



ACGME International

**Advanced Specialty Program Requirements for
Graduate Medical Education in
Pediatric Anesthesiology
(Anesthesiology)**

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Graduate Medical Education
in Pediatric Anesthesiology (Anesthesiology)**

Int. Introduction

Background and Intent: Programs must achieve and maintain Foundational Accreditation according to the ACGME-I Foundational Requirements prior to receiving Advanced Specialty Accreditation. The Advanced Specialty Requirements noted below complement the ACGME-I Foundational Requirements. For each section, the Advanced Specialty Requirements should be considered together with the Foundational Requirements.

Int. I. Definition and Scope of the Specialty

Pediatric anesthesiology is the subspecialty of anesthesiology devoted to caring for pediatric patients in operating rooms, non-operating room anesthetizing locations, the post-operative anesthesia care unit, and intensive care units.

Int. II. Duration of Education

Int. II.A. The educational program in pediatric anesthesiology must be 12 or 24 months in length.

I. Institution

I.A. Sponsoring Institution

I.A.1. A fellowship in pediatric anesthesiology must function as an integral part of an ACGME-I-accredited residency in anesthesiology.

I.A.2. The primary clinical site must be either a general hospital or a children's hospital.

I.B. Participating Sites

See International Foundational Requirements, Section I.B.

II. Program Personnel and Resources

II.A. Program Director

II.A.1. Qualifications of the program director must include:

II.A.1.a) completion of a pediatric anesthesiology fellowship, or at least three years' participation in a clinical pediatric anesthesiology fellowship as a faculty member;

II.A.1.b) post-residency experience in clinical pediatric anesthesiology;

II.A.1.c) current appointment as a member of the anesthesiology faculty at the primary clinical site; and,

II.A.1.d) demonstrated ongoing academic achievements appropriate to pediatric anesthesiology, including publications, the development of educational programs, or conduct of research.

II.B. Faculty

II.B.1. There must be at least three core program faculty members, including the program director.

II.B.2. Physician faculty members must have fellowship education or post-residency experience in clinical pediatric anesthesiology.

II.B.3. Consultants must be available to provide prompt access to fellows, including:

II.B.3.a) child neurologist(s);

II.B.3.b) neonatologist(s);

II.B.3.c) pediatric cardiologist(s);

II.B.3.d) pediatric critical care specialist(s);

II.B.3.e) pediatric emergency medicine specialist(s);

II.B.3.f) pediatric neurologist(s);

II.B.3.g) pediatric pulmonologist(s);

II.B.3.h) pediatric radiologist(s); and,

II.B.3.i) pediatric surgeon(s).

II.B.4. Pediatric surgical specialists in the following disciplines should be available for the education of the fellows:

II.B.4.a) neurological surgery;

II.B.4.b) orthopaedic surgery;

II.B.4.c) otolaryngology; and,

II.B.4.d) plastic surgery.

II.C. Other Program Personnel

II.C.1. Allied health staff members and other support personnel with appropriate subspecialty expertise must be available to support the program.

II.D. Resources

- II.D.1. The program must have the following resources and facilities:
- II.D.1.a) neonatal and pediatric intensive care units;
 - II.D.1.b) an emergency department in which children of all ages can be effectively managed 24 hours a day;
 - II.D.1.c) operating rooms designed and equipped for the management of pediatric patients; and,
 - II.D.1.d) monitoring and advanced life support equipment representative of current levels of technology.
- II.D.2. Clinical services that provide prompt laboratory results pertinent to the care of pediatric patients must be available, including for:
- II.D.2.a) blood chemistries;
 - II.D.2.b) blood gases and pH;
 - II.D.2.c) clotting function;
 - II.D.2.d) hematocrit/hemoglobin; and,
 - II.D.2.e) oxygen saturation.

III. Fellow Appointment

III.A. Eligibility Criteria

- III.A.1. Prior to appointment in the program, fellows should have completed an ACGME-I-accredited residency program in anesthesiology, or an anesthesiology residency program acceptable to the Sponsoring Institution's Graduate Medical Education Committee.

III.B. Number of Fellows

See International Foundational Requirements, Section III.B.

IV. Specialty-Specific Educational Program

IV.A. ACGME-I Competencies

- IV.A.1. The program must integrate the following ACGME-I Competencies into the curriculum.
- IV.A.1.a) Professionalism

- IV.A.1.a).(1) Fellows must demonstrate a commitment to professionalism and an adherence to ethical principles.
- IV.A.1.b) Patient Care and Procedural Skills
- IV.A.1.b).(1) Fellows must provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
- IV.A.1.b).(1).(a) Fellows must demonstrate the ability to provide clinical consultation for both medical and surgical pediatric patients under the direction of faculty members, including assessment of the appropriateness of a patient's preparation for surgery.
- IV.A.1.b).(1).(b) Fellows must demonstrate competence in patient management and peri-operative care of neonates, infants, children, and adolescents, including:
- IV.A.1.b).(1).(b).(i) pre-operative assessment;
 - IV.A.1.b).(1).(b).(ii) pharmacologic support of the circulation;
 - IV.A.1.b).(1).(b).(iii) management of both normal peri-operative fluid therapy and massive fluid and/or blood loss;
 - IV.A.1.b).(1).(b).(iv) interpretation of laboratory results;
 - IV.A.1.b).(1).(b).(v) post-anesthetic assessment and management of routine and medically challenging pediatric patients;
 - IV.A.1.b).(1).(b).(vi) recognition, prevention, and treatment of pain in medical and surgical pediatric patients;
 - IV.A.1.b).(1).(b).(vii) recognition and treatment of peri-operative vital organ dysfunction, including in the post-anesthesia care unit;
 - IV.A.1.b).(1).(b).(viii) diagnosis and peri-operative management of congenital and acquired disorders; and,

- IV.A.1.b).(1).(b).(ix) participation in the care of critically ill pediatric patients in a neonatal and/or pediatric intensive care unit.
- IV.A.1.b).(2) Fellows must manage pediatric patients requiring general anesthesia for elective and emergent surgery for a wide variety of surgical conditions, including neonatal surgical emergencies, cardiopulmonary bypass, and congenital disorders, to include:
- IV.A.1.b).(2).(a) techniques for administering regional anesthesia for inpatient and ambulatory surgery;
- IV.A.1.b).(2).(b) sedation or anesthesia outside the operating rooms, including for those patients undergoing procedures;
- IV.A.1.b).(2).(c) cardiopulmonary resuscitation (CPR) and advanced life support;
- IV.A.1.b).(2).(d) management of normal and abnormal airways;
- IV.A.1.b).(2).(e) mechanical ventilation;
- IV.A.1.b).(2).(f) temperature regulation; and,
- IV.A.1.b).(2).(g) placement of venous and arterial catheters.
- IV.A.1.b).(3) Fellows must maintain certification as providers of pediatric advanced life support.
- IV.A.1.c) Medical Knowledge
- IV.A.1.c).(1) Fellows must demonstrate knowledge of established and evolving biomedical clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Fellows must demonstrate knowledge of:
- IV.A.1.c).(1).(a) airway problems common in children;
- IV.A.1.c).(1).(b) cardiovascular, respiratory, renal, hepatic, and central nervous system physiology, pathophysiology, and therapy;
- IV.A.1.c).(1).(c) coagulation abnormalities and therapy;
- IV.A.1.c).(1).(d) congenital anomalies and developmental delay;
- IV.A.1.c).(1).(e) CPR;

- IV.A.1.c).(1).(f) effects of anesthetics on the developing brain;
- IV.A.1.c).(1).(g) ethical and legal aspects of care;
- IV.A.1.c).(1).(h) infectious disease pathophysiology and therapy;
- IV.A.1.c).(1).(i) medical and surgical problems common in children;
- IV.A.1.c).(1).(j) metabolic and endocrine effects of surgery and critical illness;
- IV.A.1.c).(1).(k) neonatal physiology and pharmacology;
- IV.A.1.c).(1).(l) normal and abnormal physical and psychological development;
- IV.A.1.c).(1).(m) organ transplantation in children;
- IV.A.1.c).(1).(n) pain management in pediatric patients of all ages;
- IV.A.1.c).(1).(o) pharmacokinetics and pharmacodynamics, and mechanisms of drug delivery;
- IV.A.1.c).(1).(p) post-anesthetic care and critical care management;
- IV.A.1.c).(1).(q) transport of critically ill patients;
- IV.A.1.c).(1).(r) trauma, including burn management; and,
- IV.A.1.c).(1).(s) use and toxicity of local and general anesthetic agents.

IV.A.1.d) Practice-based Learning and Improvement

- IV.A.1.d).(1) Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.

IV.A.1.e) Interpersonal and Communication Skills

- IV.A.1.e).(1) Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

IV.A.1.f) Systems-based Practice

IV.A.1.f).(1) Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, including the social determinates of health, as well as the ability to call effectively on other resources in the system to produce optimal care.

IV.B. Regularly Scheduled Educational Activities

- IV.B.1. The curriculum must include a didactic program based on the core knowledge content in the subspecialty area.
- IV.B.2. Conferences should include peer-review case conferences and/or morbidity and mortality conferences, multidisciplinary conferences, and departmental grand rounds.
 - IV.B.2.a) Multidisciplinary conferences and case presentations should involve faculty members from other specialties.
- IV.B.3. Faculty members and fellows should be actively involved in planning and conducting conferences.

IV.C. Clinical Experiences

- IV.C.1. For programs that are 12 months in length, a minimum of nine months must be devoted to required clinical experiences.
 - IV.C.1.a) The remaining time may be spent engaging in research or on elective rotations.
 - IV.C.1.b) The total time in rotations outside the primary clinical site should not exceed four months.
- IV.C.2. For programs that are 24 months in length, a minimum of 18 months must be devoted to required clinical experiences.
 - IV.C.2.a) The remaining time may be spent engaging in research or on elective rotations.
 - IV.C.2.b) The total time in rotations outside the primary clinical site should not exceed eight months.
- IV.C.3. The program must have a specialty-specific written policy regarding substance abuse.
- IV.C.4. The curriculum must be designed for fellows to be able to demonstrate:
 - IV.C.4.a) development of self-assessment and reflection skills and habits;
 - IV.C.4.b) effective communication skills in acquisition of informed consent, description, and management of the patient care plan; and disclosure and management of complications/errors;

- IV.C.4.c) the ability to effectively teach resident physicians, medical students, and other health care professionals the principles of pediatric anesthesiology, including management of patients requiring sedation outside of operating rooms, pain management, and life support;
- IV.C.4.d) competence in providing psychological support to patients and their families; and,
- IV.C.4.e) a commitment to carrying out professional responsibilities and an adherence to ethical principles, including:
 - IV.C.4.e).(1) accountability to patients, society, and the profession;
 - IV.C.4.e).(2) compassion, integrity, and respect for others;
 - IV.C.4.e).(3) compliance with institutional, departmental, and program policies;
 - IV.C.4.e).(4) respect for patient privacy and autonomy;
 - IV.C.4.e).(5) responsiveness to patient needs; and,
 - IV.C.4.e).(6) sensitivity and responsiveness to a diverse patient population, including to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.
- IV.C.4.f) The curriculum must be designed for fellows to be able to:
 - IV.C.4.f).(1) work in interprofessional teams to enhance patient safety and improve patient care quality;
 - IV.C.4.f).(2) identify system errors and assist in the implementation of potential system solutions; and,
 - IV.C.4.f).(3) be involved in continuous quality improvement, utilization review, and risk management.

IV.D. Scholarly Activity

IV.D.1. Fellows' Scholarly Activity

- IV.D.1.a) The program must provide instruction in the fundamentals of research design and conduct, and the interpretation and presentation of data.
- IV.D.1.b) Each fellow must complete a scholarly project, the results of which must be disseminated through a variety of means, including publication or presentation at local, regional, national, or international meetings.

IV.D.2. Faculty Scholarly Activity

See International Foundational Requirements, Section IV.D.2

V. Evaluation

See International Foundational Requirements, Section V.

VI. The Learning and Working Environment

See International Foundational Requirements, Section VI.