

Pediatric Anesthesia

Practice Recommendations

Task Force on
Pediatric Anesthesia of
the ASA Committee on
Pediatric Anesthesia



INTRODUCTION

Optimal perioperative care of infants and children requires proximate availability of qualified medical personnel and contemporary equipment designed specifically for this purpose. Local and regional circumstances may differ with respect to the immediate availability of specialized personnel and access to facilities. With due consideration of the practical necessities of safe, convenient and facilitative medical care, the Task Force on Pediatric Anesthesia offers the following recommendations by which the medical staff of each patient-care facility may determine explicit credentialing criteria within the bounds of applicable state regulations. They are intended to address the provision of elective anesthesia services for infants and children in all patient-care facilities. Anesthesia care required under emergency circumstances may preclude their explicit application and use.

These recommendations are proposed in response to requests by anesthesiologists for assistance in establishing institutional standards and criteria that will enhance their ability to provide anesthesia care to infants and children. They are suggested based on the experience of the members of the task force and an earlier document addressing this subject (Hackel A, Badgwell JM, Binding RR, et al. Guidelines for the pediatric perioperative anesthesia environment. American Academy of Pediatrics. Section on Anesthesiology. *Pediatrics*. 1999; 103(2):512-515.)

PATIENT CARE FACILITY AND MEDICAL STAFF POLICIES

Categorization of Operative Procedures and Pediatric Surgical Patients

In consideration of the special clinical needs of pediatric surgical patients, patient-care facilities are advised to authorize written policies for the purpose of designating and categorizing the types of pediatric operative, diagnostic and therapeutic procedures requiring anesthesia on elective and emergent bases. These categories are intended to identify pediatric patients at increased anesthesia risk. In consultation with its clinical administration, the medical staff of each patient-care facility is advised to stipulate the minimum level of ongoing clinical experience required in each category in order for the facility to maintain clinical competence in its performance. Categories may be evaluated to determine whether anesthesiologists providing or directly supervising

anesthetic care for patients in a specific category may require special clinical privileges. Examples of relevant criteria include patient age, patients with special anesthesia risks based on coexisting medical conditions and high-risk surgical procedures.

Annual Minimum Case Volume for Anesthesiologists to Maintain Clinical Competence

The medical staff of individual patient-care facilities should determine criteria for anesthetic care for pediatric patients. Anesthesia for pediatric patients may be provided and/or directly and immediately supervised by an anesthesiologist with clinical privileges as noted below. Unless superseded by state regulation, the annual minimum case volume required to maintain clinical competence in each patient care category should be determined by the facility's department of anesthesiology, subject to approval by the facility's medical staff and governing board.

CLINICAL PRIVILEGES FOR ANESTHESIOLOGISTS

Regular Clinical Privileges

Anesthesiologists providing and/or directly supervising clinical care for pediatric patients should be graduates of anesthesiology residency training programs accredited by the Accreditation Council for Graduate Medical Education (ACGME) or its equivalent, should be board-certified or board-eligible and should have documented continuous competence in the care of patients in specified categories in order to maintain those clinical privileges.

Special Clinical Privileges

In addition to the requirements noted above, it is suggested that anesthesiologists providing and/or directly supervising the anesthetic care of patients in the categories designated by the facility's department of anesthesiology as being at increased risk for anesthetic complications (thus requiring special clinical privileges) should be graduates of pediatric anesthesiology fellowship training programs accredited by ACGME or its equivalent or should be fully credentialed members of the department of anesthesiology who have demonstrated continuous competence in the care of such patients as determined by the department of anesthesiology.

New or Renewed Privileges

Clinical privileges may be applied for or renewed in the manner determined by the facility's bylaws in compliance with applicable state regulations. In this framework, granting special clinical privileges should be in a manner determined by the facility's department of anesthesiology and approved by the facility's applicable credentialing committee and should include a period of preceptorship for new applicants or clinical review for renewal applicants.

Pain Management

Each facility should establish policies for effective pediatric pain treatment in the perioperative environment, which should be based on the prevailing standard of care and reviewed on a regular basis by the department of anesthesiology or other multidisciplinary body designated by the medical staff.

PATIENT CARE UNITS

Preoperative Evaluation and Preparation Units

In order to offer privacy and a comforting environment, a preoperative unit or a specialized area within a general preoperative unit should be provided in order to accommodate pediatric patients and their families. This specialized area should have age- and size-appropriate equipment required for the preoperative evaluation and preparation of infants and children.

Operating Room

- **Anesthesiologists**

In order to apply specific expertise in the provision of pediatric anesthesia services, an anesthesiologist with pediatric anesthesia experience and regular or special clinical privileges (i.e., as noted above) may be assigned formal responsibility for the organization of the pediatric anesthesia services.

- **Pediatric Anesthesia Equipment and Drugs**

In order to provide proximate availability of specialized pediatric equipment, a complete selection of such equipment may be made available for clinical application to the pediatric patient. This equipment should be easily accessible and regularly maintained under the direct supervision of the department of anesthesiology. In order to prepare for unforeseen emergencies, a resuscitation cart

with equipment appropriate for pediatric patients of all ages, including pediatric defibrillator paddles, should be immediately available in all facilities providing pediatric care. Vasoactive resuscitative drugs and dantrolene sodium should be immediately available in appropriate pediatric concentrations. A written pediatric dose schedule for these drugs also should be immediately available.

Other requisite items for routine pediatric anesthetics include:

- Airway equipment for all ages of pediatric patients, including ventilation masks, laryngeal mask airways, endotracheal tubes, oral and nasopharyngeal airways, and laryngoscopes with pediatric blades
- Positive-pressure ventilation systems appropriate for infants and children
- Devices for the maintenance of normothermia (e.g., warming lamps, circulating warm-air devices, room thermal regulation capability, airway humidifiers and fluid-warming devices)
- Intravenous fluid administration equipment, including pediatric volumetric fluid administration devices, intravascular catheters in all pediatric sizes and devices for intraosseous fluid administration
- Noninvasive monitoring equipment for the measurement of blood pressure, pulse oximetry, capnography, anesthetic gas concentrations, inhaled oxygen concentration, electrocardiography and temperature as per ASA standards
- Specialized equipment for management of the difficult pediatric airway by a variety of techniques for airway control, intubation and ventilation, including but not limited to fiberoptic bronchoscopy and emergency cricothyrotomy

Additional items necessary for the care of high-risk pediatric patients include:

- Equipment for invasive measurement of arterial and central venous pressures
- Portable equipment for oxygenation, ventilation, monitoring and transport to the postanesthesia care unit (PACU) or intensive care unit (ICU)

Postanesthesia Care Unit

- **Anesthesiologist/Physician Staff**

In order to apply specific expertise in the provision of pediatric anesthesia services, an anesthesiologist or other physician trained and experienced in pediatric periopera-

tive care, including the management of postoperative complications and the provision of pediatric cardiopulmonary resuscitation, may be made immediately available to evaluate and treat any child in distress. Pediatric advanced life support or advanced pediatric life support certification is recommended.

- **Pediatric Anesthesia Equipment and Drugs**

In order to provide proximate availability of specialized pediatric equipment, the pediatric anesthesia equipment and drugs specified under the subtitle “Operating Room” (above) should be available for patients in the PACU.

Every child admitted to the PACU should have his or her vital signs monitored. Suction equipment and oxygen should be available at each bedside. A respiratory oxygen delivery system should be available for use in the transport of infants and children from the operating room to the PACU and/or ICU, when medically indicated.

Intensive Care Unit

In order to apply specialized expertise in the postoperative recovery of nonroutine pediatric patients, facilities in which operative procedures are performed that require postoperative intensive care should have an ICU (neonatal/pediatric) appropriate for the age of the patient. The ICU should be designed, equipped and staffed to meet state and federal standards for the care of critically ill neonates, infants and children. An exception to this recommendation may be applied in the case of an operative procedure required under acute circumstances involving a life-threatening emergency.

Patient-care facilities (including ambulatory surgical centers) that perform operative procedures for which postoperative intensive care is not anticipated may develop a proactive, clearly delineated plan (i.e., a “transfer agreement”) to transfer children to an appropriate hospital facility when complications requiring inpatient monitoring/care occur. In some states, specific requirements regarding applicability and content of transfer agreements may be stipulated by regulation and/or law.

Clinical Laboratory and Radiology Services/Availability and Capabilities

Clinical laboratory and radiology services should be contemporaneously available when pediatric patients are receiving care at the facility. The clinical laboratory should have the capability to provide hematologic and chemical analyses on small samples.

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This document has been developed by the ASA Task Force on Pediatric Anesthesia, but has not been reviewed or approved as a practice parameter or policy statement by the ASA House of Delegates. Variances from the recommendations contained in this document may be acceptable based on the judgment of the responsible anesthesiologist. The recommendations are designed to encourage quality patient care and safety in the workplace but cannot guarantee a specific outcome. They are subject to revision from time to time as warranted by the evolution of technology and practice.

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