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Perspective

National Study Examining Excellence and Value in Physical Therapist Residency Education: Part 2—A Call to Action

Raine Osborne, PT, DPT, EdD[1,2,*,†], Matthew S. Briggs, PT, DPT, PhD, AT[3,4,5,6,†], Sara Kraft, PT, DPT[7], Mary Jane Rapport, PT, DPT, PhD, FAPTA[8], Lisa Black, PT, DPT, FAPTA[9], Carol Jo Tichenor, PT, MA, FAPTA[9], Gregory W. Hartley, PT, DPT, FAPTA[10], Chloe E. Bailey, MHA, BHA[2], Gail M. Jensen, PT, PhD, FAPTA[9]

[1]Department of Physical Therapy, University of North Florida, Jacksonville, Florida, USA
[2]Brooks Rehabilitation, Jacksonville, Florida, USA
[3]Rehabilitation Services, The Ohio State University Wexner Medical Center, Columbus, Ohio, USA
[4]Division of Physical Therapy, School of Health and Rehabilitation Science, The Ohio State University, Columbus, Ohio, USA
[5]Sports Medicine Research Institute, The Ohio State University Wexner Medical Center, Columbus, Ohio, USA
[6]Department of Orthopaedics, The Ohio State University Wexner Medical Center, Columbus, Ohio, USA
[7]Division of Physical Therapy, Medical University of South Carolina Charleston, South Carolina, USA
[8]Doctor of Physical Therapy Program, Graduate College of Health Sciences, Hawai'i Pacific University, Honolulu, Hawai'i, USA
[9]Department of Physical Therapy, School of Pharmacy and Health Professions, Creighton University, Omaha, Nebraska, USA
[10]Miller School of Medicine, Depts. of Physical Therapy & Medical Education, University of Miami, Coral Gables, Florida, USA

*Address all correspondence to Dr Osborne at: Raine.Osborne@UNF.edu

[†]Authors Raine Osborne and Matthew S. Briggs are equal contributors to this work and are designated as co-first authors.

Abstract

This Perspective provides a crucial set of actions with corresponding recommendations aimed at propelling the physical therapy profession toward excellence in residency education. The conceptual model includes elements of excellence in the delivery and outcomes of physical therapist residency education and the domain of value experienced by stakeholders impacted by physical therapist residency education. Linked to the conceptual model, the 15 actions, and 28 recommendations draw from (1) the Physical Therapist Residency Excellence and Value (PT-REV) study, (2) the Physical Therapist Education for the 21st Century (PTE-21) study, and (3) research in the learning sciences. This paper proposes a transformative call for decisive and consistent reform directed toward residency programs, residents, sponsoring organizations, and the physical therapy profession. Physical therapist residency education, initiated over 23 years ago, is no longer in its infancy with critical gaps in its maturation that need to be addressed systematically by stakeholders across the profession, thus improving the profession's ability to respond to changing societal needs.

This Perspective serves as a call to action and provides specific recommendation for what is needed to promote and achieve excellence in physical therapist residency education to improve the professions' ability to adapt to changing societal needs.

Keywords: Adaptive Expertise, Education: Postprofessional, Excellence, Master Adaptive Learning, Organizational Culture, Practice-Based Learning, Professional Formation, Residency, Value, Workforce

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Introduction

Physical therapist residency education has been discussed for over 50 years, with a steadily increasing number of accredited programs providing this level of postprofessional education for the last 23 years.[1–4] Despite this history, the physical therapy profession remains at a crossroads, questioning the need and value of residency education and what role it should play in preparing physical therapists for practice. The physical therapy profession was founded to fulfill the unmet societal need for "...'reconstruction' of people who were injured or functionally compromised."[5] To no less degree, the future of our profession relies on our adaptability and responsiveness to changing societal needs and the advancements in medicine and health care that impact patient care and intervention options.[6–8]

In 1967, Helen Hislop identified a critical problem faced by physical therapists as "...the breadth of information he must absorb—and the depth to which he must understand it to treat adequately the variety of patients he sees."[1] Dr. Hislop goes on to propose residency education as a solution to this problem, which has undoubtedly expanded exponentially since Dr. Hislop wrote these words. In 2016, 48 years later, Furze and colleagues[3] identified physical therapist residency as only being in its "infancy" and highlighted the shortage of residency programs and the need for educational consistency among existing programs. More recently, Hartley and colleagues[4] identified the continued gaps in capacity, evidence, educational practices, and professional progress which restrain the growth of physical therapist residency education. Although the physical therapy profession has taken steps toward residency education as a solution, including a recommendation for mandatory residency education by the Best Practices in Clinical Education Task Force in their report to the American Physical Therapy Association (APTA) Board of Directors in 2017,[9] much work remains to fully integrate residency education as an essential step in developing doctors of physical therapy who contribute, in equal collaboration with other health care profession, to improving health for all members of society.

The Physical Therapist Education for the 21st Century Study

In 2017, a team of physical therapist education researchers, Jensen and colleagues, published findings from the Physical Therapist Education for the 21st Century (PTE-21) study.[10,11] This study, modeled after the Carnegie Foundation's Preparation of the Professions Program,[12] aimed to identify characteristics of excellence in physical therapist education that can transform the preparation of physical therapists. Findings from the PTE-21 study were met with enthusiasm by the physical therapist education community, and the resulting conceptual model and recommendations were incorporated into the Vision for Excellence in Physical Therapy Education report published by APTA.[13] Although the PTE-21 study considered residency education within the analysis and found that residency education may have an important role in addressing the learner continuum, we identified the need for a more targeted investigation of excellence specific to residency education that included exploration of the value of residency.

The Physical Therapist Residency Excellence and Value Study

In 2019, members of the Residency and Fellowship Research Collaborative, a workgroup of the APTA Academy of Education Residency Fellowship Education Special Interest Group, designed a study to investigate excellence and value in physical therapist residency education. This study, funded by an APTA Academy of Education Research Grant, was modeled after the PTE-21 study. Our findings from the Physical Therapist Residency Excellence and Value (PT-REV) study are found in *National Study of Physical Therapist Residency Excellence and Value: Part1—Design, Methods, and Results*.[14] In this second paper, we propose a series of action items and recommendations (collectively actions) that serve as a call to action for stakeholders involved in physical therapist residency education. We believe these actions are critical to establishing residency education as an essential part of the physical therapist education continuum.

Analysis Process for Generating Actions

The iterative analytic and interpretative process used to develop our conceptual model (Fig. 1) is reported in the companion paper.[14] An initial list of actions was developed during the data analysis process. These preliminary actions were presented for initial reaction at the 2023 APTA Combined Sections Meeting, the 2023 International Association for Health Professions Education (AMEE) conference, and the 2023 APTA Academy of Education Residency Fellowship Research Symposium. Following the research symposium, we sent a survey requesting feedback on a revised draft of actions to the PT-REV study advisory panel and to the symposium participants, who collectively represent individuals and organizations with interests in physical therapist residency education. Eighty-eight survey responses were received and discussed by the study team with further revisions incorporated into the final actions presented in this paper. Feedback-based revisions focused on improving the accessibility of the language to residency educators who may be less familiar with educational theory and jargon, increasing clarity on who are the intended actors versus the targets of action, and consideration of organizations outside the physical therapy profession as potential education partners.

Our conceptual model includes a central core representing the domain of excellence which is surrounded by concentric spheres representing the domain of value. The domain of excellence represents the elements of excellence in the delivery of residency education while the domain of value represents the elements of value experienced by various levels of stakeholders impacted by residency education. Connecting the excellence and value domains are three bidirectional arrows which represent the signature indicators of excellence and value. The bidirectional nature of the signature indicators highlights the reciprocity between excellence in residency education and the value it creates. Our calls to action target the domain of excellence and the physical therapy profession because the domain of excellence is focused on the delivery of residency education and is where decisive action must occur, and action at the level of the physical therapy profession is required to establish the structure and parameters that govern

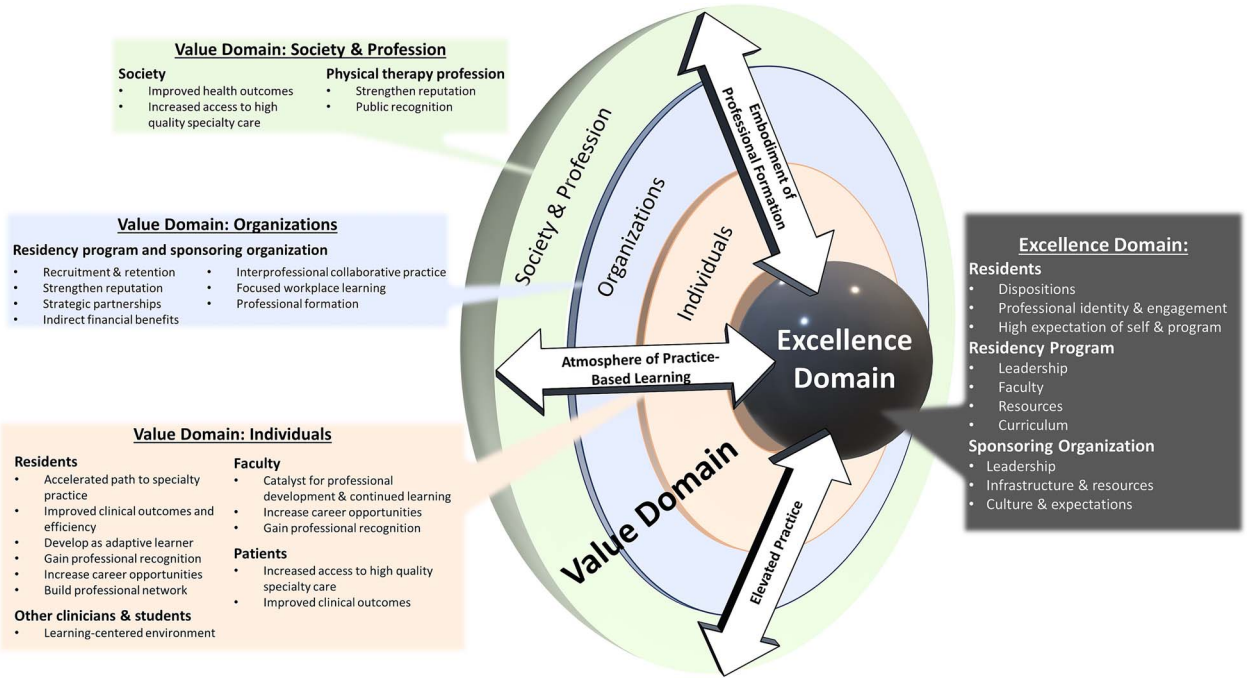

Figure 1. Domains, components, elements, and signature indicators of excellence and value in physical therapist residency education.

the future direction of physical therapist residency education. We have not included calls to action for the value domain; the value domain is a measure of the effects of our calls to action and will be represented in changes over time. The full list of calls to action and recommendations are provided in the Table and are described in this prospective paper.

Call to Action: Domain of Excellence

The Domain of Excellence addresses critical elements needed to achieve excellence in residency education delivery and outcomes. There are three components of this domain, the residency program, the residents, and the organizations (Fig. 2). Our observations and analysis of exemplary physical therapist residency programs resulted in the following calls to action to achieve excellence in residency education for the physical therapy profession. The components of the excellence domain are the intended targets of the actions, often requiring a variety of actors at different levels (eg, program, organization, and profession) to achieve the action.

Residency Programs

Residency programs demonstrated excellence when there was strong and visionary leadership, a committed faculty, and a well-designed curriculum that included exposure to a diversity of experiences, expertise, and perspectives.[14] Call to action:

Action 1: Invest in intentional and ongoing faculty development inclusive of all faculty (clinical and academic) engaged in the program.

Recommendation 1: Allocate resources to improve faculty knowledge and skills (mentoring, teaching, assessment, etc.) that are grounded in key elements of learning science, expertise development, and practice-based teaching and learning.

Recommendation 2: Recognize mentoring as a role performed by residency program faculty and adopt the term faculty (eg, clinical faculty, residency faculty) to represent these individuals' integration with the residency program and leadership within their clinical communities.

Action 2: Develop a model residency leadership program for residency program directors and faculty.

Recommendation 3: Develop robust mechanisms for residency leadership development that are firmly rooted in both leadership and education principles and focused on system-based practice.

Recommendation 4: Invest in leadership training for residency faculty to facilitate their ability to effectively model and teach leadership skills to the residents.

Action 3: Design programs with a deliberate commitment to diversity, ensuring exposure to a broad range of experiences, expertise, and perspective that provide a comprehensive view of health care and specialty practice.

Recommendation 5: Seek out and incorporate exposure to a variety of learning experiences and expertise that represent the full spectrum of practice within a particular area of specialty (eg, variety of settings, patient populations, and health care professionals).

Recommendation 6: Engage programs across specialty areas to collaborate in the development of strategies to attract more diverse faculty and create a sense of community for all underrepresented groups.

Action 4: Establish a core, shared curriculum for residency education across clinical specialty areas.

Table. Calls to Action and Recommendations for Creating Excellence in Physical Therapist Residency Education[a]

Actions	Recommendations
Actions Focused on Residency Programs	
Action 1: Invest in intentional and ongoing faculty development inclusive of all faculty (clinical and academic) engaged in the program.	**Recommendation 1:** Allocate resources to improve faculty knowledge and skills (mentoring, teaching, assessment, etc.) that are grounded in key elements of learning science, expertise development, and practice-based teaching and learning. **Recommendation 2:** Recognize mentoring as a role performed by residency program faculty and adopt the term faculty (eg, clinical faculty, residency faculty) to represent these individuals' integration with the residency program and leadership within their clinical communities.
Action 2: Develop a model residency leadership program for residency program directors and faculty.	**Recommendation 3:** Develop robust mechanisms for residency leadership development that are firmly rooted in both leadership and education principles and focused on system-based practice. **Recommendation 4:** Invest in leadership training for residency faculty to facilitate their ability to effectively model and teach leadership skills to the residents.
Action 3: Design programs with a deliberate commitment to diversity, ensuring exposure to a broad range of experiences, expertise, and perspective that provide a comprehensive view of health care and specialty practice.	**Recommendation 5:** Seek out and incorporate exposure to a variety of learning experiences and expertise that represent the full spectrum of practice within a particular area of specialty (eg, variety of settings, patient populations, and health care professionals). **Recommendation 6:** Engage programs across specialty areas to collaborate in the development of strategies to attract more diverse faculty and create a sense of community for all underrepresented groups.
Action 4: Establish a core, shared curriculum for residency education both within and across clinical specialty areas.	**Recommendation 7:** Build core curricula that align with the published domains of competence and core competencies, descriptions of specialty practice, population health and societal impact, systems-based practice, and the value of service learning and collaborative interprofessional activities. **Recommendation 8:** Build collaborative networks/partnerships that facilitate an understanding of the continuum of patient care (hospital-home-work-recreation) across programs, institutions, and health systems.
Actions Focused on Residents	
Action 5: Identify and develop committed lifelong learners.	**Recommendation 9:** Develop behavioral assessment methods to identify and evaluate the progression of lifelong learning characteristics. **Recommendation 10:** Create learning environments that stimulate and develop self-directed learning.
Action 6: Prioritize professional identity development during residency education.	**Recommendation 11:** Establish an interprofessional community of learning that models and develops professional identity and engagement. **Recommendation 12:** Create opportunities for meaningful engagement in professional activities outside of clinical practice (eg, community service, professional service, advocacy).
Action 7: Develop leadership qualities in residents.	**Recommendation 13:** Incorporate systematic and structured curricula to teach leadership skills in an interdisciplinary team environment.
Actions Focused on Sponsoring Organizations	
Action 8: Grow size, number, geographic representation, and access to residency programs.	**Recommendation 14:** Establish multiple residencies representing a variety of specialty areas of practice that align with organizational focus. **Recommendation 15:** Enroll multiple residents within each residency to create a community of learning.
Action 9: Leverage residency programs as catalyst for organizational excellence and innovation.	**Recommendation 16:** Engage clinicians from multiple health professions throughout the organization in educating residents. **Recommendation 17:** Create a culture of learning where all clinicians learn with and from each other. **Recommendation 18:** Develop pathways for residency graduates and faculty to continuously hone lifelong learning skills with a focus on solving meaningful problems within the organization.
Action 10: Develop innovative education models that span the continuum of physical therapist education.	**Recommendation 19:** Engage with education and professional organizations within and outside of the physical therapy profession to build and share innovative clinical education models that incorporate learners across the physical therapist education continuum. **Recommendation 20:** Systematically collect data on educational outcomes at the level of the learner, the patient, and the organization; using standardized assessments where available.
Action 11: Participate in large scale research efforts related to residency education.	**Recommendation 21:** Engage with APTA and Academies to conduct multi-site, multi-specialty research related to residency outcomes.
Actions Focused on the Profession	
Action 12: Determine the purpose and value of residency education as part of the learner continuum.	**Recommendation 22:** Develop a shared vision and strategy for residency education in physical therapy with a plan for implementation and dissemination.

(*Continued*)

Table. Continued

Actions	Recommendations
Action 13: Determine best-practice parameters for residency delivery models.	**Recommendation 23:** Develop avenues for sharing innovative models and partnerships that contribute to excellence in residency education. **Recommendation 24:** Refine clear, consistent, and efficient processes for residency program development, accreditation, and reaccreditation. **Recommendation 25:** Create support structures that reduce barriers and burden for organizations seeking to develop or expand residency programs.
Action 14: Take decisive action to demonstrate and increase the value of residency education in the profession across all spheres of influence.	**Recommendation 26:** Strengthen strategic planning between the APTA, Academies of the APTA, and academic and clinical leaders to develop clear and decisive messages regarding the scope and value of residency education for administrators, faculty, and potential applicants.
Action 15: Develop validated, uniform, longitudinal, and sustainable residency outcome measures.	**Recommendation 27:** Develop validated and uniform measures of learner, patient, and program outcomes. **Recommendation 28:** Create a mechanism for collecting, storing, and retrieving residency related outcomes to inform the future direction of residency education.

[a]APTA = American Physical Therapy Association.

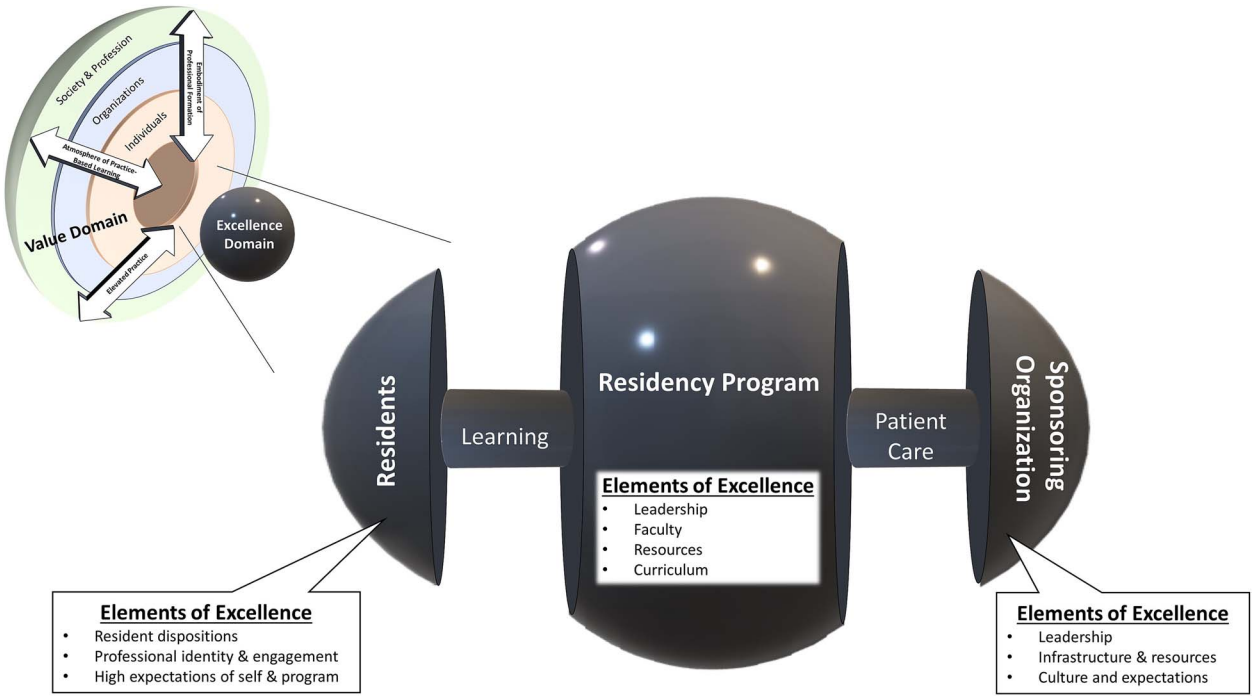

Figure 2. Expanded view of the domain of excellence showing the alignment of the three components (residency, residency program, and sponsoring organization) around a central shared mission of learning and patient care. The call out boxes identify the elements of excellence within each component.

Recommendation 7: Build core curricula that align with the published domains of competence and core competencies, descriptions of specialty practice, population health and societal impact, systems-based practice, and the value of service learning and collaborative interprofessional activities.

Recommendation 8: Build collaborative networks/partnerships that facilitate an understanding of the continuum of patient care (hospital-home-work-recreation) across programs, institutions, and health systems.

Faculty development is a necessary and important component of health professions education at both the professional and post-professional level.[13,15,16] In the physical therapy profession, Bilyeu and colleagues[17] identified the critical need for faculty development among clinical associated faculty (eg, adjunct faculty, laboratory instructors, guest lecturers) who are largely practicing physical therapists working in clinical environments and lack accesses to resources for developing teaching and assessment skills. This is also true of many physical therapist residency faculty who provide both didactic education and clinical mentoring to residents. Faculty development programs result in improved faculty effectiveness and productivity, with mentorship, a community of practice, and protected time cited as the most important elements of the program.[15] In addition, Tschoepe and colleagues[18] argue that leadership development should be an obligation of physical therapist education to meet the critical need for physical therapist leaders at all levels of health care. This view is supported in other literature which shows that leadership training can help develop educators and clinicians who facilitate excellence in health care education and delivery.[19–23]

Another necessary and important component to health professions education is the development of curricula that address critical societal health issues such as population health and health disparity.[6] Dunleavy and colleagues[24] highlight the importance of threading the topics of health equity and population throughout the professional education curriculum. This content should be further reinforced and contextualized to a specialty area of practice during residency education. The period of residency education represents the transition from a peripheral to full membership within a community of practice and is a transformational part of professional formation.[25] The integration of residents into a community of practice rich in diverse backgrounds, experiences, expertise, and perspectives enhances learning, collaboration, and identity formation.[26] While diversity of perspective and experience is desirable, Timmerberg and colleagues[27] point out that an absence of standardized and demonstratable performance expectations can contribute to unwarranted variance in practice. Competency-based education is one strategy to combat unwarranted variance in practice, ensuring that all residency graduates demonstrate the necessary knowledge, skills, and behaviors to provide high-quality specialty care that meets societal needs.[28]

Residents

Excellent residency programs recruit and develop residents who possess the qualities of a master adaptive learner, a strong professional identity and engagement in the profession, and high expectation for themselves and the residency experience.[14] Call to action:

Action 5: Identify and develop committed lifelong learners.

Recommendation 9: Develop behavioral assessment methods to identify and evaluate the progression of lifelong learning characteristics.

Recommendation 10: Create learning environments that stimulate and develop self-directed learning.

Action 6: Prioritize professional formation during residency education.

Recommendation 11: Establish an interprofessional community of learning that models and develops professional identity and engagement.

Recommendation 12: Create opportunities for meaningful engagement in professional activities outside of clinical practice (eg, community service, professional service, advocacy).

Action 7: Develop leadership qualities in residents.

Recommendation 13: Incorporate systematic and structured curricula to teach leadership skills in an interdisciplinary team environment.

Abraham and Colleagues[29] argue that physical therapist graduates "...must have the skills and mindset to adapt to rapid advances in science and practice within a myriad of social, cultural, economic, and organizational contexts." They embrace the Master Adaptive Learner Model[30] as a framework for developing these future physical therapists. In her Cerasoli Lecture,[31] Dr. Gail Jensen further describes how physical therapist educators can use the Master Adaptive Learner Model to develop curricula that instill a sense of social relevance and an intrinsic motivation for learning. Residency education offers an opportunity to build upon these dispositions, preparing physical therapist specialists to advance and adapt the field to meet changing societal needs. This can be achieved through residency learning environments that highlight patients as a focal point of learning, foster a "learner" identity, teach learning skills, and embrace collaborative learning.[32]

In addition, professional formation is critical for residents as they embark on their journey in the physical therapy profession. Cruess and colleagues[33] described professional identity formation as "a representation of self, achieved in stages over time during which the characteristics, values, and norms of the medical profession are internalized, resulting in an individual thinking, acting, and feeling like a physician." This definition can also be applied to physical therapists as they develop their professional identity. Jarvis-Selinger and colleagues[34] describes identity formation on two levels: the individual level and the collective level. The collective level is influenced by the environment and culture that the person is working in and can be shaped to positively influence the development of professional identity. This journey is influenced by their experiences; their role models; the curriculum; and how they are seen by their peers, patients, and the general public.[34] Frost and Regehr[35] advocate for exposing learners to intentionally designed learning experiences that reinforce and promote the types of professionals that the institution wants to produce.

Tschoepe and colleagues[18] also point to the importance of leadership development in the physical therapy profession and call for greater emphasis on "...education to develop the non-technical skills needed to lead, advocate, and influence change at the individual, interprofessional team, organizational, community, and population levels." High quality health care is team-based, and leaders are inherently essential for success. As such, leadership and collaboration are specifically identified as a core competency in physical therapist residency education.[36] A well-rounded leadership training program should include components on self-awareness, personal growth, and leadership skill training. Additionally, programs should consider a broad approach to leadership training including developmental relationships (mentors, coaching, peer learning partners), assignments and feedback both formal and informal.[37]

Sponsoring Organizations

Excellence in residency education is achieved when there is strong alignment between the residency program and sponsoring organization around a shared mission of learning and patient care. Senior leaders in these organizations recognize the value of residency education and contribute to program success by providing infrastructure and resources. Additional organizational characteristics that support excellence in residency education include access to learning opportunities, community partnerships, and a culture of high expectations for excellence and innovation.[14] Call to action:

Action 8: Grow size, number, geographic representation, and access to residency programs.

Recommendation 14: Establish multiple residencies representing a variety of specialty areas of practice that align with organizational focus.

Recommendation 15: Enroll multiple residents within each residency to create a community of learning.

Action 9: Leverage residency programs as catalyst for organizational excellence and innovation.

Recommendation 16: Engage clinicians from multiple health professions throughout the organization in educating residents.

Recommendation 17: Create a culture of learning where all clinicians learn with and from each other.

Recommendation 18: Develop pathways for residency graduates and faculty to continuously hone lifelong learning skills with a focus on solving meaningful problems within the organization.

Action 10: Develop innovative education models that span the continuum of physical therapist education.

Recommendation 19: Engage with education and professional organizations within and outside of the physical therapy profession to build and share innovative clinical education models that incorporate learners across the physical therapist education continuum.

Recommendation 20: Systematically collect data on educational outcomes at the level of the learner, the patient, and the organization; using standardized assessments where available.

Action 11: Participate in large scale research efforts related to residency education.

Recommendation 21: Engage with APTA and Academies to conduct multi-site, multi-specialty research related to residency outcomes.

A significant capacity gap in residency education remains despite the steady growth in the number of residencies over the last 20 years.[4] Furthermore, the American Board of Physical Therapy Residency and Fellowship Education (ABPTRFE) aggregate program data from 2022[38] show continued disparity in the geographic distribution of residency programs with the majority of programs offered in the South Atlantic Region (n = 105) and relatively few offered in regions such as New England (n = 13) and East South Central (n = 18). To fill this gap, sponsoring organizations, especially in areas with fewer residency opportunities, should increase both the number of residencies offered and the number of residency positions within each residency. Organizations that operate physical therapist residency programs report a myriad of benefits including improved clinical outcomes, increased referrals and financial growth, increased number of therapists obtaining American Board of Physical Therapy Specialties (ABPTS) board certification, increased culture of excellence and engagement, and increased recruitment and retention of high performing clinicians.[14,39] In addition, organization leaders rank residency graduates higher than experience-matched, non-residency trained peers in areas such as leadership (in the organization, community, and profession); quality care and clinical aptitude; communication skills; application of evidence-based practice; and efficiency.[40] These findings make investment in residency education an attractive strategy to improve organizational performance. To optimize this investment, organizations should be intentional about creating clinical learning environments that focus on a dual mission of high-impact learning and quality patient care.[14] Van Shaik and colleagues[41] suggest that exemplary learning environments leverage academic and clinical expertise, a diversity of perspectives, and continuous and collaborative improvement processes to integrate learning and practice that is centered on improving health for individuals, populations, and communities. To fill the capacity gap, it is important that organizations involved in residency education collaborate with the physical therapy profession and share information about the design and effectiveness of innovations in residency education. Participation in large, multi-center research studies is one important way to contribute to this effort. Multi-center studies typically have higher rigor and quality control, resulting stronger evidence that can have greater impact on advancing residency education.[42]

In addition, the residents' return-on-investment must be considered in the design, growth, and study of physical therapist residency education. Ambler[43] found that the debt-to-income ratio was higher for physical therapists than many other health professions, which influenced early career practice setting choices. Dickson and colleagues[44] found that higher educational debt is associated with greater number of hours worked per week, decreased job satisfaction, and greater number of expected years to retirement among physical therapists. Despite these findings, there is evidence showing that residency trained physical therapists have higher job and career satisfaction as well as earn more or just as much as non-residency or fellowship trained physical therapists despite being younger in age and experience.[45,46] Further, employers of physical therapists express a willingness to promote or increase compensation following residency training.[40] Moreover, perceptions of return-on-investment are not solely based on financial gain or loss, but also include non-economic factors such as gains in confidence, personal growth, and opportunity.[47] The results from our study of exemplary residency programs,[14] and others,[40,45,46,48–50] demonstrate that a positive return-on-investment for residency education is possible for both sponsoring organizations and residents. We must continue to identify models of residency education that produce a positive ROI for all stakeholders and scale these models to fill the capacity gap.

Call to Action: The Profession

The physical therapy profession holds a central role in determining the future of residency education. Although not explicitly part of the excellence domain in our model, our study of excellence and value in residency education revealed several actions the profession must take to provide direction and demonstrate a commitment to advancing excellence in residency education.[14] Calls to action:

Action 12: Determine the purpose and value of residency education as part of the learner continuum.

Recommendation 22: Develop a shared vision and strategy for residency education in physical therapy with a plan for implementation and dissemination.

Action 13: Determine best-practice parameters for residency delivery models.

Recommendation 23: Develop avenues for sharing innovative models and partnerships that contribute to excellence in residency education.

Recommendation 24: Refine clear, consistent, and efficient processes for residency program development, accreditation, and reaccreditation.

Recommendation 25: Create support structures that reduce barriers and burden for organizations seeking to develop or expand residency programs.

Action 14: Take decisive action to demonstrate and increase the value of residency education in the profession across all spheres of influence.

Recommendation 26: Strengthen strategic planning between the APTA, Academies of the APTA, and academic and clinical leaders to develop clear and decisive messages regarding the scope and value of residency education for administrators, faculty, and potential applicants.

Action 15: Develop validated, uniform, longitudinal and sustainable residency outcome measures.

Recommendation 27: Develop validated and uniform measures of learner, patient, and program outcomes.

Recommendation 28: Create a mechanism for collecting, storing, and retrieving residency related outcomes to inform the future direction of residency education.

The role of residency education within the physical therapist education continuum must be decided. In 1967, Helen Hislop wrote an editorial identifying the need for residency education to combat the vast knowledge demands faced by physical therapists.[1] Thirty-three years later, the first physical therapist residency programs were accredited. After 23 years of providing residency education, evidence demonstrating the benefits is beginning to mount.[14,39,40,45,46,48] The physical therapy profession is no longer in the infancy stage of residency education. The need is clear, feasibility is established, and the value is beginning to crystallize. Now is the time for the physical therapy profession to articulate and invest in a strategic plan to establish residency education as a standard step in all physical therapists' preparation for practice. Although the need is urgent, several gaps must be addressed to determine a cohesive and achievable strategic plan for adopting residency education as a standard component of physical therapists' education. There is preliminary evidence indicating that program-level factors can influence residency outcomes such as graduation rate and success on ABPTS board-certification exams.[49] Our model of excellence and value in residency education also points to elements of excellence that are consistent among exemplary residency programs.[14] However, additional data is essential to define the parameters that govern predictably effective residency education and to guide the enhancement of reasonable standards and efficient processes for obtaining and maintaining accreditation. Collecting these data requires a collaborative effort between residency programs and the physical therapy profession (eg, ABPTRFE, the Academies), creating a network where information about challenges and successes can easily be shared and integrated into decision-making processes at both the program and profession levels. A key component of this data collection and sharing process is the development of validated and uniform measures that are used across programs and specialty areas. These measures should be developed and implemented in a way that enhances program evaluation and reporting processes, efficiently providing useful information, and avoiding undue administrative burden.

Conclusion

The physical therapy profession has reached a pivotal moment where action is needed to invest in residency education as an entrenched and necessary part of the physical therapist education continuum. In this paper, we have meticulously described the context that led us to this point, emphasizing the critical need for consistent and transformative post-professional education to fulfill the profession's societal obligation. We believe the calls to action presented herein provide direction on important steps necessary to prepare physical therapists for current and future practice. Implementing these actions will require academic institutions, clinical organizations, and professional associations to collaborate to a greater degree than ever before. Although challenging, the strength of such collaborations working toward a common goal could leverage resources and enact meaningful change in physical therapists' education and patient care at levels previously unattainable. We suggest there will be increasing opportunities, and hence a growing number of examples, of how to put these action items into practice.

In its first 100 years, the physical therapy profession progressed from reconstruction aides to a doctorly prepared autonomous profession with a bold vision to transform society. As the profession embarks on the next 100 years, adopting residency education as the standard in physical therapist preparation for independent practice is a natural and essential developmental milestone. We must make this our goal and set our efforts towards eliminating the gaps that hinder our success.

Author Contributions

Raine Osborne (Conceptualization [lead], Data curation [equal], Formal analysis [lead], Funding acquisition [lead], Investigation [equal], Methodology [equal], Project administration [lead], Resources [equal], Software [lead], Supervision [lead], Validation [lead], Visualization [lead], Writing—original draft [lead], Writing—review & editing [lead]), Matthew Briggs (Conceptualization [lead], Data curation [equal], Formal analysis [lead], Funding acquisition [lead], Investigation [lead], Methodology [equal], Project administration [lead], Resources [equal], Software [equal], Supervision [lead], Validation [equal], Visualization [equal], Writing—original draft [lead], Writing—review & editing [lead]), Sara Kraft (Conceptualization [equal], Data curation [equal], Formal analysis [equal], Funding acquisition [supporting],

Investigation [equal], Methodology [equal], Project administration [supporting], Resources [equal], Software [equal], Supervision [supporting], Validation [equal], Visualization [equal], Writing—original draft [equal], Writing—review & editing [equal]), Mary Jane Rapport (Conceptualization [equal], Data curation [supporting], Formal analysis [equal], Funding acquisition [supporting], Investigation [equal], Methodology [equal], Project administration [supporting], Resources [supporting], Software [supporting], Supervision [supporting], Validation [equal], Visualization [equal], Writing—original draft [equal], Writing—review & editing [equal]), Lisa Black (Conceptualization [equal], Data curation [supporting], Formal analysis [equal], Funding acquisition [supporting], Investigation [equal], Methodology [equal], Project administration [supporting], Resources [equal], Software [supporting], Supervision [supporting], Validation [equal], Visualization [equal], Writing—original draft [equal], Writing—review & editing [equal]), Carol Jo Tichenor (Conceptualization [equal], Data curation [equal], Formal analysis [equal], Funding acquisition [supporting], Investigation [equal], Methodology [equal], Project administration [supporting], Resources [supporting], Software [supporting], Supervision [supporting], Validation [equal], Visualization [equal], Writing—original draft [equal], Writing—review & editing [equal]), Gregory Hartley (Conceptualization [equal], Data curation [supporting], Formal analysis [equal], Funding acquisition [supporting], Investigation [equal], Methodology [equal], Project administration [supporting], Resources [supporting], Software [supporting], Supervision [supporting], Validation [equal], Visualization [equal], Writing—original draft [equal], Writing—review & editing [equal]), Chloe Bailey (Conceptualization [supporting], Data curation [equal], Formal analysis [supporting], Funding acquisition [supporting], Investigation [supporting], Methodology [supporting], Project administration [equal], Resources [supporting], Software [supporting], Supervision [supporting], Validation [supporting], Visualization [equal], Writing—original draft [supporting], Writing—review & editing [equal]), Gail Jensen (Conceptualization [equal], Data curation [supporting], Formal analysis [equal], Funding acquisition [supporting], Investigation [equal], Methodology [equal], Project administration [supporting], Resources [equal], Software [equal], Supervision [supporting], Validation [equal], Visualization [equal], Writing—original draft [equal], Writing—review & editing [equal]).

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