



AMERICAN OSTEOPATHIC ASSOCIATION

**BASIC STANDARDS FOR FELLOWSHIP
TRAINING IN
PEDIATRIC ANESTHESIOLOGY**

**American Osteopathic Association and the
American Osteopathic College of Anesthesiologists**

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BASIC STANDARDS FOR FELLOWSHIP TRAINING IN PEDIATRIC ANESTHESIOLOGY

I. Introduction

A. Definition and Scope of the Specialty

Pediatric anesthesiology is the subspecialty of anesthesiology devoted to the preoperative, intra-operative, and postoperative anesthetic care of pediatric patients.

B. Duration and Scope of Education

Fellowship training in pediatric anesthesiology shall be 12 months in duration, beginning after satisfactory completion of the residency program in anesthesiology. Fellowship training in pediatric anesthesiology is in addition to the minimum requirements described in the Program Requirements for the core residency program in anesthesiology.

The clinical training in pediatric anesthesiology must be spent caring for pediatric patients in the operating rooms, other anesthetizing locations, and in intensive care units. The training will include experience in providing anesthesia both for inpatient and outpatient surgical procedures and for non-operative procedures outside the operating rooms, as well as pre-anesthesia preparation and post-anesthesia care, pain management, and advanced life support for neonates, infants, children, and adolescents.

C. Goals and Objectives

The fellowship program in pediatric anesthesiology must be structured to ensure optimal patient care while providing fellows the opportunity to develop skills in clinical care and judgment, teaching, administration, and research. The fellow(s) in pediatric anesthesiology should be proficient not only in providing anesthesia care for neonates, infants, children, and adolescents undergoing a wide variety of surgical, diagnostic, and therapeutic procedures, but also in pain management, critical peri-operative care, and advanced life support. To meet these goals, the program should provide exposure to the wide variety of clinical problems in pediatric patients, as outlined in V.B., that are necessary for the development of these clinical skills.

II. Institutional Organization

A. Function

A pediatric anesthesiology program must function in affiliation with an AOA approved core anesthesiology program.

B. Institutional Policy

There should be an institutional policy governing the educational resources committed to pediatric anesthesiology programs as stated in the AOA Basic Document on Postdoctoral Training.

III. Faculty Qualifications and Responsibilities

A. Program Director

1. Qualifications of the Program Director

The program director in pediatric anesthesiology must be an anesthesiologist who is certified by the American Osteopathic Board of Anesthesiology (AOBA) or who possesses qualifications judged to be acceptable by the AOCA. The program director also must be licensed to practice medicine in the state where the institution that sponsors the program is located (certain federal programs are exempted) and have an appointment in good standing to the medical staff of an institution participating in the program

The program director must have completed a pediatric anesthesiology training program or have equivalent educational and clinical qualifications in providing anesthesia care for pediatric patients. He/she must devote sufficient time to provide adequate leadership to the program and supervision for the fellows. The clinical director of the pediatric anesthesiology service may be someone other than the program director.

2. Responsibilities of the Program Director

- a. Preparation, periodic review, and, if necessary, revision of a written outline of the educational goals of the program with respect to the knowledge, skills, and other attributes of fellows at each level of training and for each major rotation or other program assignment. This statement must be distributed to fellows and members of the teaching staff. It should be readily available for review.
- b. Selection of fellows for appointment to the program in accordance with institutional and departmental policies and procedures.
- c. Selection and supervision of the teaching staff and other program personnel.
- d. Supervision of fellows through explicit written descriptions of supervisory lines of responsibility for the care of patients. Such guidelines must be communicated to all fellows and faculty. Fellows must be provided with prompt, reliable systems for communication and interaction with supervisory physicians.
- e. Implementation of fair procedures, as established by the sponsoring institution, regarding academic discipline and fellow complaints or grievances.
- f. Preparation of an accurate statistical and narrative description of the program, as requested by AOCA's Residency Evaluating Committee.

B. Faculty

Although the number of faculty members involved in teaching fellows in pediatric anesthesiology will vary, it is recommended that at least three faculty members be involved, including the program director. A ratio of no less than one faculty member to one fellow shall be maintained.

There must be evidence of active participation by qualified physicians with training and/or expertise in pediatric anesthesiology beyond the requirement for completion of a core anesthesiology residency. The faculty must possess expertise in the care of pediatric patients and must have a continuous and meaningful role in the fellowship training program.

The program must include teaching in multidisciplinary conferences by faculty in pediatric and neonatal intensive care, pediatric medicine, and pediatric surgery.

The pediatric anesthesiology program director and faculty responsible for teaching subspecialty fellows in pediatric anesthesiology must maintain an active role in scholarly pursuits pertaining to pediatric anesthesiology, as evidenced by participation in continuing medical education as well as by involvement in research as it pertains to the care of pediatric patients.

IV. Clinical and Educational Facilities and Resources

The following resources and facilities are necessary to the program:

1. Intensive care units for both newborns and older children.
2. An emergency department in which children of all ages can be effectively managed 24 hours a day.
3. Operating rooms adequately designed and equipped for the management of pediatric patients. A post-anesthesia care area adequately designed and equipped for the management of pediatric patients must be located near the operating room suite.
4. Pediatric surgical patients in sufficient volume and variety to provide a broad educational experience for the program. Surgeons with special pediatric training and/or experience in general surgery, cardiovascular surgery, neurosurgery, otolaryngology, ophthalmology, orthopedics, plastic surgery and urology must be available.
5. Monitoring and advanced life-support equipment representative of current levels of technology.
6. Allied health staff and other support personnel.
7. Facilities that are readily available at all times to provide prompt laboratory measurements pertinent to the care of pediatric patients. These include but are not limited to measurement of blood chemistries, blood gases and pH, oxygen saturation, hematocrit/hemoglobin, and clotting function. If adequate clinical experiences are not provided in the primary institution, arrangements should be made to assure that adequate clinical experiences are obtained. The total time in rotations outside the primary institution for the purpose of supplemental experience should not exceed three months and should be approved by the AOCA.

V. Educational Program

A. Goals and Objectives

The director and teaching staff must prepare and comply with written goals for the program. All educational components of the program should be related to the program goals. The program design must be approved by the AOCA as part of the regular review process. A written statement of the educational objectives must be given to each fellow.

B. Clinical Components

The subspecialty fellow in pediatric anesthesiology must gain expertise in the following areas of clinical care of neonates, infants, children, and adolescents:

1. Preoperative assessment of children scheduled for surgery
2. Cardiopulmonary resuscitation and advanced life support
3. Management of normal and abnormal airways
4. Mechanical ventilation
5. Temperature regulation
6. Placement of venous and arterial catheters
7. Pharmacologic support of the circulation
8. Management of both normal per-operative fluid therapy and massive fluid and/or blood loss
9. Interpretation of laboratory results
10. Management of children requiring general anesthesia for elective and emergent surgery for a wide variety of surgical conditions including neonatal surgical emergencies, cardiopulmonary bypass, and congenital disorders
11. Techniques for administering regional anesthesia for inpatient and ambulatory surgery in children
12. Sedation or anesthesia for children outside the operating rooms, including those undergoing radiologic studies
13. Recognition, prevention, and treatment of pain in medical and surgical patients
14. Consultation for medical and surgical patients
15. Recognition and treatment of peri-operative vital organ dysfunction, including in the pos-anesthesia care unit
16. Diagnosis and peri-operative management of congenital and acquired disorders
17. Participation in the care of critically ill infants and children in a neonatal and/or pediatric intensive care unit
18. Transport of critically ill patients between hospitals and/or within the hospital
19. Psychological support of patients and their families in preparation for roles as consultants to other specialists, subspecialty fellows in pediatric anesthesiology should have the opportunity to provide consultation under the direction of faculty responsible for teaching in the pediatric anesthesiology program. This should include assessment of the appropriateness of a patient's preparation for surgery and recognition of when an institution's personnel, equipment, and/or facilities are not appropriate for management of the patient.

A. Didactic Components

The didactic curriculum provided through lectures and reading, must include the following areas, with emphasis on developmental and maturational aspects as they pertain to anesthesia and life support for pediatric patients:

1. Cardiopulmonary resuscitation
2. Pharmacokinetics and pharmacodynamics and mechanisms of drug delivery
3. Cardiovascular, respiratory, renal, hepatic, and central nervous system physiology, pathophysiology, and therapy
4. Metabolic and endocrine effects of surgery and critical illness

5. Infectious disease pathophysiology and therapy
6. Coagulation abnormalities and therapy
7. Normal and abnormal physical and psychological development
8. Trauma, including burn, management
9. Congenital anomalies and developmental delay
10. Medical and surgical problems common in children
11. Use and toxicity of local and general anesthetic agents
12. Airway problems common in children
13. Pain management in pediatric patients of all ages
14. Ethical and legal aspects of care
15. Transport of critically ill patients
16. Organ transplantation in children
17. All pediatric anesthesiology fellows should be certified as providers of advanced life support for children.

Fellowship conferences, including morbidity and mortality conferences, journal reviews, and research seminars, should be regularly attended. Active participation of the subspecialty fellow in pediatric anesthesiology in the planning and production of these conferences is essential. However, the faculty must be the conference leaders in the majority of the sessions. Attendance by fellows at multidisciplinary conferences, especially those relevant to pediatric anesthesiology, is encouraged.

VI. Duty Hours and the Working Environment

Duty hours shall be in accordance with the AOA work hours policy, including moonlighting and fellow supervision as stated in the AOAs Basic Document on Postdoctoral Training.

VII. Peer Interaction

Subspecialty fellows in pediatric anesthesiology must become experienced in teaching principles of pediatric anesthesiology, including topics such as management of patients requiring sedation outside the OR's, pain management, and life support, to other resident physicians, medical students, and other health care professionals. Fellows should also participate in planning and conducting conferences.

VIII. Scholarly Activities

The fellowship training program in pediatric anesthesiology must provide the opportunity for active fellow participation in research projects pertinent to pediatric anesthesia. Subspecialty fellows should be instructed in the conduct of scholarly activities and the evaluation of investigative methods and interpretation of data, including statistics; they should have the opportunity to develop competence in critical assessment of new therapies and of the medical literature.

IX. Additional Required Components

There must be prompt access to consultation with other disciplines, including pediatric subspecialties of neonatology, cardiology, neurology, pulmonology, radiology, critical care,

emergency medicine, and pediatric subspecialties of surgical fields. To provide the necessary breadth of experience, an accredited residency training program in pediatrics is required within the institution. Residency programs or other equivalent clinical expertise in other specialties, particularly pediatric general surgery and pediatric surgical subspecialties, such as otolaryngology, cardiovascular surgery, urology, neurosurgery, ophthalmology, and orthopedics, and pediatric radiology are highly desirable.

X. Evaluation

1. Faculty responsible for teaching subspecialty fellows in pediatric anesthesiology must provide critical evaluations of each fellow's progress and competence to the pediatric anesthesiology program director at the end of 6 months and 12 months of training. These evaluations must include attitude, interpersonal relationships, fund of knowledge, manual skills, patient management, decision-making skills, and critical analysis of clinical situations. The program director or designee must inform each fellow of the results of evaluations at least every 6 months during training, advise the fellow on areas needing improvement, and document the communication. Subspecialty fellows in pediatric anesthesiology must obtain overall satisfactory evaluations at completion of 12 months of training to receive credit for training.
2. There must be a regular opportunity for fellows to provide written, confidential evaluation of the faculty and program.
3. Periodic evaluation of patient care (quality assurance). Subspecialty fellows in pediatric anesthesiology must be involved in continuous quality improvement, utilization review, and risk management.
4. Periodic evaluation of subspecialty training objectives is encouraged.