

Pediatric Perioperative Environment: Should Hospitals and Anesthesia Practitioners Have Performance-Based Credentialing. The California Experience: Wave of the Future?

AAP/ASA History/State of the Issue

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Introduction

Anatomic and physiologic differences make the administration of anesthesia different and more difficult to infants and children than to adults. Studies comparing the perioperative anesthesia-related morbidity and mortality of pediatric and adult patients have demonstrated that both are increased for pediatric patients.¹⁻⁷ This information suggests that the practice of pediatric anesthesia is different from the practice of adult anesthesia and that those providing anesthesia care for infants and children require knowledge, training and repetitive experience that are different as well.

My personal experience in this field evolved as a result of several different events. As an expert witness in malpractice work pertaining to infants and children, I noted that most of my work concerns adverse events with major outcome problems that occur as a result of simple errors in clinical practice in community hospitals where pediatric anesthesia is practiced on an occasional basis. This led to a study of the demography of pediatric anesthesia in Northern California based on the question of the issue of performance-based credentialing for pediatric anesthesia.⁸ Within a given region, how many hospitals in which pediatric anesthesia was practiced had enough inpatients receiving anesthesia on an annual basis in a given age category to provide an adequate number of cases for the basis of performance-based credentialing of even one anesthesiologist? The results indicated that a majority of hospitals did not have an adequate number of cases to meet the minimum stated requirement.⁸

The next event was a panel discussion at an SPA meeting in 1990 on how to determine who should provide anesthesia to infants and children in different age groups and with various disease entities. The discussion included the issues of the definitions of pediatric anesthesia and the pediatric anesthesiologist. There was no consensus on these definitions. The qualifications of an anesthesiologist to practice pediatric anesthesia were based on “quicksand”. There was no clear understanding of the boundaries of pediatric anesthesia, the qualifications required of pediatric anesthesiologists, and the parameters by which hospitals could determine whether or not an appropriate setting (environment) existed in which the practice of pediatric anesthesia could be accomplished safely. Centers of excellence existed but the anesthesiology community as a whole did not have the information needed to differentiate the “Where and By Whom” pediatric anesthesia should be practiced. Jack Downes, Mark Rockoff and I were in the audience and discussed this matter. A decision was made to address these issues. Following the meeting, “fuel was added to the fire” when I was asked to provide an answer in an SPA newsletter pertaining to a concern expressed by an anesthesiologist who was asked to provide anesthesia care to a small child in a community hospital where pediatric anesthesia had not been provided for more than five years. He did not want to do the case but was being coerced to do it. He asked what guidelines the SPA, or another organization representing anesthesiologists providing care to infants children, could provide concerning this matter.

A three-pronged attack on the problem was launched. The issues to be covered were the clinical competency objectives for training in pediatric anesthesiology that would differentiate pediatric anesthesiologists who practice in pediatric centers from community anesthesiologists who practice pediatric anesthesia in community hospitals, the requirements of the pediatric perioperative anesthesia environment, and formalization of the requirements for pediatric anesthesiology fellowship programs.

The resulting actions were the result of hard work by a large number of pediatric anesthesiologists who contributed their time and effort for the benefit of the field without direct recognition. Without their combined efforts, the work could not have been accomplished. The results demonstrate the political accomplishments pertaining to patient care that can be obtained in a proactive manner.

Clinical Competency Objectives for Training in Pediatric Anesthesiology

This action item was addressed by the Study Group on Pediatric Anesthesiology, an ad-hoc organization of pediatric anesthesiologists created in 1990. Its mission was(is) to discuss issues concerning pediatric anesthesiology that are not the focus of any of the formal organizations representing the field and present potential solutions to them for action. It was composed of the directors of the pediatric anesthesia components of ACGME (Accreditation Council for Graduate Medical Education) accredited anesthesiology programs, the directors of the departments of anesthesia of childrens hospitals, the officers of the three organizations/committees that represent pediatric anesthesia at the national level (SPA, AAP Section on Anesthesiology, ASA Committee on Pediatric Anesthesia), and representatives of the anesthesiology community who practice pediatric anesthesia in non-pediatric hospitals. There were 60 members. The American Board of Anesthesiology was aware of the activities of this Group and did not intervene in its work. The first meeting was held in 1991.

The Study Group distributed the following statement in 1995.⁹

Clinical Competency Objectives for Training in Pediatric Anesthesiology

1. The general anesthesiologist by the end of the CA-3 year shall be competent to provide:
 - a. safe anesthesia and post-anesthesia care for infants and children undergoing routine surgical, diagnostic and therapeutic procedures, and to recognize when the clinical condition of the patient or the proposed procedure requires skills, facilities or support beyond the capability of the anesthesiologist or institution; and
 - b. resuscitation for neonates, infants and children.
2. The subspecialist in pediatric anesthesiology after at least one year of subspecialty training shall be proficient in providing:
 - a. anesthesia care for neonates, infants and children undergoing all types of surgical, diagnostic and therapeutic procedures, and
 - b. resuscitation, pain management and routine and critical Perioperative care for neonates, infants and children.

Guidelines for the Pediatric Perioperative Anesthesia Environment.

-- Section on Anesthesiology of the American Academy of Pediatrics

The concept for the Guidelines originated in a discussion at a meeting of BAYPAC, a group of pediatric anesthesiologists in the San Francisco Bay Area. Our concern was the onus on adverse events occurring during the administration of anesthesia to infants and children was always placed on the anesthesiologist rather than being shared by the patient care facility that provided the environment in which the anesthesia care was provided. The Committee on Quality Assurance of the AAP Section on Anesthesiology and Pain Medicine took on this action item. The Committee was composed of 16 members of the Section. The Guidelines for the Pediatric Perioperative Anesthesia Environment, published by the American Academy of Pediatrics in 1999, addresses the facility and anesthesiologist components required for the safe practice of pediatric anesthesia in patient care facilities. Prior to its publication, it was reviewed by the Study Group, the Society for Pediatric Anesthesia Board, and the American Society of Anesthesiologists' Committee on Pediatric Anesthesia. Although there is a broad list of requirements noted in the document, the most important sections are as follows.¹⁰

A. Patient Care Facility and Medical Staff Policies.

Designation of operative procedures/Categorization of Pediatric Patients Undergoing Anesthesia/The annual minimum case volume to maintain clinical competence.

There should be a written policy designating and categorizing the types of pediatric operative, diagnostic and therapeutic procedures requiring anesthesia on an elective and emergent basis, and indicating the minimum number of cases required in each category for the facility to maintain its clinical competence in their performance. This policy should be based on the capability of the patient care facility and its medical staff to care for pediatric patients requiring anesthesia. The categories should identify patients at increased anesthesia risk. They will be used to determine facility capability and whether or not anesthesiologists providing or directly supervising the anesthesia care for patients in a specific category will require special clinical privileges. The categories should include patient age, procedures for which postoperative intensive care is anticipated, and patients with special anesthesia risks based on coexisting medical conditions.

Information available on anesthesia adverse outcomes suggests neonates are at higher risk than older infants, and, in turn, older infants are at greater risk than pediatric patients more than two years of age. The following age categories are recommended: 0 to 1 month, 1 - 6 months, 6 months to 2 years, and older than 2 years. Because of the anatomic, physiologic, and psychological differences between children and adults, further differentiation of pediatric age groups for patients older than two years is recommended.

Anesthesia care for pediatric patients should be provided or supervised by anesthesiologists with clinical privileges as noted below. The annual minimum case volume required to maintain clinical competence in each patient care category should be determined by the facility's Department of Anesthesia.

B. Clinical Privileges of Anesthesiologists

I. Regular clinical privileges.

Anesthesiologists providing clinical care to pediatric patients should be graduates of an anesthesiology residency-training program accredited by the ACGME or its equivalent.

II. Special clinical privileges:

In addition to the above requirement, anesthesiologists providing or directly supervising the anesthesia care of patients in the categories designated by the facility's Department of Anesthesia as being at increased anesthesia risk should be graduates of an ACGME accredited pediatric anesthesiology fellowship training program or its equivalent, or have documented demonstrated historical and continuous competence in the care of such patients.

-- Committee on Pediatric Anesthesia of the American Society of Anesthesiologists

The work of the AAP Section on the Guidelines was followed in 2002 by action in the ASA Committee on Pediatric Anesthesia that resulted in the formation of the Committee's Task Force on Pediatric Anesthesia of the Committee and the publication of a pamphlet entitled, Pediatric Anesthesia: Practice Recommendations.¹¹ The content of the AAP document was modified but the message is the same. The facility must have the appropriate personnel, equipment, space allocation, etc., for the provision of pediatric anesthesia. A competent team of health care providers, including an anesthesiologist with the appropriate training and experience, is required to provide safe anesthesia care for infants and children. The department of anesthesia and the medical staff of a patient care facility are responsible for the anesthesia care of its infants and children.

Fellowship Training Programs in Pediatric Anesthesiology.

The third issue to be addressed was the formalization of the requirements of fellowship training programs in pediatric anesthesiology. As pediatric anesthesia advanced, the training, skills and experience required to provide the best care for infants and children, particularly those at an early age, with complex medical illnesses, or requiring pre- or postoperative intensive care increased. An environment had been spawned, the Pediatric Perioperative Anesthesia Environment, in which an individual with additional training and experience in pediatric anesthesiology had skills with professional value. Graduates of anesthesiology residencies who took three to six months of elective time on a pediatric anesthesia service were hired into anesthesiology practice groups as “pediatric anesthesiologists. Ad-hoc pediatric anesthesia fellowship training programs were developed, but there was considerable confusion as to what the fellowship requirements should be. The Study Group joined by the SPA surveyed pediatric anesthesiology fellowship training programs with regard to the composition of their training programs. The concern of both groups was the absence of an agreed-upon definition of the training and experience required of a pediatric anesthesiologist. The findings of this investigation indicated that there was no commonality concerning the length of the training program, the curriculum, the numbers and types of cases performed by a fellow, or the number or caliber of the faculty of the programs. Formalization of the requirements for the fellowship training programs was needed. Based on the definition of a pediatric anesthesiologist noted above, and the requirements for special privileges noted in the AAP Guidelines document, minimum requirements for a one-year clinical fellowship training program were developed. The SPA, the Section on Anesthesiology and Pain Medicine of the AAP, and the Study Group (with the support of the Committee on Pediatric Anesthesia of the ASA) jointly requested formal accreditation of fellowship training programs in pediatric anesthesiology. This application was endorsed by the AAP, passed through the American Board of Anesthesiology and the ASA without dissent, and was accepted by the ACGME in 1997.¹² Accredited fellowship training programs must provide a minimum of one year of clinical training. An established curriculum is required. The range of clinical cases must be broad, inclusive of all types of cases anticipated in practice, and have a case volume acceptable to the ACGME. Its faculty must be composed of pediatric anesthesiologists. As of this date, there are 43 programs fellowship training programs listed on the ACGME website.¹³

The Future and Performance-Based Credentialing.

The movement to improve the quality of care provided to infants and children requiring anesthesia care will continue to develop.¹⁴ That is the mission of the national organizations representing anesthesiologists who provide anesthesia care to infants and children. Fellowship programs in pediatric anesthesiology will expand. Their curricula, and that of the pediatric portion of the anesthesiology residency training programs, will be refined to differentiate between patients requiring the services of a graduate of an anesthesiology residency and pediatric anesthesiology training program. Demographic data will be developed to assist in this process as will continuous quality improvement activities such as that performed by the Pediatric Perioperative Cardiac Arrest Registry (POCA)¹⁵ and individual hospital CQI projects.¹⁶ The movement will lead to similar developments in pediatric surgery and nursing as well other elements of the pediatric perioperative environment. Simulation activities will play an important role in this process.

All of these activities suggest performance-based credentialing will be a requirement for anesthesiologists working in a pediatric perioperative anesthesia environment. Do all pediatric cases have to be cared for by pediatric anesthesiologists and in pediatric centers? Certainly not, but the differentiation of case distribution has to be studied carefully and acted on with care. An important arena will be utilization of the tools developed as noted above. Their implementation at the State level by professional societies, health care organizations, and patient care advocates is the next step.

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