



The Anesthesiology Care Team: Who, How, Why?

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Abstract

Anesthesiology is the practice of medicine. The practice of anesthesiology has evolved, since the earliest anesthetics in the mid-1800's given by novices with virtually no training, to an advanced and distinct specialty with broad contributions to perioperative medicine. The majority of anesthesia care in the United States is provided by a physician-led care team that can include anesthesiology residents and fellows, Certified Registered Nurse Anesthetists (CRNAs), or Certified Anesthesiologist Assistants (CAAs). Regulations regarding care team models vary state-by-state. With the increasing complexity of surgical procedures and growing patient frailty, anesthesia remains a high-risk endeavor. The role of anesthesiologists in perioperative medicine extends well beyond the provision of safe anesthesia in the procedure suite to critical contributions in research, training, surgical care team coordination, policy development, patient advocacy, resuscitation, and long-term outcomes optimization.

Keywords

Anesthesia supervision, Certified registered nurse anesthetist, Failure to rescue, Anesthesiologist assistant, Anesthesia care team

According to the World Federation of Societies of Anaesthesiologists (WFSA): “anesthesia is inherently complex and potentially very hazardous, and its safe provision requires a high level of expertise in medical diagnosis, pharmacology, physiology, and anatomy, as well as considerable practical skill. The WFSA views anesthesiology as a medical practice [1].”

This factual, reasonable, and relatively straightforward statement is unfortunately associated with tremendous policy complexity and regulatory controversy. More than a century ago when the anesthetic properties of ether, chloroform, and nitrous oxide were just becoming known Eugene Metzenbaum, an anesthetist employed at the Mount Sinai Hospital in Ohio, noted that: “the professional anesthetist has thus far not been able to establish in the minds of the laity or the profession generally the true value of his services. This is due to the fact that the importance of the anesthetic is not known to the patient and its direct bearing upon the success of the operation not fully appreciated by the many who perform occasional surgery [2].” As we look to shape the future it is important to remember all of the effort invested over many decades to establish the

specialty of anesthesiology.

Perspectives are different between academics and government policy makers when it comes to thinking about anesthesiology. In academic centers anesthesiologists will emphasize education, training, research, and professional development. Government policy makers will emphasize access and cost. The need for a larger supply of clinicians will weigh heavily on their decisions. The common area for agreement is the need for quality, safety and high patient satisfaction. Shortages of anesthesiologists and growing surgical demand will be very important to government planners and patients alike. Neither the academic future of the profession nor the quality of the patient experience should be sacrificed for access. It is crucial for anesthesiologists to message the breadth of our roles, the depth of our training, the diversity of our experience, and the value of our skills to patients, surgeons, hospital leaders, and the government.

Certified Registered Nurse Anesthetists have been providing anesthesia care in the US since the Civil War (1860s). However, the majority of anesthesia care has been provided safely and effectively in a care team model. The anesthesia care team is led by physicians with specialty training in anesthesiology who supervise or medically direct CRNAs, Certified Anesthesiologist Assistants, or anesthesiology residents and fellows. depending on the circumstances, one anesthesiologist can supervise up to four anesthetics. In 2019 the United States has approximately the same number of CRNAs as anesthesiologists (~ 50,000) who practice in all 50 states and Washington, D.C [3]. In contrast, approximately 2500 AAs in the US practice in a much smaller number of states (17 + Washington, DC.) and have fewer training programs (12 vs. 121 CRNA programs). CAA's were developed in the 1950's with the help of the American Society of Anesthesiologists to meet the needs of the public for anesthesia in the setting of a shortage of anesthesiologists. In the USA the scope of practice of anesthesia clinicians is determined uniquely by individual state governments. In 2019, 17 states allow CRNAs to practice independently of the care team without supervision. Anesthesiologist assistants must be supervised

by an anesthesiologist in all states. This generates variability in practice across the country.

Both CRNAs and CAA's earn a minimum of Bachelors and Masters Degrees, pass a written national certification test, and completed requirements for annual continuing education and ongoing testing. Recently CRNA doctoral programs have been developed and are mandated for students entering the workforce as new graduates in 2025.

The anesthesia care team model has facilitated an expansion in the number of anesthesia clinicians (CRNAs/CAAs) to match rapidly growing surgical numbers while maintaining the safety of having the broad experience and knowledge of a physician leading the team in most settings [4]. The optimal implementation of the anesthesia care team model may differ from urban to rural areas or from high-acuity to lower acuity settings. Patient safety and high quality must be maintained regardless of the setting. Anesthesia is perceived as "safe" until suddenly there is an emergency, which sometimes occurs postoperatively. Unexpected situations arise even in low acuity settings. The ability to rescue patients from complications is of critical importance. Board certified anesthesiologists are likely best equipped to rescue in these complicated scenarios [5].

The practice of anesthesiology needs to be understood on the context that providing anesthesia care inside the procedure suite is only one component of the specialty. The care team model allows anesthesiologists to be outside of the operating room to participate in administrative, research, training, quality, and safety related activities. Anesthesiologists in many centers also lead intensive care units, acute and chronic pain teams, and opioid stewardship projects. As healthcare faces dramatic change, new technologies and care pathways substantially impact care. Anesthesiologists add substantial value to decisions on how to apply new technology and facilitate development of novel approaches to care. With increased complexity of care settings and the growing frailty of patients, the availability of experienced physicians to lead the growth of the specialty and coordinate preoperative optimization and interdisciplinary care teams in perioperative settings is critical [6]. Opportunities and needs in perioperative medicine, clinical effectiveness research, translational research are substantial. The value of the anesthesiologist will increasingly be measured from contributions outside the immediate operative period including longer term outcomes and resource utilization. Now is the time to invest in our future and stand with our patients and our surgical colleagues to ensure the highest value in the perioperative period.

Conflicts

The author declares no conflicts of interest.

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