

# ***Future of Anesthesiology Practice***



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What will the anesthesiologists of 2019, 2029, or 2039 face in their professional practice?

# The future

- Hospitals focused on the acutely & severely ill
- Increased numbers of Critical Care Units
- Safer drugs with minimal side-effects
- Pharmacogenetics
- Computer-controlled infusions

# The future, cont.

- Less invasive monitoring
  - Physiologic parameters
  - “lab” values
- Robotics
- Telemedicine – within institution (ICU’ s; EEG/SSEP’ s already); among institutions (tele-robotic surgery US-France)

# Immediate intraoperative anesthetic risks now much smaller than risks from:

- Remaining Co-morbidities
- Increasing age of the population
- Sequelae of surgical disruptions of anatomy & physiology
- Long-term effects of intraoperative events on perioperative outcomes

## Drs. Roy & Calicott:

Are we to become perioperative technicians, ie: management only of the immediate pre-operative, intraoperative, and immediate postoperative periods ?

Rather: Need to take responsibility and lead from the onset of surgical illness until the return to baseline after surgical illness.

Warner: Focus of the specialty should not be limited to immediate perioperative care, but on the care of the critically ill and those who face acute and chronic pain, including pain caused by procedures.

# The necessity to take responsibility and lead in reducing overall morbidity, eg:

## A. Reducing surgical site infection:

1. Avoiding intraop hypothermia
2. Minimizing perioperative hyperglycemia
3. Timely antibiotic administration
4. Minimizing lower oxygen content
5. Reducing administration of transfused blood, including preoperative optimization of anemia

# Reducing overall morbidity, cont.'

- B. Association of postoperative pulmonary complications with long-acting neuromuscular blockers
- C. Reducing postoperative ischemic cardiovascular events
  1. Close intra- and postoperative monitoring
  2. Maintenance of adequate hematocrit
- D. Reduction of tumor re-occurrence
  1. Avoiding blood transfusion
  2. Minimizing postoperative pain

# The Question of Other Providers

RD Miller: “...At the turn of the millennium, ASA was engaged in a multiyear...dispute over the appropriate degree of independence of nurse anesthetists...”

“...With a remarkable degree of safety, midwives manage uncomplicated deliveries under protocols providing for physician consultation....Why does our specialty’s view of the care of low-risk anesthetics differ so dramatically from obstetricians’ views of the care of low-risk deliveries?...”

# Models of Care

Warner: “...we have excellent anesthesiologists who markedly restrict their full potential to provide a positive impact on public ..safety by delivering one-on-one care to [low-risk] patients who do not warrant such physician-intensive, inefficient, and cost-ineffective care...How should we best use our physician skills??

## Models of care, cont.'

Warner, cont.: “..As proven in a number of diverse practice models and in critical care units daily, physician oversight or supervision of well-trained sedation and critical care nurses, nurse anesthetists, and anesthesiologists assistants is remarkably safe, efficient, and cost-effective model....

there is still a need for on-on-one... or even more intensive care provision to those [specific] patients who need physician skills...”

## Models of care, cont.'

Warner, cont.' : “will we..lead the development of practice models [intensive care model and others] that ensure all patients have the benefit of anesthesiologists involved in their care?....

..... everything..except for our core values of providing, overseeing, and improving the care of critically ill patients and those with acute procedural or chronic pain- can..and must change as our environment changes...”

# Diversify Our Practice and Increase Our Value to Patients, Colleagues, and Institutions

Patients in the interventional hospital of the future will need:

1. Preoperative evaluation and management
2. Invasive procedure management and post-procedure care
3. Pain management
4. Sophisticated care for multisystem, critical illness

# Preparing for diversified practice model

1. Remain qualified and capable for broad medical care.
2. Prepare for and seek out institutional leadership roles:
  - a. Directing and use risk-stratification to staff OR suites
  - b. Direct and use appropriate staffing models for interventional suites, ambulatory suites

## Institutional leadership, cont.'

- c. Direct and staff Critical Care Units
- d. Direct and staff with various providers  
Preoperative evaluation centers and/or In-hospital Preoptimization services
- e. Direct and use various providers to staff  
Pain Management Centers and/or In-hospital Pain Consultation Services

# Re-tooling Residency Training

1. Broad training in the fundamentals of medicine.
2. Emphasis on the most severely ill and rigorous cases, including advanced subspecialty training.
3. Thorough training to become experts in the perioperative care of the most seriously ill hospitalized patients before and after procedures.
4. Training in the participation and supervision of team-based care with non-physician providers.

# Research Perspectives

1. Research which is relevant to society as a whole.
  - a. Physiology/molecular biology of organ systems; surgery as a standardized stress state
  - b. Effects of anesthetics on the developing brain.
  - c. Interactions of anesthetics with neurodegenerative diseases.
  - d. Pharmacogenomics
  - e. Outcome studies

# Research, cont.

2. Challenge to develop Anesthesiology investigators of tomorrow
  - a. Continue to attract potential investigators into the specialty
  - b. Maintain their interest and commitment
  - c. Offer supportive and stimulating research environments

# Recent Training Changes

1. Definitive bedside care in Clinical Base year.
2. More CCM, pre-operative, PACU, Pain rotation requirements
3. More flexibility of RRC and ABA to incorporate research months, other advanced degree training, eg: Masters of Clinical Investigation, MBA, MPH, MHA

# What I tell residents: Stay nimble, Stay ready

- Keep your skills up for advanced & subspecialty cases; become the “go-to” physicians for acute care issues in your hospital.
- Take advantage of opportunities to lead new initiatives/new endeavors in your hospital.
- Help your hospital and medical group develop new models of cost-efficient care.

# Summary & References

[http://www.csahq.org/pdf/bulletin/  
future\\_57\\_3.pdf](http://www.csahq.org/pdf/bulletin/future_57_3.pdf)