for the researchers to create new scales and subscales. Prior to running Cronbach's alpha and confirmatory factor analysis on the newly created scales and prior to calculating any predictions about behavior, extensive data review and clean up (re-coding, data transformation) was necessary. Furthermore, many of the statistical assumptions needed to test the study hypotheses were violated and it was necessary for the researchers to use an alternative, less known, method (general estimating equations).

**Results:** When dealing with large national datasets, researchers may need to create scales and subscales, and run the necessary psychometric testing in order to determine scale reliability prior to running further statistical analyses. It is imperative for researchers to understand the coding and data collection process as adjustments will often need to be made. It is also important for researchers to understand the importance of testing statistical assumptions and to understand that common statistical tests have limits.

**Implications:** Working with large, national datasets can be challenging and rewarding for the researcher. The large sample size of these databases and the unlimited combinations of variables/concepts provide teams of researchers with the opportunity to use the findings to change policy, research, practice, and education.

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**References and Funding:** The data used in this presentation were made available by the American Family Data Archive (AFDA), Sociometrics Corporation, 170 State Street, Suite 260, Los Altos, CA 94022-2812. The study entitled The National Longitudinal Study of Adolescent Health (Add Health), Waves I & II, 1994-1996 and Wave III, 2001-2002 were conducted by J. Richard Udry of the Carolina Population Center, CB# 8120, University Square, University of North Carolina at Chapel Hill, Chapel Hill, NC 27516-3997. Funding for the data collection was provided by the National Institute of Child Health and Human Development (NICHD) under Grant No. P01-HD31921. Funding support for preparing the revised documentation for public distribution was provided by a grant (2 R44-HD31776) under Contract No. N01-HD-9-3306 from the NICHD to Sociometrics Corporation. The original investigators, funding agency, and Sociometrics Corporation are not responsible for the analyses or interpretations presented here. The content presented here is solely the responsibility of the author.



## RESEARCH METHODS

### Leading Effort towards Improving Communication and Workflow Using the HER

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**Purpose:** Research suggests the current electronic health record (EHR) supports data entry and poses barriers to data retrieval. This conflict poses questions as to the “fit” of the EHR into the acute care nurse workflow. Two concepts will be used to explore this phenomenon, data aggregation and workflow. Increasing our understanding of these concepts will contribute towards improving the EHR as a communication tool. Here we present the concept analysis for both data aggregation and workflow, which will serve as a foundation towards future research seeking to understand what sources of information are viewed by nurses and how nurses currently retrieve this information using the EHR?

**Description of Theory:** A blended theory approach is used to evaluate the RN’s perception of sources used for data aggregation (EHR and other sources), how the data is formulated into knowledge, and what sources of information are used to communicate patient needs. Goossen’s Nursing Information Management and Processing Model (NIMP) analyzes how the RN synthesizes data from the EHR into usable knowledge that can be acted upon (1996). Carrington’s Communication Framework compares how the system (EHR) characteristics affect the RN’s ability to electronically and verbally communicate patient data (Carrington, 2012). The blended theory approach evaluates the human/computer interaction (HCI) from a systems perspective, human perspective and the ability for HCI to ease communication to meet patient needs in a consistent and workable workflow.

**Process Used:** The process used was as described by Walker and Avant for concept derivation, synthesis, reformulation, and analysis. The concepts *communication* and *workflow* were first explored using scientific papers from journals. These papers were then analyzed to understand the derivation of the concepts. From this process the concepts *communication* and *workflow* were then analyzed and a gap in the science was identified. From this process, the concepts *communication* and *workflow* will then be used to guide research seeking to understand how the EHR can better serve as a communication tool.

**Logic Linking to Research Problem:** Based on this work data aggregation is defined as the conglomeration of all sources of patient data collected from the EHR into one physical or cognitive place to assist communication of patient needs. Whereas workflow is defined as the how the EHR interfaces and evolves with the plan of care from data aggregation, communication, treatment and re-evaluation to cooperate with the RN to manage priorities and assist with clinical decision making. These two definitions suggest an atmosphere where the RN and EHR can collaborate to promote precise care and establish concrete priorities from a system and human factors approach.

**Conclusion:** Linking the EHR and nurse in a collaborative communication and clinical decision making process may change how nursing interface, aggregate and communicate with the EHR to provide care for patients.

## RESEARCH METHODS

### A Concept Analysis of “Standardized Work”

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**Purposes/Aims:** A new paradigm in pain management has arisen due to a man-made epidemic of opioid related addiction and death. In 2016, in the United States, approximately 76 opioid -related deaths occur each day, with more than half of these patients using prescribed medications. Many studies have examined relationships of various analgesics and their efficacy in managing surgical pain; however, an effective standardized nursing process for pain management presents opportunity for an innovative approach. The purpose of this concept analysis is to inform the components of standardized work, including antecedents and consequences that will be applied to nurse-related management of acute surgical pain.

**Description/Definition of Theory/Concept:** Standardized work incorporates many components from industrial engineering and management. These components are based in research and quality improvement methodology. Standardized work was designed to include scientific evidence, caregiver consensus, and change management principles to create an optimized process. Standardized work must be reviewed periodically to incorporate new knowledge and address process failures. The concept of standardized work is an evolving state of the environment through the scientific management method applied to daily work. Standardized work is a dynamic process that includes specific content, sequence, timing, and outcome to decrease waste of time and resources. Outcomes are dependent on correct identification of unique problems occurring in the healthcare setting.

**Internal Consistency of the Theory/Concept:** Standardized work is a central principle of Lean philosophy; However, the concept of “standardized work,” is often misunderstood. Clear identification and inclusion of all components of “standardized work” creates a stronger process with internal consistency, resulting in optimized outcomes.

**Logic Linking Theory/Concept to Practice/Research Problem:** Healthcare organizations are transitioning to highly reliable organizations (HRO) to operate at higher safety levels. The HRO initiative incorporates “Lean” philosophy, a robust process improvement methodology enhancing nurses’ ability to provide safe patient care. Standardized work may be applied to unique problems occurring in the healthcare setting such as managing surgical pain while decreasing use of opioids. Nurse-related pain management practices have been studied in relation to physician practice and powerful analgesics; however, relationships between pain management and nurse specific indicators are not clear.

**Conclusions, Including Utility of Theory/Concept:** Standardized work is a dynamic process that includes specific content, sequence, timing, and outcome to decrease waste of time and resources. The development of standardized work for nurses to manage pain in the acute care setting may reveal opportunities for innovative approaches to pain management while decreasing opioid use in this setting. Many studies have examined the relationship of various analgesics and their efficacy in managing surgical pain; however, opportunities exist to develop an effective standardized nursing process for pain management. Nurses are well-positioned to lead using proactive approaches such as standardized work, informed by systems engineering, solving complex problems such as reducing opioid use for acute and chronic pain. The purpose of this study is to inform nurse-related standardized work for pain management within the population of the chronic pain, surgical-orthopedic population.



## Abstracts of Poster Presentations

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### RESEARCH METHODS II

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#### CHALLENGES OF MULTI-SITE RESEARCH

*Angela A. Richard, Heidi Wald*

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#### AN INNOVATIVE MODEL FOR VETERANS TO OBTAIN THEIR BACHELOR OF SCIENCE DEGREE

*Jene' M. Hurlbut, Imelda Revuelto*

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#### SLOPE OF ABSOLUTE DELTA AND SIGMA POWER BY NREM PERIODS WITH JIA SYMPTOMS

*Martha J. Lentz, Carol Landis*

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#### BACKGROUND AND DESIGN OF THE ESLD PATIENT-CAREGIVER DYAD STUDY

*Lissi Hansen, Karen S. Lyons*

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#### SENTIMENT ANALYSIS IN TWITTER FOR NON-PHARMACOLOGICAL PAIN MANAGEMENT: A PILOT STUDY

*Jia-Wen Guo, Katherine A. Sward*

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#### EVIDENCE-BASED PRACTICE IMPLEMENTATION STUDY AT A COMMUNITY HOSPITAL

*Colette Jappy, Heather Roff*

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#### DEVELOPMENT OF A FOCUSED RAPID ETHNOGRAPHIC EVALUATION (FREE) METHODOLOGY

*Perry M. Gee, Frances L. Patmon*

# RESEARCH METHODS II

## Challenges of Multi-Site Research

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*Victoria V. Dickson, PhD, RN, FAAN, Associate Professor<sup>2</sup>*  
*Cynthia E. Drake, MA, Professional Research Assistant<sup>1</sup>*  
*Margaret Kaehny, MPH, Research Associate<sup>1</sup>*  
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**Purposes/Aims:** The purpose of this project was to conduct a qualitative evaluation of the STOP CAUTI (Catheter-associated Urinary Tract Infections) cluster randomized clinical trial. Following study completion, focus groups and interviews were conducted with site study teams and key informants to explore their experiences with study participation and identify key facilitators and challenges to successful study completion.

**Background:** Multi-site trials provide significant advantages for development of evidence-based clinical practices, including large sample sizes and enhanced generalizability. Several challenges to multi-site research have been identified in the literature, including those associated with multiple institutional review board requirements, ensuring fidelity of study interventions across sites, the need for clear lines of communication and delineation of responsibilities, determination of data ownership and authorship of journal articles.

**Methods:** The STOP CAUTI project was conducted in 20 hospitals across the United States. All hospitals were members of the Nurses Improving Care for Healthsystem Elders (NICHE) national geriatric nursing program. Hospitals selected one inpatient unit for participation in the study. The intervention consisted of repeated audit and feedback over 18 months, using data from electronic health records (EHRs) or paper records to identify CAUTI and catheter duration. Additionally, a videotaped educational session on best practices for CAUTI prevention was provided to unit nursing staff. At the conclusion of the study, telephone focus groups with study teams and individual interviews with key informants were conducted to explore the hospitals' experience with study participation, including facilitators and challenges to successful study completion. A semi-structured interview guide was used that included questions corresponding to the five major domains of the Consolidated Framework for Implementation Research (CFIR). Data were transcribed and entered into Atlas.ti, then analyzed using a qualitative thematic approach.

**Outcomes Achieved/Results:** While factors affecting success of the project reflected those often reported for implementation of innovations (e.g., strong institutional support, a project champion, etc.), two primary areas of challenges emerged from the analysis. The first were challenges related to rigidity at several levels: institutional structures that were difficult to navigate, EHR structures that prevented easy access to the required data elements, and individual resistance to change. On the other hand, sites experienced challenges related to constant change. These areas of constant change included institutional priorities, changing EHR systems and staff turnover. These challenges corresponded to two inner setting constructs identified by the CFIR: implementation climate and resources.

**Conclusion and Implications:** Multiple challenges present for hospitals participating in multi-site research, particularly for research that spans several years. These challenges associated with dynamic health systems and rigidity to change occur at multiple levels and can impact the quality and amount of data that can be collected. Nurse researchers conducting multi-site studies should be aware of these challenges and plan strategies to prevent or address them in the research design phase. The CFIR may be a useful framework for anticipating and addressing such challenges.

**Funding:** This project was funded by AHRQ R18 HS 018377. Dr. Wald acknowledges the support of NIA 5 K23 AG034544.

## RESEARCH METHODS II

### The Creation of an Innovative Model for Veterans to Obtain Their Bachelor of Science Degree

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**Purpose:** The presentation will explain the procedures involved in creating an innovative admission pathway that facilitates veteran's abilities to obtain a Bachelor of Science nursing degree.

**Rational/Background:** Currently there will be over 1.5 million service members who will be separating from the military over the next five years (Snyder, Wick, Skillman, & Frogner, 2016). Nursing is an area that veterans are frequently attracted to due to their military training and the high demand for employment of registered nurses.

**Undertaking/Best Practice/Approach/Methods/Process:** The presentation will include the review of processes that assess the competencies that veterans acquire during military service so that academic credit can be awarded for these experiences. Additional topics covered will include a description of the approvals needed for the implementation of the admission pathway, support services developed to assist veterans in their transition to becoming a student nurse, recruitment strategies employed to increase veteran's awareness about nursing as a possible career pathway, and educational offerings provided to faculty to increase their understanding of veterans as students.

**Outcomes Achieved/Documented:** The presenters will share the results from the first year of the veteran admission pathway and the lessons learned. This will include feedback from the current veteran students.

**Conclusion:** Given the number of veterans returning to Universities, it becomes imperative to share the lessons learned in creating a supportive environment for these service members.

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#### Reference:

Snyder, C., Wick, K., Skillman, S., & Frogner, B. (2016). Pathways for military veterans to enter healthcare careers. *Center for Health Workforce Studies University of Washington*.

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**Funding:** This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number UF1HP28516, Nurse Education, Practice, Quality and Retention- Veterans' Bachelor of Science in Nursing Program, total award amount \$1,050,000.00. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

## RESEARCH METHODS II

### Slope of Absolute Delta and Sigma Power by NREM Periods with JIA Symptoms

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**Purpose:** Juvenile idiopathic arthritis (JIA) is a common rheumatologic condition in children. An estimated 300,000 children in the United States have JIA and the disease affects 1 in 1000 children worldwide. JIA can persist into adulthood and result in significant long-term morbidity. Unpredictable episodes of active disease with joint inflammation, pain, stiffness, and limited mobility are followed by episodes of inactive disease. Sleep disorders such as periodic limb movements, sleep disordered breathing, insomnia symptoms, and daytime sleepiness have been reported and have been associated with disease-related symptoms of pain and fatigue. The association of specific sleep brain wave frequencies with symptoms has not been examined. The purpose of the study was to examine the association of the slope of absolute delta and sigma power by NREM periods across the night with symptoms (pain, fatigue, sleepiness).

**Method:** Data from night 2 of a laboratory polysomnography study of children 6-to-11 years of age ( $n = 63$ ), with active ( $n = 33$ ) and inactive ( $n = 30$ ) JIA were used for spectral analysis of delta and sigma EEG frequency activity in NREM sleep. NREM periods were defined as the succession of stages 2, 3, or 4, lasting at least 15 minutes, and terminated by more than 5 minutes of REM or wakefulness. *Pain* intensity was measured with the Oucher Faces Rating Pain Scale. This scale is a series of 6 faces that range from (0) “doesn’t hurt at all” to (10) “hurts as much as you can imagine”. Children placed an “X” on a face that best described their pain. *Pain location* “Mr. Bones”. Children circled the joints on a skeletal figure that corresponded to location of their pain. The number of joints circled on the figure was summed to yield a total joint hurt score for the morning and the evening. *Fatigue* frequency and intensity was measured with the Child Fatigue Scale (CFS). This scale is a 14-item, instrument that measures both fatigue frequency (0-14) and ‘bothersome’ (intensity, Likert scale summed 0-70) [32]. Daytime *sleepiness* was assessed using a visual a scale with an anchor of “extremely awake face” (eyes wide open, humming a tune) at one end of a 100mm horizontal line and an anchor of an “extremely sleepy face” (eyes closed, snoring) at the other end of the scale.

**Results:** Pearson product moment partial correlation, controlling for disease condition, only two symptoms revealed a small negative association between the slope of absolute sigma activity across NREM periods (mean value) and morning pain ( $r = -.27, p = .06$ ) and morning joint hurt ( $r = -.27, p = .07$ ). There were no associations of symptoms with delta EEG frequency activity.

**Implications:** Children with JIA controlling for active and inactive disease state did not have significant association with symptoms (pain, fatigue, sleepiness). Thus sleep per se should not be the focus of intervention but rather the sleep disorders that have been previously associated with the symptoms of JIA.

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**Funding:** This research was supported by grants from the NINR, T32NR007106, NR012734, NR08136, and Center for Research on Management of Sleep Disturbances, NR011400.

## RESEARCH METHODS II

### Background and Design of the ESLD Patient-Caregiver Dyad Study

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**Background:** More than 400,000 Americans have end-stage liver disease (ESLD), an illness that entails tremendous suffering as well as early death. Despite advances in the treatment of viral hepatitis, the prevalence of ESLD is expected to increase with the growth of nonalcoholic fatty liver disease, and liver transplantation remains the only reliable treatment of ESLD. Although we know little about the various ways in which symptoms change along the progressive trajectory of ESLD, it is well known that patients with ESLD facing death rarely receive appropriate symptom management and palliative care. The absence of effective palliative care in ESLD likely results in progressive worsening of patient symptoms and health and greater strain on informal caregivers, but little is known about how physical and psychological symptom burden changes over time in both patients with ESLD and their caregivers. Therefore, there is a critical need to identify subgroups of patients and caregivers who would benefit most from early palliative care interventions specifically tailored to ESLD. This NIH-funded study uses a prospective descriptive design.

**Aims:** Aim 1 is to identify trajectories of change in physical and psychological symptom burden in adults with ESLD; aim 2 is to identify trajectories of change in physical and psychological symptom burden in caregivers of adults with ESLD; and aim 3 is to determine patterns and predictors of types of patient-caregiver dyads that would benefit from early tailored palliative care interventions.

**Methods:** Lenz's Theory of Unpleasant Symptoms was chosen as the research framework because of its interaction among symptoms. A sample of 240 outpatients with ESLD and their 240 informal caregivers are being enrolled through liver clinics at two health care settings. Data collection occurs at patients' routine clinic appointments at baseline, 3, 6, 9 and 12 months. Data collection methods involve a) collecting medical history, liver cirrhosis etiology, liver transplant status, medications and clinical events from the electronic medical records; b) administering questionnaires focused on symptoms and quality of life; c) assessment and documentation of disease severity by hepatologists and nurse practitioners; and d) collection of blood samples during scheduled phlebotomy for assessment of liver disease severity and function. Integrated multilevel and latent growth mixture modeling will be used to address the aims.

**Anticipated Findings:** We anticipate finding (1) unique trajectories of symptom burden in adults with ESLD and their caregivers, (2) types of patient-caregiver dyads that have distinct changes in symptoms over time, and (3) distinct patient-, caregiver- and dyadic-level factors that will help inform the development of early palliative interventions that are tailored to this new ESLD typology.

**Anticipated Implications:** The scientific knowledge gained from this study may change practice by identifying symptom burden in patients with ESLD and their caregivers individually and within patient-caregiver dyads. This practice change is likely to happen at many levels, including primary care and palliative care providers, nurses, social workers, mental health experts, and the entire liver transplant team.

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**Funding:** This work is supported by the National Institutes of Health/National Institute of Nursing Research (1 R01 NR016017-01).



## RESEARCH METHODS II

### Sentiment Analysis in Twitter for Non-Pharmacological Pain Management: A Pilot Study

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**Purpose/Aim:** The aim of this study was to explore comments on social media (i.e., Twitter) regarding non-pharmacological pain management methods.

**Rationale/Conceptual Basis/Background:** Non-pharmacological pain management methods are potentially beneficial in patients with acute and chronic pain, but user perceptions about individual methods are largely unknown. Social media is increasingly used as patient-generated data to capture opinions and perceptions.

**Methods:** A list of non-pharmacological pain management methods was generated by extracting information from journal articles published between 2010 and 2015 and from the first 30 web pages returned by Google, using “non-pharmacological pain management” as a keyword. Forty methods were identified and used as key terms for retrieving tweets. Data were collected conducted on January 10, 2016 by searching the Twitter site using “pain” and method names as query terms to retrieve the most recent 1000 tweets regarding each pain management method. A total of 6846 tweets were retrieved for sentiment analysis, a method of classifying texts by “positive” or “negative” orientation. Approximately 68,000 sentiment terms (2006 positive and 4783 negative words from Opinion Lexicon) were used in sentiment analysis. R was used for the data analysis.

**Results:** Yoga, massage, mind-body therapy, acupuncture, and breathing were mentioned most frequently; with more than 950 tweets each. Twenty-seven methods has less than 100 tweets including 4 (i.e., acustimulation, biopuncture, contralateral stimulation, and longevity) with 0 tweet. The majority of the tweets (n=5200, 76% of the 6846 tweet sample) did not express strongly positive or negative orientation about these methods. Of those with a strong sentiment (1646 tweets), 92% (n=1512) were strongly negative towards non-pharmacological pain management and only 8% (n=134) were strongly positive. Negative opinion was expressed about psychological therapy, chiropractic manipulation, distraction, relaxation, and breathing. Traction, art therapy, positioning, transcutaneous electrical nerve stimulation (TENS), and herbs were listed as methods with very strong positive opinion.

**Implications:** This study revealed some negative attitudes about non-pharmacological pain management methods, although the majority of tweets did not show strong sentiment (positive or negative). Additional research is needed to discover what contributed to users expressing strong attitudes towards non-pharmacological pain management. The majority of methods were mentioned by a low volume of tweets per method. This suggests that strategies may be needed to help patients become aware of non-pharmacological pain management method choices. Moreover, this study reveals that social media data can be used to evaluate patient perceptions. Patients used a variety of terms for the same method, which probably contributed to the low volume of tweets per method. Hence, it is important to develop ontologies and taxonomies for non-pharmacological pain management.

## RESEARCH METHODS II

### Evidence-Based Practice Implementation Study at a Community Hospital

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**Purpose:** The purpose of this study is to assess the baseline level of evidence-based practice (EBP) knowledge of clinical nurses at a community hospital using the Clinical Effectiveness and Evidence Based Practice Questionnaire. Results from the survey will be used to create a customizable toolkit for EBP education and implementation within the hospital.

**Background:** EBP is internationally recognized as a tool for delivery of current, evidence-based interventions that integrate research, clinical experience, and patient preferences to culminate in improved patient outcomes. Nurses play a vital role in providing safe, efficient, and effective patient care, and are additionally responsible to stay informed of current best practices and to continually question the delivery of care. EBP is a tool recognized by nursing to optimize care and outcomes. Due to the immense competition for resources in a hospital environment, EBP adoption and implementation is varied across settings. For successful implementation of EBP it is necessary to understand the baseline knowledge of nurses and to understand and respond to the related barriers and facilitators. A baseline survey of frontline nurses will elicit a real-time picture that will be used to design an intervention which has been identified as an EBP toolkit. While research has been done to identify the barriers in implementing EBP amongst nurses, a significant gap exists about building an EBP toolkit to address gaps in EBP knowledge.

**Methods:** Following Institutional Review Board approval for this pilot study, the Clinical Effectiveness and Evidence Based Practice Questionnaire will be distributed to approximately 400 frontline clinical nursing staff at a community hospital in Northern California via SurveyMonkey. Responses will be reviewed to ensure the questionnaire has captured actionable information. An EBP implementation toolkit will then be developed based on survey results with prioritization of interventions. Following the EBP toolkit implementation and education, the questionnaire will again be distributed to the clinical nursing staff to obtain post-implementation data. The responses from the post-implementation survey will guide reassessment and modification of the toolkit.

**Results:** Descriptive statistics will be conducted using Statistical Package for Social Sciences (SPSS). Additional analyses planned for the study include chi-square, analysis of variance (ANOVA) and t-tests.

**Implications:** There is little research aimed at assessing the current state of EBP knowledge of frontline nurses at healthcare organizations to then build an implementation toolkit. This pilot will help fill this gap. Results from this pilot have the potential to be applicable in other healthcare settings and to be used to implement EBP across a multi-state, multi-site healthcare organization.

## RESEARCH METHODS II

### Development of a Focused Rapid Ethnographic Evaluation (Free) Methodology

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**Purpose:** To develop an interdisciplinary rapid ethnographic methodology to be used to obtain high-quality descriptive investigation data with new technologies and in the fast-paced clinical nursing environment while utilizing limited research resources.

**Background:** Health systems are rapidly implementing a variety of new technologies and systems designed to support clinical practice and promote patient engagement. Focused or rapid ethnography is especially appropriate for situations where human-computer interactions occur, and with health systems who are appraising emerging technologies in the work setting. Moreover nurses are frequently at the forefront in these new technology implementations. Research is needed to determine the efficacy of these new systems and the associated impact on nursing practice. Due to clinical nursing responsibilities and other requirements in the patient care setting, access to nursing research participants may be limited. Many times nurses reported they did not have time to participate in interviews and found it difficult to participate in research during the work shift. Furthermore, keeping nurses over the end of the work shift or bringing them in on an off day may be not an option due to the financial and collective bargaining contract constraints. Nevertheless the collection of quality research data of these new phenomena is necessary and therefore a rigorous modified version of focused or rapid ethnography needed to be developed.

**Methods:** A review of the nursing, anthropology, sociology, informatics and consumer/marketing literature related to the use of focused or rapid ethnography was conducted. In addition, consultation with five experienced and published ethnographic research experts from a variety of fields were conducted in-person or via phone. Through a synthesis of the literature, utilizing important features from the different disciplines, and with the mentorship of experts, our team developed a non-traditional, qualitative nursing methodology. Moreover, our research team has labeled the novel method as Focused Rapid Ethnographic Evaluation (FREE). The FREE method shares many common features of traditional rapid or focused ethnography as described in the literature with the exception of our team's extensive use of field notes in lieu of digital recordings.

**Findings:** We have used the FREE methodology successfully across multiple nursing units, in four unique hospital settings and with a variety of new technology implementations. Through that process our team has made refinements and believe we have created a methodology to capture high quality descriptive data. We have successfully used the data to inspire new research projects, develop surveys and other instruments, and disseminate our research results. The nursing staff and leadership have embraced research projects when using these new techniques. Our research team found the associated analysis process to be complete and comprehensive and according to the study participants produced appropriate findings.

**Implications:** We believe FREE can be successfully used by nurse researchers who may be constrained by time, resources, clinical processes and regulation. In addition to the study of new technology implementations we believe FREE will also be used to study new nursing processes or perhaps the research of long-time nursing practices that may be need of improvement.

## Abstracts of Poster Presentations

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# TECHNOLOGY-BASED NURSING EDUCATION

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IMPACT OF ELSEVIER ADAPTIVE QUIZZING ON  
HESI EXAM SCORES AND NCLEX-RN® PASS RATES

*Nancy Haugen, Lorraine Mautner*

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USING CUSTOMIZED LIBRARY MODULES TO  
DEVELOP SKILLS IN ONLINE RN-BSN STUDENTS

*Carol J. Stevens, Judith Register*

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NURSING STUDENTS' PERSPECTIVES  
ON ONLINE AND HYBRID COURSES

*Fang-Yu Chou*

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LEADING CHANGE: THREADING DATA SCIENCE  
THROUGH THE NURSING PHD CURRICULUM

*Kimberly Shea, Sheila M. Gephart*

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REDESIGNING A HYBRID CLASSROOM GENOMICS  
MINOR FOR ADVANCED PRACTICE REGISTERED NURSES

*Hamza Abid, Sasha Binford*

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INTEGRATING SIMULATION SCENARIOS  
INTO ONLINE NURSING INSTRUCTION

*Mary Jo Stanley, Wendy Matthew*

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QUALITY ASSURANCE IN ONLINE  
DOCTORAL NURSING EDUCATION

*Mary Doyle, Nicolette Estrada*

BEST PRACTICES IN ENHANCING  
ONLINE TEACHING PRESENCE

*Connie S. Miller, Debra Hagler*

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INNOVATIVE INTENSIVE HYBRID  
RN-BSN PROGRAM DELIVERY MODEL

*Renee Hoeksel, Anne Mason*

# TECHNOLOGY-BASED NURSING EDUCATION

## Impact of Elsevier Adaptive Quizzing on HESI Exit Exam Scores and NCLEX-RN® Pass Rates

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**Purposes/Aims:** The purpose of this retrospective study is to determine two things: 1) would the use of an adaptive quizzing product from Elsevier improve students passing scores on the HESI Exit Exam in a BSN program; and 2) would first attempt pass rates on the NCLEX-RN® licensure exam improve among these students.

**Rationale/Conceptual Basis/Background:** All prelicensure nursing programs face the challenge of maintaining a high NCLEX-RN® licensure exam pass rate. A high pass rate is an indication of the quality of the program. The pass rates at our institution have been between 70-80% for the past several years. Faculty have implemented a variety of support mechanisms into the curriculum to improve pass rates. Interventions have included requiring an average exam score to pass the course, case studies, flipped classroom teaching methodology, reflective journaling, and classes on test taking skills. None of these have been effective in raising the NCLEX-RN® pass rate to the schools identified benchmark. The faculty implemented the Elsevier adaptive quizzing product within the last semester of the program to strengthen student content knowledge while improving their test taking skills. The adaptive quizzing package by Elsevier is a product for which there is a paucity of research.

**Methods:** This retrospective study will be conducted using two cohorts of students from the same BSN program. The control cohort will be composed of students who had completed the program the semester prior to the implementation of the adaptive quizzing intervention. The experimental group will be composed of the first student cohort to receive the intervention. Students were required to complete at least 500 adaptive quizzing questions prior to taking the first exit HESI exam. Exit exam results from this cohort were compared to the previous cohorts' results to determine if the intervention would improve HESI exit exam scores. Both sets of students were required to meet the same admission and progression criteria, and were taught using the same curriculum. Exit exam scores from the cohort who received the Elsevier adaptive quizzing program will be compared to the previous cohort's results to determine the interventions effectiveness. Inferential statistics will be used to determine if the intervention had a positive impact on HESI exit exam scores and first-time NCLEX-RN® licensure exam pass rates.

**Results:** This study is currently being developed for IRB review.

# TECHNOLOGY-BASED NURSING EDUCATION

## Using Customized Library Modules to Develop Skills in On-Line RN-BSN Students

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**Aims/Purpose:** The purpose of this study is to examine the online student's knowledge and utilization of library resources following the implementation of customized library learning modules. Furthermore, the study explores whether the learning modules improve the student's ability to locate and access credible and relevant literature for evidence-based nursing practice.

**Background:** The ability to access and utilize library resources may be challenging for online students who access library resources remotely, independently and with little direction and/or assistance from other classmates, the instructor or the on-campus librarian. Students enrolled in RN-BSN programs must learn quickly how to access and utilize library resources in order to search, access and retrieve credible and relevant evidence necessary to complete assignments and evidence-based nursing projects. A review of the literature shows that customized library tutorials are one way online students can develop their library skills (Shaw Morrison & Krishnamurthy, 2008; Stiwinter, 2013). In the Fall semester 2016, our RN-BSN program replaced the "old" generic library guides assignments with customized interactive library learning modules in the first two courses of the RN-BSN program. This study explores the impact of these learning modules.

**Methods:** Three customized library modules with learning outcomes were integrated into the first course of the RN-BSN Program [Course #1: Writing for Healthcare Professionals] and two customized library modules were integrated into the second course [Course #2: Professional Nursing Theory]. The following was measured: a) student knowledge of the differences between information on a research database compared with the open web, b) student ability to locate, access and evaluate the credibility and relevance of evidence and, c) the frequency students access and utilize library/librarian resources. Data was collected from two cohorts for each of the two courses using the customized library modules, one cohort prior to the implementation of the library modules and the second cohort after the implementation.

**Results:** Demographic and descriptive statistics will be presented. Parametric tests (i.e. paired t-tests) will be used to test the mean differences in each of the two sets of cohorts.

**Implications:** Findings from this study can further inform online faculty on the use of customized library modules as a strategy to teach online students the skills necessary to search, access and retrieve information, skills essential for nurses learning how to practice evidence-based professional nursing practice.

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# TECHNOLOGY-BASED NURSING EDUCATION

## Nursing Students' Perspectives on Online and Hybrid Courses

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**Purpose/Aim:** This paper presents the summary of a pilot project examining nursing students' perceptions and readiness for online and hybrid courses.

**Background:** With the rapid growth of information technology, educational technology has been increasingly used in medical and nursing education. Online or hybrid/blended course is also increasingly adopted as one of the teaching delivery modality in the nursing education curriculum. While the growing popularity of the online or hybrid courses is evident, there is limited literature on exploring the perspectives and readiness of nursing students on these teaching modalities. This project explored the perceptions and readiness for online and hybrid courses among nursing students.

**Methods/Results:** This project utilized a cross-sectional web-based survey method. The project protocol was approved by the IRB. A random sample of nursing students from both undergraduate and graduate programs of a public university in Northern California was invited to complete an anonymous online survey. The survey was sent out to 150 potential participants and the final results included 47 valid surveys completed in October 2015. The survey included questions about demographic characteristics, online readiness self-assessment, and perspective on online and hybrid courses. Among the sample completed the survey, 38% were in undergraduate program, 50% reported they were under 30 years old, 72% were in full-time study status, and 50% had either full-time or part-time work, 26% reported having children, 37% lived at least over 20 miles away from the campus, and 58% had taken at least one online or hybrid course in nursing program. The online readiness assessment indicates most student participants (about 75%) are comfortable in the online learning environment. The perspectives on online and hybrid classes are divergent. While comparing to traditional classes, students' opinions suggested they feel online and hybrid classes are easier, more fun, timely in receiving feedback, and they can better apply the material they learn. On the other hand, the opinions also suggested students could be less prepared, less motivated to learn, and feel less serious while taking online/hybrid classes. Opinions reported from additional open-ended questions also suggest nursing students prefer some degree of face-to-face interaction in the learning process, such as in traditional or hybrid classes. On the other hand, the online/hybrid classes do offer flexibility for students who have a long commute and/or a demanding work schedule.

**Implications:** This project provides preliminary evaluation data on the readiness and preferences on taking online or hybrid courses reported from the nursing students. Further research can include a larger geographically diverse sample of nursing students.

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**Funding:** The project is partially funded by the Development of Research and Creativity Grant, Office of Research and Sponsored Programs, San Francisco State University, 2014-2015 (PI: F.Chou).



# TECHNOLOGY-BASED NURSING EDUCATION

## Leading Change: Threading Data Science through the Nursing PhD Curriculum

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**Purposes/Aims:** To discuss the process, curriculum changes and outcomes to-date that are underway at the University of Arizona, College of Nursing. The PhD Data Science group aims to work with faculty to prepare nurse scientists for the future by identifying and integrating key data science content into core curriculum courses.

**Rationale/Background:** The American Academy of Colleges of Nursing (AACN) published a report, *Advancing Healthcare Transformation: A New Era for Academic Nursing* that highlights the importance of data science in the transformation of healthcare. Generating knowledge for nursing using “big data” requires skills to collect, clean, filter and merge data sets exceeding traditional data processing methods. Data science uses digital data to accelerate discovery, support and improve critical decisions to inform economic, political, and healthcare processes. Leveraging large datasets requires skills to manage data at the point of collection as well as the point of use. While research doctorates offer content in methods, theory, data analysis and substantive domain knowledge; data science is not commonly integrated into core curricula. Existing doctoral nursing curricula are extensive and complex; incorporation of new data science knowledge into core curricula must be carefully managed to provide seamless integration.

**Brief Description of Best Practice:** The Data Science group, composed of primarily informatics faculty, engaged in a structured process to assure the building of knowledge, trust and inclusion of all stakeholders in decision-making. A guiding conceptual model for data science integration across the core curriculum was developed. Key topics in data science required to establish a foundation were identified. Curriculum mapping provided potential courses where key topics could be integrated. Funding was secured to bring a data science nursing expert to the college to: 1) present national nursing initiatives for developing “Big Data” scholars; 2) brainstorm with faculty who teach methods, statistics, theory, and informatics; and 3) meet with the PhD curriculum committee. Ongoing meetings were planned for the Data Science group to continue to work with the course chairs to integrate key topics with respect to the current curriculum.

**Outcomes:** A white paper was written that has served as an executive summary for the project. A Data Science Organizing Model has been adapted to serve as a guide for organizing PhD research and other projects. Gaps and overlaps that will enable data science theory, philosophy, management, statistics and methods to be inserted into the curriculum have been identified. Core faculty, graduates and students have become stakeholders in the process and provided valuable feedback regarding the integration of data science curriculum.

**Conclusion:** Nurse scholars and scientists of the future will be required to understand how to work effectively with large datasets. The future is now and yet integrating data science into a PhD nursing curriculum can take a long time. Guided by the Data Science group, the integration of data science into core curriculum and informatics courses will enable graduates in 2020 to have marketable science skills as nurse scientists with exposure to data science.

# TECHNOLOGY-BASED NURSING EDUCATION

## Redesigning a Hybrid Classroom Genomics Minor for Advanced Practice Registered Nurses

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**Background:** Through the Precision Medicine Initiative (PMI), the Federal government is actively promoting initiatives for broad incorporation of genomics into the healthcare delivery model, which will significantly impact clinical practice in due time. Advanced Practice Registered Nurses (APRNs) across all specialties increasingly need expertise in precision medicine, including genomics basics. The University of California, San Francisco (UCSF) School of Nursing (SON) offers a minor in Genomics, however, its enrollment has been limited by scheduling conflicts and student workload. Substantial interest in the Genomics minor from students across all specialties was observed, revealing a need for redesigning the curriculum to increase its accessibility.

**Framework:** Three courses were developed with a hybrid structure of online and in-person meetings, which include: *Introduction to Human Genomics*; *Implications of Genomics for Nursing Practice*; and *Clinical Genomics* with an optional clinical or molecular laboratory practicum. Online content contains high-quality, user-friendly and interactive material. In-person meetings offer an opportunity for student-driven discussions from the literature, news magazines, and social media. Key content areas include fundamentals of genomics, family history and pedigree, screening for genetic predispositions, disease-specific genetics, and the application of genetics-focused technologies and therapies.

**Conclusions:** Enrollment in the first course has increased compared to previous years ( $n=14$ ), and includes a greater breadth of specialties. Students report an initial high level of satisfaction with the course. Faculty across all specialties are enthusiastic and supportive of the increased accessibility for their students.

**Educational and Clinical Relevance:** APRNs from all specialties are required to meet basic genetics and genomic competencies, and to be equipped with the knowledge and skills for delivering quality, cost-effective care to patients and their families.

**Keywords:** genomics, education, advanced practice, precision health

# TECHNOLOGY-BASED NURSING EDUCATION

## Integrating Simulation Scenarios into Online Nursing Instruction

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**Purposes/Aims:** To promote online instructional practices that support teacher knowledge of content with best strategies for online pedagogy. Using simulation scenarios, nurse educators provide a model for virtual participation in an online learning environment. Shulman's Pedagogical Content Knowledge serves as a model for the creation of this online instructional method, a blending of teacher's subject matter content and instructional methods.

**Rationale/Background:** Nurse Educators are challenged to provide teaching strategies that promote student learning especially in the online environment. Nurse Educators are subject matter experts and are uniquely positioned to relate content knowledge with pedagogical knowledge of teaching to support interactive learning environments.

**Undertaking/Best Practice/Approach/Methods/Process:** Collaborative efforts with online RN-BSN program faculty and MSN students support the creation of simulation scenarios in Transcultural Nursing, Leadership & Management, Professional Nursing, Seminar, and Community Health. Faculty and MSN students created short 3-5 minute simulation scenarios or edited from pre-recorded simulations. Vignettes aligned with specific course and unit objectives and were integrated into assignments and content that support learning outcomes for the week and course. Using the Blackboard Learning Management System, additional interactive tools were used to enhance student involvement with the scenario.

**Outcomes Achieved/Documented:** Inclusion of a virtual learning strategy for online instruction provides a real-to-life feel for online students who cannot partake in actual simulation. Use of graduate and faculty self-created simulations are an effective teaching strategy for targeting content areas within the online courses and overall for the program. Applying both content knowledge and pedagogical knowledge ensure best online practices and encompasses strategies that move beyond typical read and discuss processes.

**Conclusions:** As online education has moved to the forefront of college instruction, it is important to move beyond traditional read and respond online teaching practices. Online learning necessitates student involvement and interaction with their learning environment. Pedagogical Content Knowledge provides faculty with a model for integration of content and pedagogy for best practice in the online environment.

# TECHNOLOGY-BASED NURSING EDUCATION

## Best Practices for Enhancing Online Teaching Presence

*Connie S. Miller, DNP, RNC-OB, CNE*  
*Clinical Assistant Professor*  
*College of Nursing*  
*University of Arizona*  
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*Debra Hagler, PhD, RN, ACNS-BC, CNE,*  
*CHSE, ANEF, FAAN, Clinical Professor*  
*College of Nursing and Health Innovation*  
*Arizona State University*  
*Phoenix, AZ*

**Purpose:** The purpose of this project was to evaluate implementation of an evidence-based online educational module on teaching presence behaviors for online nursing educators.

**Background:** Online courses have become increasingly popular in graduate nursing programs, yet nursing faculty members often report limited or no formal education in online pedagogy. Students in successful online courses interact with one another, the instructor, and the course material in a *Community of Inquiry* (CoI). The CoI framework describes three types of presence essential in online learning—cognitive, social, and teaching. Cognitive presence involves learners constructing meaning based on critical thinking, while social presence refers to learners' feelings of connection to one another. Teaching presence, which includes instructional design and course organization, discourse facilitation, and direct instruction, is a significant predictor of students' affective learning, cognition, and motivation. Teaching presence is also reported to be a prime catalyst for establishing and maintaining both social and cognitive presence in online courses and enhancing a sense of community among students.

**Evidence Synthesis:** An exhaustive search of the literature from 2005-2015 was conducted. Synthesis of student-identified important teaching presence behaviors confirmed the significance of teaching presence in supporting cognitive and social presences and guided the development of an evidence-based online educational module, *Best Practices in Enhancing Teaching Presence in Online Courses*.

**Process:** The project was approved by the IRBs of two universities. Faculty members currently teaching online courses were invited to participate in the pilot study between September 2015 and March 2016. Three teaching presence survey tools were adapted, with permission, from work by Arbaugh et al. (2008). Instructors reported their teaching presence behaviors via electronic surveys prior to and 8 weeks after educational module completion, and reported their intent to perform teaching presence behaviors after completing the educational module. A total of 20 faculty members participated in some aspect of the pilot project; 7 participants completed all surveys with matching self-selected ID codes which allowed for pre-post comparison.

**Outcomes:** Self-reported scores for each of the teaching presence behaviors on the surveys were high both pre- and post-intervention, offering little perceived room for improvement in the small group of experienced instructors (71% had developed online courses) who completed the pilot study. Despite the statistically significant higher levels of intent to perform teaching presence behaviors immediately following the educational module, there was no significant change in the frequency of teaching presence behaviors self-reported 8 weeks after the educational module.

**Conclusions:** Teaching presence online requires knowledge, planning, and effort on the part of the instructor. Future studies with larger sample sizes, less experienced faculty members, or comparing instructor self-reported teaching presence to student perceptions of teaching presence could provide helpful direction for faculty development interventions. Information and intent may not be sufficient to propel instructors forward in establishing new online teaching behaviors. Continued support and coaching may be needed to promote effective faculty teaching presence behaviors in online nursing education programs.

# TECHNOLOGY-BASED NURSING EDUCATION

## Innovative Intensive Hybrid RN-BSN Program Delivery Model

*Renee Hoeksel, PhD, RN, Professor*

*Anne Mason, DNP, ARNP, PMHNP-BC, Assistant Clinical Professor*

*Lida Dekker, EdD, MN, PHCNS-BC, Associate Clinical Professor*

*College of Nursing*

*Washington State University*

*Vancouver, WA*

**Purpose/Aims:** This presentation will discuss the development, implementation, and outcomes of an innovative hybrid, student-centered course delivery model in a large, statewide RN-BSN Program.

**Rationale/Background:** The complexity of health care needs and the evolving health care system call for a well-educated nursing workforce yet the continuing shortage of BSN-prepared nurses is well-documented. Despite the growth in the number and size of RN-BSN Programs, many registered nurses are unable to attend real time, on campus programs to achieve their BSN. Considering the RN workforce is increasingly constituted by technology natives and there is escalating growth in programs utilizing hybrid delivery, developing novel approaches to classroom and online learning is key. Years ago our program began decreasing required on campus class sessions from meeting weekly to bi-weekly then to 5 times per 15-week semester. There is no known ideal dose response identified for the number of classroom sessions versus online sessions in the nursing education literature. As increasing numbers of students opted to view archived videos of class sessions asynchronously rather than attend in person on campus, we sought a solution for the “right” number of synchronous meetings, the “perfect” combination of synchronous and asynchronous.

**Approach:** Program leadership and faculty decided to trial a one-day intensive model whereby all students enrolled would come to campus once per term. The intensive was organized around a current nursing issue and the content was later woven into all courses scheduled for that term. The date of the intensive was publicized months in advance by pre-program advisors and on the college website. This eliminated schedule conflicts with courses offered on different days, thus allowing students flexibility and more control over their programs of study resulting in more timely progression to graduation. Topics to date included nursing self-care, narrative health care-hearing patients’ stories, motivational interviewing, suicide risk assessment and referral, and psychological first-aid for disaster preparedness.

**Outcomes Achieved:** Student opinion surveys were overwhelmingly positive about the value of the topics personally and professionally. Students reported enhanced connection to classmates. Faculty reported meaningful integration of topics into course content across the curriculum. Use of content expert guest speakers to enrich the learning experience provided stimulation to both students and faculty. Faculty presenters will share 1) details of creative integration of a topic across a variety of courses including leadership, management, population health, pathophysiology to name just a few, and 2) further details of student responses evaluating this model.

**Conclusions:** This is a promising nursing education practice that challenges faculty to thread the term’s chosen topic into every course scheduled for the RN-BSN Program that term—this requires faculty to strategically plan learning activities and have meaningful dialogue with each other across an entire program on an ongoing basis. Innovation in program delivery is needed as workplace demands on registered nurses escalate, and essential curriculum content expands. The working nurse seeking a BSN in the 21st century deserves more options for course delivery. Results from more program evaluation research are needed to inform promising practices in RN-BSN programs.

## Abstracts of Poster Presentations

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### VIOLENCE

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ALTERNATIVE TO SUSPENSION FOR SUBSTANCE  
USE: PROGRAM EVALUATION STUDY DESIGN

*Celestina Barboasa-Leiker, Michele R. Shaw*

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INTIMATE PARTNER ABUSE SURVIVORS'  
EXPERIENCE WITH FAMILY MEMBERS OF ABUSERS

*Casey MacGregor, MarySue V. Heilemann*

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STATE OF THE SCIENCE: EXPLORING  
COMMUNICATION IN THE TRAUMA ROOM

*Ryan J. Rasmussen, Jane M. Carrington*

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UNIVERSITY STUDENTS' PERCEPTIONS  
OF INTIMATE PARTNER VIOLENCE

*Kathy A. McKinney, Kristy Reuss*

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STRANGULATION IN DOMESTIC VIOLENCE  
CASES: A PUBLIC HEALTH ISSUE

*Michael Gerritsen, Max Veltman*

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FACILITATORS AND BARRIERS TO HEALTHCARE  
ACCESS IN SEX TRAFFICKING VICTIMS

*Cheryl L. Boyd, Cheryl Westlake*

# VIOLENCE

## Alternative to Suspension for Substance Use: Program Evaluation Study Design

*Celestina Barbosa-Leiker, PhD, Associate Professor  
Michele R. Shaw, PhD, RN, Associate Professor  
Cristina Ross, RN, MSN, PhD Student  
Washington State University College of Nursing  
Spokane, WA*

**Purpose:** In partnering with four school districts in North East Washington Educational School District (NEWESD) 101, goal of this pilot program evaluation is to determine the feasibility and initial efficacy of an internet-based marijuana psychoeducation program for high school students who would normally be suspended for first-time marijuana policy infractions. This study will be the first to test the intervention with high school and middle school students.

**Background:** Students who are suspended are less likely to succeed academically and are more likely to produce lower levels of achievement. Students that are expelled are more likely to be held back a grade. Students of color and students with disabilities are disproportionately expelled more than white students. Implementing action plans that engage students in an alternative to out-of-school suspension has been shown to positively affect attendance rates, school involvement, and feelings of community engagement. In 2011, congress cut funding for Safe and Drug Free Schools resulting in the loss of in-house alternatives to suspension for tobacco and drug-related issues. An in-school, online intervention tool would help to alleviate the long-term impacts of suspension and expulsion first and foremost by keeping the students on campus for their discipline.

**Methods:** Each of the four school districts will work within their respective districts' policies and procedures for suspension in the 2016-2017 academic year. Schools will use an online program, Marijuana 101 by 3<sup>rd</sup> Millennium Classrooms, a self-administered 4-hour online intervention course used for on-campus suspension for student marijuana violations. Washington State University College of Nursing will conduct a program evaluation of the use of Marijuana 101 within the four school districts.

**Results:** The program will be evaluated with school-, student-, and staff-level data. School level data will consist of Healthy Youth Survey self-report past 30 day marijuana use, count number of marijuana-related suspensions, percent of suspensions that are marijuana-related, drop-out rate, and school demographics (size, % free and reduced meals, race/ethnic and gender composition). Within-student change will be tested over time (pre-online education vs. post-online education vs. follow-up) for self-report substance use, social norms and perceptions of risk of substance use, and knowledge-based questions relevant to marijuana questions. Focus groups with school staff will be used to assess feasibility of the program.

**Implications:** This study will test the ability of an internet-based psychoeducational intervention to significantly decrease self-reported marijuana use, alter social normative beliefs about marijuana use, change perceptions of risk regarding the use of marijuana, and improve marijuana-use knowledge in students with a first-time marijuana-related infraction on school campuses. This program offers schools an alternative to out-of-school suspension that provides students with personalized, knowledge-based, motivational-interviewing style intervention. Thus, this project has the potential to positively impact nursing science by exploring new areas of research in adolescent substance use. School nurses are often the gateway through which substance use education is provided to students in schools. This project has the potential to advance nursing practice by providing school nurses with up-to-date information and research results to guide their practice.

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**Funding:** The study received financial support from Washington State University Grand Challenge Seed Grant (Craft, PI).

# VIOLENCE

## Intimate Partner Abuse Survivors' Experience with Family Members of Abusers

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*MarySue V. Heilemann, PhD, RN  
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Los Angeles, CA*

**Background:** One of the most common types of violent exposure for women is intimate partner violence (IPV), which includes physical violence, sexual violence, stalking, and psychological torment from an intimate partner. Research on IPV has focused on how women and children are affected by IPV during their relationship with an abuser and considerable attention has focused on the decision-making process for women around leaving an abusive relationship. In general, little is known about the relationships of IPV survivors and the family members of abusers (FMA). Further, there are two gaps in the research literature regarding extended families and the relationship with IPV. No studies have been encountered which consider FMA, other than in-laws. Second, no studies have examined any potential *positive* relationships with FMA for women or children while in relationships that involve IPV, or after separation from the abusive mate.

**Purpose:** A qualitative study was conducted to explore the experiences and perceptions of female intimate partner abuse survivors' relationships with FMA.

**Methods:** In-depth qualitative interviews were conducted in-person and/or via telephone with self-identified female survivors of IPV (n=17), age 21-55. Data collection and analysis was guided by Grounded Theory methodology. Atlas.ti software was used to facilitate data analysis.

**Results:** Survivors in our sample experienced FMA as variably providing affiliation, a sense of family, and instrumental support (e.g., childcare, housing). However, for some, FMA were also perpetrators of abuse that extended beyond the partner's abusiveness. Some FMA ignored and disregarded abuse done to survivors but others provided positive experiences for survivors. Additionally, some FMA, particularly siblings of abusers, offered encouragement or emotional support to survivors to leave abusive relationships.

**Implications:** Nursing and social work responses to IPV should not be limited to an individual survivor and abuser because the larger family context must be taken into consideration. FMA are capable of perpetrating and exacerbating abuse for survivors. As many FMA experience IPV themselves, intergenerational and intra-family abuse require coordinated responses from nursing and social work leadership. Given that some FMA are supportive and affirming of survivors' experiences with abuse by their family members, a nuanced response to the larger family system is warranted.

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**Funding:** This work was supported by the National Institute of Health (NIH)/Nursing Research (NINR) T32 NR007077.



# VIOLENCE

## State of the Science: Exploring Communication in the Trauma Room

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*Jane M. Carrington, PhD, RN  
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**Purpose:** Trauma is the leading cause of death for individuals under 46 years of age and the number four cause of death when including all age groups accounting for 150,000 deaths and 3,000,000 nonfatal injuries in the United States. Breakdown in communication between providers and nurses is one of the leading causes of sentinel events and adverse outcomes for patients in hospitals. The purpose of this research is to identify current understanding of communication in the trauma room and identify processes that can improve communication and advance technology development and acceptance within the trauma room.

**Theory Used:** Claude Shannon's Information theory guided this work. Information theory states that every message has three parts: sender, device and receiver. Factors that impact how well a message reaches receivers include entropy, negentropy, noise, redundancy and probability. Information theory will allow for improved understanding of how and why communication occurs in the trauma room and factors that influence the delivery and acceptance of messages.

**Process Used:** An extensive review of the literature was completed exploring communication in the trauma room. The databases that were included in the search were PubMed, CINAHL, and Scopus. Keywords used in each search were "communication" and "trauma room." Inclusion criteria included peer reviewed journal, published from 2005 to present, written in English, and be focused on the communication that occurs in the trauma room between the members of the trauma team. The information gained from this literature review will inform communication models that could be used in the trauma room.

**Results:** Forty-four papers emerged and of those, nine met the inclusion criteria. From these papers, the following themes emerged associated with communication: leadership styles, crew resource management (CRM), simulation, and debriefings. Each paper identified communication as an issue in the trauma room. CRM includes elements of the other emergent themes from the state of the science; therefore, CRM will be the focus of future research to increase effective team communication within the trauma room.

**Logic Linking to Research Problem:** Miscommunication has been identified as a leading cause of avoidable patient errors. Hierarchical leadership structures have been linked to ineffective communication in the trauma room. CRM has been successful in NASA and aviation industry to increase effective communication and safety. The highly complex environment of the trauma room may benefit from CRM to increase effective team communication and increase patient outcomes. Future research will investigate the plausibility of infusing CRM into the trauma room.

**Conclusion:** Ineffective communication throughout healthcare has been identified as major contributor to poor patient outcomes. A more complete understanding of effective communication within the trauma room will facilitate adoption of technology and increase patient outcomes.

# VIOLENCE

## University Students' Perceptions of Intimate Partner Violence

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Grand Junction, CO*

*Kristy Reuss, PhD, RN  
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*Bridget Marshal, DNP, APN, CPNP-PC  
Contributor/Faculty  
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Colorado Mesa University  
Grand Junction, CO*

**Purpose/Aim:** The purpose of this study was to determine if differences exist in the conception of intimate partner violence between male and female university students.

**Background:** Previous research regarding intimate partner violence (IPV) and college/university students has focused on the prevalence of IPV, but little research to date has focused on the university students' perception of IPV.

**Method:** This research was conducted at a rural university in the western United States using a convenience sample of university students and an electronic survey. Institutional review board approval was obtained prior to starting this study.

**Results:** N=332 university students (n=94 males, n=238 females) were surveyed about their perception of IPV. An analysis of variance (ANOVA) was conducted to analyze differences in responses between groups based on gender. Significance was set at  $p < 0.05$ . Significant differences were found between males and females regarding perceptions of victim and perpetrator characteristics [how acceptable is it for your partner to (threaten you to get you to do what they want ( $p = 0.006$ ), use force to engage in sexual activities ( $p = 0.019$ ), engage in sexual activity when partner unable to communicate due to alcohol ( $p = 0.030$ ), for your partner to use restraints on you without your verbal consent ( $p = 0.000$ )]. Study limitations include the failure to address whether students had ever received any type of education, either formal or informal, regarding IPV.

**Implications:** Study results highlight the need for gender-specific education and interventions in order to reduce the prevalence of IPV on university campuses.

# VIOLENCE

## Strangulation in Domestic Violence Cases: A Public Health Issue

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*Max Veltman, PhD, RN, CPNP-PC  
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Boise State University  
Boise, ID*

**Purposes/Aims:** The purpose of this project was to create a current and comprehensive database of scientific research related to the medical care for victims of strangulation in domestic violence incidents and the investigation and prosecution of these criminal cases.

**Rationale/Background:** Strangulation as a phenomenon in domestic violence first emerged from criminal justice and medical research, which has led to important changes in how cases are investigated and offenders prosecuted. However, it is only recently that significant research has been devoted to identifying its scope and significance in victim fatalities and survivor health. As public health officials better understand the dynamics of strangulation and intimate partner violence, researchers and policy makers have begun taking an interest in accurate and current statistics describing the problem; however, development of best practices for law enforcement, prosecutors and health care providers continues to be a challenge.

**Description:** A compilation of data related to death, injury, and health consequences related to strangulation in domestic violence was initiated through a collaboration between Boise State University and the Alliance for Hope International based in San Diego. The goal of this ongoing project was to identify best practices for the medical treatment of victims of strangulation and for the investigation and prosecution of perpetrators of this crime. An extensive database of relevant literature related to strangulation investigation, prosecution, and health outcomes was compiled by national experts in the field of domestic violence over the course of many years of collaboration and training. This resource became unmanageable as a user useful resource for professionals working with victims of violence. To address this problem, a team of scholars reconstructed the library of literature related to strangulation. Additionally, the team compiled a database of current state by state statistics related to strangulation deaths.

**Outcomes:** The newly restructured database is currently being presented to various law enforcement and medical organizations nationwide. Preliminary feedback has indicated that the new database will greatly enhance the ability of physicians and nurses working with victims of strangulation to quickly access current best practices for immediate and long term care of strangulation survivors. It is also hoped that as law enforcement personnel and prosecutors will use this important resource to help improve the quality of their investigations and prosecutions of strangulation. The new database of vital statistics related to strangulation deaths within each state continues to grow despite many challenges including, but not limited to, inconsistency in defining strangulation, lack of access to county fatality reports, inconsistency of autopsy data and communication issues within various systems involved in fatality review.

**Conclusions:** This project continues to be important in understanding both the scope of the problem of strangulation within domestic violence as well as understanding how best to care for survivors of strangulation attempts. Accurate, up-to-date data and the ability of key professionals to access that data is vital for health care and law enforcement personnel to be able to identify and assist victims of strangulation as well as prosecute perpetrators of strangulation.

# VIOLENCE

## Identifying Facilitators and Barriers to Healthcare in Victims of Sex Trafficking

*Cheryl Boyd, MSN, APRN-CNS, Assistant Professor*

*Cheryl Westlake, PhD, RN, ACNS-BC, Professor*

*Sarah Corr, Student Nurse*

*School of Nursing*

*Azusa Pacific University*

*Azusa, CA*

**Purpose/Aim:** The purpose of this paper is to review and synthesize the research literature about facilitators and barriers to healthcare access for victims of sex trafficking in the United States published since 2,000 when a definition of sex trafficking as separate and distinct from sex workers was provided.

**Background:** Victims of sex trafficking require comprehensive, routine healthcare services while in captivity and upon release. An estimated 68% of victims report having accessed some form of care during captivity; however, the care involves crisis or emergency care, rather than preventative or routine care. Substantial barriers to accessing healthcare may exist, preventing victims from receiving healthcare how and when needed.

**Method:** Academic Search Premier, Alt Healthwatch, Center for Disease Control, Cumulative Index to Nursing and Allied Health Literature, Education Resources Information Center, Google Scholar, Medline, ProQuest, Psych Info, Psych Articles, Psyc Extra, and PubMed were reviewed between May and September, 2016 for peer-reviewed studies published in English since 2000. Articles were considered for full text review if they contained data regarding trafficking within the United States (citizens or immigrants), healthcare access, and facilitators/barriers to such access. In addition, the reference pages for each included study were screened for potential, additional, relevant articles. Initially, 2,081 articles were identified. Duplicates were removed yielding 1,872 articles for abstract review of which 1,807 excluded as sex trafficking and healthcare access in the United States/America were not addressed. Full text review was conducted of the retained 65 articles of which eight were retained, analyzed, and synthesized.

**Outcomes Achieved/Documented:** Barriers to healthcare include individual/controller/pimp, community/provider issues. Individual issues included demographics, shame, mental/emotional instability, lack of knowledge/support/information/privacy, unpredictable schedules and living conditions, mistrust of others, fear, finances, violence, and substance abuse. Controller issues included being threatened, controlled, and prevented from seeking healthcare. Community issues included lack of recognition of problem knowledge to connect survivors with services, low standard of care for survivors, and provider issues of clinic availability and scheduling, communication skills, judgmental attitudes, and cultural insensitivity. Facilitators included survivor peer role modeling, controller/pimp knowledge of clinic services and fees and facilitation of healthcare, community financial and clinical flexibility such as federally qualified health care centers that accept patients without insurance/identification and the availability of mobile units/drop-in centers with after-hours care and convenient testing and results provision, and provider acceptance/lack of judgment, provision of privacy/perceived confidentiality.

**Conclusions:** The literature lacks sufficient information about barriers/facilitators to healthcare access among sex trafficking victims/survivors; however, some significant barriers are described that are amenable to amelioration. Thus, attention to the healthcare access needs of this specialized population and additional research is warranted.

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**Funding:** Supported by Azusa Pacific University's Scholarly Undergraduate Research Experience (SURE), summer 2016.



## **RESEARCH & INFORMATION EXCHANGE**

The Research & Information Exchange includes posters of research conducted by faculty, students, and nurses in clinical practice. These posters have been selected by, and submitted from, WIN member agencies.

### **ARIZONA STATE UNIVERSITY COLLEGE OF NURSING & HEALTH INNOVATION**

*Phoenix, AZ*

#### **RETENTION RATES AMONG SEXUALLY EXPLOITED FEMALE ADOLESCENTS: A QUALITATIVE LOOK AT WHY GIRLS STAY AND LEAVE**

*Samantha Calvin*

#### **ACTIVE TRANSPORTATION IN ETHNIC MINORITY WOMEN**

*Elizabeth Lorenzo*

#### **PARENTAL PERCEPTION OF SAFETY AND GENDER INFLUENCES ON CHILDREN'S PHYSICAL ACTIVITY IN MEXICO: A CROSS SECTIONAL STUDY**

*Amy Hutchens*

#### **COMPASSION FATIGUE IN RURAL ACUTE CARE NURSES**

*Rebecca McCay*

#### **FETAL AND INFANT ADIPOSITY, INFANT AND MATERNAL MICROBIOMES, AND INFANT OBESITY**

*Autumn Argent*

#### **PREDICTORS AND PREVALENCE OF HTN AMONG FILIPINO AMERICANS**

*Erlinda Singarajah*

#### **LONELINESS AMONG SENIOR ADULTS, CORRELATED FACTORS AND CONSEQUENCES: A SYSTEMATIC REVIEW**

*Salma Alyazeedi*

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### **AZUSA PACIFIC UNIVERSITY SCHOOL OF NURSING**

*Azusa, CA*

#### **PHYSICAL ASSAULT, PERCEIVED STRESS, COPING & ATTITUDES ON ASSAULT EXPERIENCED BY RNS**

*Carolyn Hanohano, Vivien Dee*

BIOMARKERS AND PTSD AMONG US VETERANS  
AT RISK FOR CARDIOVASCULAR DISEASE

*Christina Recinos, Vivien Dee*

IMPLEMENTING AN ERECTILE DYSFUNCTION SCREENING  
TOOL IN A PRIMARY CARE SETTING

*Mercy Atieno Manaen, Marie Fongwa*

APPLYING THE NEUMAN'S SYSTEMS MODEL  
TO SYSTEMIC LUPUS ERYTHEMATOUS RESEARCH

*Stacey Warner, Vivien Dee*

HEALTH RELATED QUALITY OF LIFE IN  
LEBANESE CHILDREN WITH THALASSEMIA

*Veletta Ogaz, Lina Badr*

THE "COMING OUT PROCESS" OF LESBIANS  
WHO ARE OBESE: A LITERATURE REVIEW

*Renee Johnson, Lynn Woods*

TOUCH AS SELF CARE FOR VETERANS WITH  
HYPERTENSION

*Ann Schloss, Lynn Woods*

ELDERLY PARTNERS' EXPERIENCE OF COLORECTAL  
CANCER DIAGNOSIS, SURGERY AND OSTOMY

*Dinah Herrick, Cheryl Westlake*

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**BANNER HEALTH**

*Phoenix, AZ*

NURSE RESIDENTS KNOWLEDGE OF AND  
COMPETENCE IN MULTI-MEDIA PROJECTS

*Juliet Kim, Robert Johnston, Joseph Hepworth*

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**BOISE STATE UNIVERSITY SCHOOL OF NURSING**

*Boise, ID*

**MOBILE BUGS**

*Veronica McDuffee, Caitlyn Boeck, Cindy Hong-Engelhard, Cara Gallegos*

**EVALUATING ADN FACULTY JOB SATISFACTION**

*Karen Thies, Teresa Serratt*

**NURSING STUDENTS' EVIDENCE-BASED  
KNOWLEDGE OF IM INJECTIONS**

*Chelsea Tindell, Pamela Strohfus*

**ORGANIZATIONAL IMPROVEMENT READINESS  
ASSESSMENT (OIRA) TOOL**

*Leslie Hough Falk, Teresa Serratt*

**EXPLORING LEARNING EXPERIENCES  
IN A RESEARCH CLASS**

*Brittany Simmons, Cara Gallegos*

**CAN TECHNOLOGY IMPROVE ENGAGEMENT  
AND CONFIDENCE IN A RESEARCH CLASS?**

*Hannah Lentz, Cara Gallegos*

**FACTORS AFFECTING STUDENT SUCCESS  
IN ASSOCIATE DEGREE NURSING PROGRAMS**

*Tracy Fawns, Pamela Strohfus*

**HEALTH ISSUES IN CHILD WELFARE:  
A COMPREHENSIVE DATABASE**

*Shelby Hopper, Max Veltman, Karen Godard*

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**CHARLES R. DREW UNIVERSITY  
MERVYN M. DYMALLY SCHOOL OF NURSING**

*Los Angeles, CA*

**REDUCING MEDICATION ERRORS IN MEDICAL SURGICAL  
UNITS BY USE OF COMPUTER TECHNOLOGY**

*Omaka Omeze, Jamina Ejercito, Michael Nkwuaku, Gertrude Cox,  
Peter Oziegbe, Magda Shaheen*

**INTERVENTION TO PREVENT DIABETES MELLITUS IN  
WOMEN WITH HISTORY OF GESTATIONAL DIABETES**

*Phyllis Tysdale, Jennifer Hough, Neilsen Altavas, Igwe Chimwendu,  
Luis Salas, Magda Shaheen*

**CARDIO PROTECTIVE EFFECT OF TURMERIC ON HIGH  
RISK ADULTS FOR CARDIOVASCULAR DISEASE**

*Tarnia Newton, Werwin Labrador, Ann Rocelyn Ofelia Yap Datingaling,  
Lorena Delarosa, Marie Bella Gabriel, Magda Shaheen*

**RELATIONSHIP BETWEEN SLEEP DISTURBANCES AND DE-  
PRESSION IN ADULTS: A SYSTEMATIC REVIEW**

*Adele Bulahan, Jessica Chong, Gladys Gallardo-Ramirez,  
Jhermie Salas, Jesse Santoyo, Magda Shaheen*



**IMMIGRATION, DEPRESSION AND MENTAL HEALTH  
SERVICE USE: DATA FROM NHANES 2006-2012**

*Ebere Ume, Magda Shaheen, Senait Teklehaimanot*

**EFFECTIVENESS OF VENTILATOR ASSOCIATED PNEUMO-  
NIA (VAP) BUNDLES ON VAP INCIDENCES**

*Darlington Agu, Jonathan Bowen, Lotus Miller, Alysa Sia, Tin Yau, Magda Shaheen*

**IMPACT OF FAMILY CHARACTERISTICS ON CHILDREN'S  
HEALTH AND MENTAL HEALTH**

*Mariles Rosario, Magda Shaheen, Senait Teklehaimanot*

**GLOBAL HEALTH INITIATIVE: PHILIPPINE MISSION YEAR IV**

*Nanette Leonardo, Romer Lingade*

**NURSE PRACTITIONER IN ACUTE CARE SETTING:  
STRATEGIES OF SUCCESS: SYSTEMATIC REVIEW**

*Ma Recanita Jhocson, Magda Shaheen*

**EFFECT OF PSYCHOLOGICAL DISTRESS & DISABILITY ON  
QUALITY OF LIFE IN PATIENTS WITH ASTHMA**

*Magda Shaheen, Senait Teklehaimanot, Kermah Dulcie, Deyu Pan*

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**HOAG MEMORIAL HOSPITAL PRESBYTERIAN**

*Newport Beach, CA*

**IMPLEMENTATION OF AN EVIDENCE-BASED INPATIENT  
ONCOLOGY ORAL CARE PROTOCOL**

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## WIN HONORS

The Western Institute of Nursing proudly recognized outstanding Western members and friends with the following awards and honors in 2016.

### DISTINGUISHED RESEARCH LECTURESHIP AWARD

The Distinguished Research Lectureship recognizes a senior researcher whose research efforts have made significant and sustained contributions to nursing. The 2017 award recipient was:

**Joan L. F. Shaver, PhD, RN, FAAN, FWAN**, Professor and Dean, College of Nursing, The University of Arizona, Tucson, AZ.

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### CAROL A. LINDEMAN AWARD FOR A NEW RESEARCHER

The New Researcher Award was established in 1976 by Carol A. Lindeman to support nursing researchers early in their careers. In 1987, the award was renamed to recognize Dr. Lindeman for her contributions and support of colleagues. The 2017 award recipient was:

**Manu Thakral, PhD, NP**, Postdoctoral Research Fellow, Group Health Research Institute, Seattle, WA.

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### REGIONAL GERIATRIC NURSING RESEARCH AWARD

The Western Institute of Nursing makes annual awards to a senior nurse researcher and a new nurse researcher to recognize outstanding nurse researchers and to foster and showcase geriatric nursing research. Recipient of the new researcher award in 2017 was:

#### **New Researcher:**

**Jane Chung, PhD, RN**, Assistant Professor, College of Nursing, University of New Mexico, Albuquerque, NM.

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### ANNA M. SHANNON MENTORSHIP AWARD

The Anna M. Shannon Mentorship Award was established in the name of the former Dean and Professor of the College of Nursing, Montana State University – Bozeman who unselfishly supported and promoted the professional growth of other nurses in the West. The 2017 award recipient was:

**Marie L. Lobo, PhD, RN, FAAN**, Professor Emeritus, College of Nursing, University of New Mexico, Albuquerque, NM.

## JO ELEANOR ELLIOTT LEADERSHIP AWARD

In 1988, Jeanne Kearns, formerly Executive Director of WIN, established the Jo Eleanor Elliott Leadership Award. This award honors Jo Eleanor Elliott for outstanding leadership while serving as the Director of Nursing Programs at WICHE and the Executive Secretary of WCHEN from 1957-1980. The 2017 Award recipient was:

***Judith A. Berg, PhD, RN, WHNP-BC, FAAN, FAANP***, Clinical Professor, College of Nursing, The University of Arizona, Tucson, AZ.

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## ANN M. VODA AMERICAN INDIAN/ALASKAN NATIVE/FIRST NATION CONFERENCE AWARD

The Ann M. Voda American Indian/Alaskan Native/First Nation Conference Award was established in 2008 by Ann Voda to encourage American Indian/Alaskan Native/First Nation nursing students or nurse clinicians to participate with the WIN community of scholars. The 2017 award recipient was:

***Lenora Duncan Littledeer, JD, MHA, BSN, RN, PhD Student***, College of Nursing, University of New Mexico, Albuquerque, NM.

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## WIN EMERITI

The honorary designation of WIN Emeriti was established in 1984 by the Western Council on Higher Education for Nursing (WCHEN). The Western Institute of Nursing (WIN) has continued this honorary designation to recognize retired nurses or other individuals who have demonstrated distinguished service to WIN or its predecessor, WCHEN. The individual on whom the honorary designation was bestowed in 2017 was:

***Ginette A. Pepper, PhD, RN, FAAN, FGSA***, Helen Lowe Bamburger Colby Presidential Endowed Chair in Gerontological Nursing & Professor, College of Nursing, University of Utah, Salt Lake City, UT.

---

## WESTERN ACADEMY OF NURSES

The Western Academy of Nurses recognizes and honors nurses who have demonstrated excellence in nursing practice and who have advanced nursing in direct care, education, or research. Inducted into the Academy in 2017 were:

***Marjorie V. Batey, PhD, RN, FAAN***, Professor Emerita, School of Nursing, University of Washington, Seattle, WA; Member of the Planning Committee for the first six conferences; and Editor, first ten volumes of the Communicating Nursing Research conference proceedings.

**Basia Belza, PhD, RN, FAAN**, Professor and The Aljoja Endowed Professor of Aging, School of Nursing, University of Washington, Seattle, WA;

**Neva L. Crogan, PhD, ARNP, GNP-BC, ACHPN, FNGNA, FAAN**, Professor, Department of Nursing, Gonzaga University, Spokane, WA;

**Mary de Leon Siantz, BSN, MN, PhD, FAAN**, Professor and Founding Director, Center for the Advancement of Multicultural Perspectives on Science, Betty Irene Moore School of Nursing, University of California, Davis, Sacramento, CA;

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**Charlene A. Winters, PhD, APRN, ACNS-BC**, Professor, College of Nursing, Montana State University, Missoula, MT.

---

### FRIENDS OF WIN AWARD

In 2010, the Western Institute of Nursing Board of Governors established the Friends of WIN Award. The award is given for stellar individuals or organizations that have made outstanding contributions to the Western Institute of Nursing (WIN). The intent of this award is to recognize these individuals or organizations and to thank them for their contributions. The 2017 award recipient was:

**John DeLapp, MS**, Owner, Photography by John DeLapp; Professional Engineer, US Public Health Service (Retired), Anchorage, AK.

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### AMERICAN NURSES FOUNDATION/WESTERN INSTITUTE OF NURSING SCHOLAR AWARD

The American Nurses Foundation (ANF) and the Western Institute of Nursing (WIN) jointly sponsor a research grant to a WIN member selected through the ANF selection process. The 2016 award recipient was:

**Angela Chia-Chen Chen, PhD, RN, PMHNP-BC**, Associate Professor, College of Nursing and Health Innovation, Arizona State University, Phoenix, AZ.

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### SIGMA THETA TAU INTERNATIONAL/WESTERN INSTITUTE OF NURSING RESEARCH GRANT

Sigma Theta Tau International (STTI) and the Western Institute of Nursing (WIN) jointly sponsor a research grant to encourage qualified nurses to contribute to the advancement of nursing through research. The 2017 grant recipient was:

**Kristiana Avery, PMHNP-BC**, PhD Student, College of Nursing, University of Colorado, Aurora, CO.



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