



**ACGME International**

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

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**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 surgery is the subspecialty of surgery that comprises the provision of diagnostic, operative, and peri-operative care of pediatric surgical patients. The practice of pediatric surgery is focused on infancy and childhood, but includes the fetus, adolescent, and young adult with special health care needs arising from congenital and acquired pediatric surgical conditions. Individuals who complete this education should be prepared to function as competent pediatric surgeons.

**Int. II. Duration of Education**

Int. II.A. The educational program in pediatric surgery must be 24 or 36 months in length.

**I. Institution**

**I.A. Sponsoring Institution**

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

I.A.2. Pediatric surgery programs should be offered in sites classified as general hospitals or children's hospitals.

I.A.2.a) These sites must include facilities and staff members providing a variety of services, including:

I.A.2.a).(1) adequate inpatient surgical admissions;

I.A.2.a).(2) intensive care units for neonates, infants, and older children; and,

I.A.2.a).(3) departments of emergency medicine, pathology, and radiology, in which infants and children can be managed 24 hours a day.

I.A.3. The educational program must not negatively impact the education of residents in the general surgery residency program.

- I.A.4. Residents from an ACGME-I-accredited pediatrics residency must rotate through the same participating site(s) as the fellows.
- I.A.5. Fellows must have experience working in interprofessional teams that include pediatric medicine residents at either the primary clinical site or at a participating site.
- I.A.6. During the educational program, surgical teams should be made up of attending surgeons, residents, and fellows at various educational levels, medical students (when appropriate), and other health care providers.

**I.B. Participating Sites**

- I.B.1. Participating sites must be in close geographic proximity or provide for teleconferencing to ensure that all fellows are able to participate in joint conferences, grand rounds, basic science and clinical conference lectures, journal club, and ongoing quality improvement and patient safety reviews, such as morbidity and mortality reviews.
- I.B.2. Each participating site must be approved by the Review Committee-International prior to assignment of any fellow to any rotation(s).

**II. Program Personnel and Resources**

**II.A. Program Director**

- II.A.1. The length of the program director's appointment must be at least three years.

**II.B. Faculty**

- II.B.1. Faculty members' appointments must be of a sufficient length to ensure continuity in the supervision and education of fellows.
- II.B.2. To contribute to fellow education in the care of critically ill children, the faculty must include specialists in:
  - II.B.2.a) neonatal-perinatal medicine; and,
  - II.B.2.b) either pediatric critical care or pediatric surgery and critical care.
- II.B.3. Faculty members must participate in annual faculty development activities in fellow evaluation and teaching.

**II.C. Other Program Personnel**

See International Foundational Requirements, Section II.C.

**II.D. Resources**

II.D.1. The pediatric surgical service must document a sufficient breadth and volume of procedures such that fellows will satisfy the defined procedural requirements.

II.D.1.a) There must be at least 1,200 procedures performed by pediatric surgeons at the program's approved participating sites annually.

### **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 surgery, or a surgery 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. Fellows must:

IV.A.1.a).(1).(a) assume personal responsibility to complete all tasks to which they are assigned (or which they voluntarily assume) in a timely fashion; and,

IV.A.1.a).(1).(a).(i) These tasks must be completed in the hours assigned, or, if that is not possible, fellows must learn and utilize the established methods for handing off remaining tasks to another member of the team so that patient care is not compromised.

IV.A.1.a).(1).(b) develop the necessary sensitivity and professionalism to expand their cultural competence to best formulate care plans for diverse patient populations.

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. Fellows must demonstrate competence in:
- IV.A.1.b).(1).(a) surgical peri-operative management, including for:
- IV.A.1.b).(1).(a).(i) congenital, neoplastic, infectious, and other acquired conditions of the gastrointestinal system and other abdominal organs; diaphragm and thorax, exclusive of the heart; endocrine glands; head and neck; gonads and reproductive organs; integument; and blood and the vascular system;
- IV.A.1.b).(1).(a).(ii) operative and non-operative traumatic conditions of the abdomen, chest, head and neck, and extremities, with sufficient experience in the management of children who have sustained injuries to multiple organs and children with trauma from child abuse;
- IV.A.1.b).(1).(a).(iii) endoscopy of the airway and gastrointestinal tract, to include bronchoscopy, esophagoscopy, gastroduodenoscopy, laryngoscopy, and lower intestinal endoscopy;
- IV.A.1.b).(1).(a).(iv) clotting and coagulation disorders;
- IV.A.1.b).(1).(a).(v) advanced laparoscopic and thoracoscopic techniques;
- IV.A.1.b).(1).(a).(vi) care of the critically ill infant or child, to include:
- IV.A.1.b).(1).(a).(vi).(a) cardiopulmonary resuscitation (CPR);
- IV.A.1.b).(1).(a).(vi).(b) management of patients on ventilators; and,
- IV.A.1.b).(1).(a).(vi).(c) nutritional assessment and management.

IV.A.1.b).(1).(a).(vii) pre-operative evaluation of patients, making provisional diagnoses, initiating diagnostic procedures, forming preliminary treatment plans, and providing outpatient follow-up care of surgical patients; and,

IV.A.1.b).(1).(a).(viii) follow-up care, to include short- and long-term evaluation and extended periodic longitudinal care, particularly with major congenital anomalies and neoplasm cases.

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) basic principles applicable to the pediatric population of anesthesia, cardiothoracic surgery, gynecology, management of burns, neurological surgery, orthopaedic surgery, otolaryngology, transplant surgery, urology, and vascular surgery;

IV.A.1.c).(1).(b) the principles of management of patients on ventilators and extracorporeal membrane oxygenation (ECMO);

IV.A.1.c).(1).(c) invasive and non-invasive monitoring techniques and interpretation; and,

IV.A.1.c).(1).(d) the design, implementation, and interpretation of clinical research studies.

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. Fellows must:

- IV.A.1.e).(1).(a) demonstrate skill in providing care in a consultative role and as a member of a primary patient care team, under appropriate supervision;
- IV.A.1.e).(1).(b) demonstrate the ability to participate in multispecialty teams in the emergency department and with other specialists, such as neonatologists and intensivists;
- IV.A.1.e).(1).(c) collaborate with surgical team members, as well as with residents, fellows, and faculty members from other departments outside of their subspecialty area; and,
- IV.A.1.e).(1).(d) develop collaborative relationships to deliver patient care with nurse practitioners and physicians assistants as important members of the care team.

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. Fellows must participate in formal pediatric surgery conferences, including quality improvement and/or patient safety conferences that are specialty-specific and interdisciplinary in nature.
- IV.B.1.a) During the final year of their educational program, fellows should organize such conferences.

**IV.C. Clinical Experiences**

- IV.C.1. Forty-eight weeks in each year of the program must include experiences in clinical pediatric surgery.
- IV.C.2. The program must be structured to include:
  - IV.C.2.a) a minimum of 20 months in general pediatric surgery;
  - IV.C.2.b) a maximum of four months in a 24-month program, or a maximum of five months in a 36-month program, dedicated to related clinical disciplines, including:
    - IV.C.2.b).(1) a maximum of two months in a 24-month program, or three months in a 36-month program, in pediatric critical care and neonatal intensive care; and,

- IV.C.2.b).(1).(a) At least one month must occur in the neonatal intensive care unit, to include the documented care of 20 neonates.
- IV.C.2.b).(1).(b) One month must be spent in the pediatric intensive care unit, to include the documented care of 10 critically ill pediatric patients.
- IV.C.2.b).(2) a maximum of two months in a 24-month program, or three months in a 36-month program, of clinical rotations in pediatric specialties, which may include anesthesia, cardiothoracic surgery, gynecology, management of burns, neurological surgery, orthopaedic surgery, otolaryngology, plastic surgery, transplant surgery, urology, or vascular surgery.
- IV.C.3. Clinical care of surgical patients must include demonstrable involvement in pre- and post-operative care, and, when applicable, follow-up that corresponds to the patient's unique surgical problem(s), with longevity of follow-up directly correlated to what is known about the natural history of the disease process(es).
- IV.C.4. Fellows must be provided with primary patient care responsibility, under the supervision of pediatric surgery faculty members and the critical care specialist, in the care of critically ill surgical patients to allow them to acquire the requisite specialty-specific knowledge and skills, and to obtain competence in the pre-, intra-, and post-operative care of such patients.
- IV.C.4.a) Fellows must have experience and develop competence in:
- IV.C.4.a).(1) writing orders for total parenteral nutrition;
- IV.C.4.a).(2) managing ECMO;
- IV.C.4.a).(3) managing fluids/vasopressors;
- IV.C.4.a).(4) managing ventilators; and,
- IV.C.4.a).(5) decision-making around care.
- IV.C.4.b) There must be coordination of care and collegial relationships among pediatric surgeons, neonatologists, and critical care intensivists concerning the management of medical problems in complex critically ill patients.
- IV.C.4.c) During the critical care experience, fellows must lead daily multidisciplinary rounds, to include decision-making and leadership in the care of patients with primary surgical problems.



- IV.C.4.d) Faculty members in neonatology, pediatric critical care, and/or pediatric surgical critical care must attest to the experience gained by each fellow in meeting the critical care requirements at the end of each critical care rotation.
- IV.C.4.e) Fellows must have completed advanced life support training specific to pediatric patients (e.g., Advanced Trauma Life Support, Neonatal Resuscitation, and Pediatric Advanced Life Support) before beginning critical care rotations.
- IV.C.5. Fellows must document an appropriate breadth, volume, and balance of operative experience as primary surgeon.
  - IV.C.5.a) Fellows must document a total of 800 major pediatric surgery procedures as Surgeon during the program.
  - IV.C.5.b) Fellows must participate in at least 50 Teaching Assistant cases and no more than 50 additional Teaching Assistant cases, for a maximum total of 100 Teaching Assistant cases.
    - IV.C.5.b).(1) Fellows should act as Teaching Assistant when their operative experiences justify a teaching role.
- IV.C.6. Fellows must not share primary responsibility for the same patient with or serve as a Teaching Assistant for a general surgery chief resident.
- IV.C.7. Fellows must document at least one half-day of outpatient experience weekly, averaged over the 48 weeks of each year of clinical education.
- IV.C.8. Fellows must have responsibility for teaching junior residents and medical students.

**IV.D. Scholarly Activity**

- IV.D.1. Fellows' Scholarly Activity
  - See International Foundational Requirements, Section IV.D.1.
- IV.D.2. Faculty Scholarly Activity
  - IV.D.2.a) The program director must demonstrate scholarly activity annually in at least one of the following areas:
    - IV.D.2.a).(1) peer-reviewed funding;
    - IV.D.2.a).(2) publication of original research or review articles in peer-reviewed journals or chapters in textbooks;
    - IV.D.2.a).(3) publication or presentation of case reports or clinical series at local, regional, or national professional and scientific society meetings; or,

IV.D.2.a).(4) participation in national committees or educational organizations.

IV.D.2.b) Faculty members must demonstrate scholarly activity annually.

## **V. Evaluation**

See International Foundational Requirements, Section V.

## **VI. The Learning and Working Environment**

### **VI.A. Principles**

See International Foundational Requirements, Section VI.A.

### **VI.B. Patient Safety**

VI.B.1. Fellows must have a working knowledge of expected reporting relationships to maximize quality care and patient safety.

### **VI.C. Quality Improvement**

See International Foundational Requirements, Section VI.C.

### **VI.D. Supervision and Accountability**

VI.D.1. The program must review and document each fellow's required level of supervision at least annually.

VI.D.1.a) Faculty members must have knowledge of each fellow's prescribed level of supervision and must evaluate each fellow's supervision needs with each rotation.

### **VI.E. Professionalism**

See International Foundational Requirements, Section VI.E.

### **VI.F. Well-Being**

See International Foundational Requirements, Section VI.F.

### **VI.G. Fatigue**

See International Foundational Requirements, Section VI.G.

### **VI.H. Transitions of Care**

See International Foundational Requirements, Section VI.H.

**VI.I. Clinical Experience and Education**

VI.I.1. Any rotation that requires fellows to work multiple nights in succession is a night float rotation, and the total time on nights must be counted toward the maximum allowable time for each fellow over the duration of the program.

VI.I.1.a) Night float rotations must not exceed two months in succession, or three months in succession for rotations with night shifts alternating with day shifts.

VI.I.1.b) There must be no more than four months of night float per year for each fellow in the program.

VI.I.1.c) There must be at least two months between each night float rotation.

**VI.J. On-Call Activities**

See International Foundational Requirements, Section VI.J.