



ACGME International

Advanced Specialty Program Requirements for Graduate Medical Education in Pediatric Infectious Diseases (Pediatrics)

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I. Introduction

I.A. Definition and Scope of Specialty

Specialists in pediatric infectious diseases provide care and consultation to infants, children, and adolescents with infectious diseases.

I.B. Duration of Education

I.B.1. The educational program in pediatric infectious diseases must be 36 or 48 months in length.

II. Institutions

II.A. Sponsoring Institution

II.A.1. A fellowship in pediatric infectious diseases must function as an integral part of an ACGME-I-accredited residency program in pediatrics.

II.A.1.a) The pediatric infectious diseases program should be geographically proximate to the core pediatrics residency program.

II.A.2. The educational program in pediatric infectious diseases must not negatively affect the education of residents in the affiliated pediatrics residency program.

II.B. Participating Sites

See International Subspecialty Foundational Requirements, Section I.B.

III. Program Personnel and Resources

III.A. Program Director

III.A.1. The program director must demonstrate a record of ongoing involvement in scholarly activity.

III.A.2. The program director must demonstrate a record of mentoring or guiding fellows in the acquisition of competence in the clinical, teaching, research, quality improvement, and advocacy skills pertinent to the discipline.

III.A.3. The program director must ensure that each fellow:

III.A.3.a) is provided with mentorship in development of the necessary clinical, educational, scholarship, and administrative skills; and,

III.A.3.b) documents experience in procedures.

III.A.3.b).(1) The program director must ensure that such documentation is available for review.

- III.A.4. The program director must coordinate with the core residency and other related subspecialty program directors, the incorporation of the Competencies into fellowship education to foster consistent expectations for fellows' achievement and faculty members' evaluation processes.
- III.A.5. Meetings with the program directors of the core residency program and all pediatric subspecialties should take place at least semiannually.
- III.A.5.a) There must be documentation of the meetings.
- III.A.5.b) The meetings should address a departmental approach to common educational issues and concerns that may include core curriculum, the Competencies, and evaluation.
- III.A.6. The program director must have the authority and responsibility to set and adjust the clinical responsibilities and ensure that fellows have appropriate clinical responsibilities and an appropriate patient load.
- III.B. Faculty**
- III.B.1. To ensure the quality of the educational and scholarly activity of the program, and to provide adequate supervision of fellows, there must be at least two faculty members, including the program director.
- III.B.2. Faculty members must encourage and support fellows in scholarly activities.
- III.B.2.a) This must include mentoring fellows in the application of scientific principles, epidemiology, biostatistics, and evidence-based medicine to the clinical care of patients.
- III.B.2.b) Scholarly activities must be in basic science, clinical care, education, health policy, health services, patient safety, or quality improvement with implications for the field of pediatric infectious diseases.
- III.B.3. Qualified faculty members in the following pediatric subspecialties should be available for the education of fellows:
- III.B.3.a) adolescent medicine;
- III.B.3.b) neonatal-perinatal medicine;
- III.B.3.c) pediatric cardiology;
- III.B.3.d) pediatric critical care medicine;
- III.B.3.e) pediatric emergency medicine;
- III.B.3.f) pediatric gastroenterology;
- III.B.3.g) pediatric hematology-oncology;
- III.B.3.h) pediatric nephrology;

- III.B.3.i) pediatric pulmonology; and,
- III.B.3.j) pediatric rheumatology.
- III.B.4. The faculty should also include the following specialists with substantial experience in treating pediatric problems:
 - III.B.4.a) allergist and immunologist(s);
 - III.B.4.b) anesthesiologist(s);
 - III.B.4.c) cardiac surgeon(s);
 - III.B.4.d) child and adolescent psychiatrist(s);
 - III.B.4.e) child neurologist(s);
 - III.B.4.f) dermatologist(s);
 - III.B.4.g) medical geneticist(s);
 - III.B.4.h) microbiologist(s);
 - III.B.4.i) neurological surgeon(s);
 - III.B.4.j) neuroradiologist(s);
 - III.B.4.k) ophthalmologist(s);
 - III.B.4.l) orthopaedic surgeon(s);
 - III.B.4.m) otolaryngologist(s);
 - III.B.4.n) pathologist(s);
 - III.B.4.o) pediatric surgeon(s);
 - III.B.4.p) plastic surgeon(s);
 - III.B.4.q) radiologist(s); and,
 - III.B.4.r) urologist(s).
- III.B.5. Consultants should be available in adult infectious diseases for transition care of young adults.

III.C. Other Program Personnel

- III.C.1. To ensure multidisciplinary and interprofessional practice in pediatric infectious diseases, the following personnel with pediatric focus and experience should be available:
 - III.C.1.a) child life therapist(s);

- III.C.1.b) dietitian(s);
- III.C.1.c) home health care liaison(s);
- III.C.1.d) infection preventionist(s);
- III.C.1.e) mental health professional(s);
- III.C.1.f) pharmacist(s);
- III.C.1.g) physical and occupational therapist(s);
- III.C.1.h) public health liaison(s);
- III.C.1.i) respiratory therapist(s);
- III.C.1.j) school and special education liaison(s);
- III.C.1.k) social worker(s); and,
- III.C.1.l) speech and language therapist(s).

III.D. Resources

- III.D.1. Facilities and services, including comprehensive laboratory, pathology, and imaging, must be available.
- III.D.2. The program must have access to laboratories in order to perform testing specific to pediatric infectious diseases.
- III.D.3. Fellows must have access to a laboratory for clinical microbiology, such that direct and frequent interaction with microbiology laboratory personnel is readily available.
- III.D.4. There must be access to clinical microbiology laboratories that have the capacity to identify infections caused by bacteria, mycobacteria, fungi, viruses, rickettsiae, chlamydiae, and parasites in tissues and body fluids.
- III.D.5. There must be an infection control program and an antimicrobial stewardship program at the clinical site(s) where the fellows spend most of their time during the educational program.
- III.D.6. An adequate number and variety of pediatric infectious disease patients ranging in age from newborn through young adulthood must be available to provide a broad experience for fellows.
- III.D.6.a) A sufficient number of patients must be available in inpatient and outpatient settings to meet the educational needs of the program.

IV. Fellow Appointments

IV.A. Eligibility Criteria

IV.A.1. Prior to appointment in the program, fellows should have completed an Accreditation Council for Graduate Medical Education (ACGME)- or ACGME-I-accredited residency program in pediatrics, or a pediatric residency acceptable to the Sponsoring Institution's Graduate Medical Education Committee (GMEC).

IV.B. Number of Fellows

See International Subspecialty Foundational Requirements, Section III.B.

V. Specialty-Specific Educational Program

V.A. Regularly Scheduled Didactic Sessions

V.A.1. Fellows must have a formally-structured educational program in the clinical and basic sciences related to pediatric infectious diseases.

V.A.1.a) The program must utilize didactic experiences, such as lectures, seminars, case discussions, journal clubs, and clinical experience.

V.A.1.b) Pediatric infectious diseases conferences must occur regularly, and must involve active participation by the fellows in planning and implementation.

V.A.1.c) Fellow education must include instruction in:

V.A.1.c).(1) basic and fundamental disciplines, as appropriate to pediatric infectious diseases, such as anatomy, physiology, biochemistry, embryology, pathology, microbiology, pharmacology, immunology, genetics, nutrition/metabolism, antibiotic stewardship, and infection control;

V.A.1.c).(2) pathophysiology of disease, reviews of recent advances in clinical medicine and biomedical research, and conferences dealing with bioethics, complications, end-of-life care, palliation and death, and the scientific, ethical, and legal implications of confidentiality and informed consent; and,

V.A.1.c).(2).(a) This should include relationships between physicians and with patients, families, allied health professionals, and society at large.

V.A.1.c).(2).(b) the economics of health care and current health care management issues, such as cost-effective patient care, practice management, preventive care, population health, quality improvement, resource allocation, and clinical outcomes.

V.A.1.c).(2).(c) This should include management of an infection control program and an antimicrobial stewardship program.

V.B. Clinical Experience

V.B.1. Fellows must have longitudinal responsibility for providing care to a panel of patients throughout their educational program that is supervised by one or more members of the pediatric infectious diseases faculty.

V.B.1.a) This must include longitudinal care of outpatients.

V.B.1.b) The panel of patients must be representative of the types of pediatric infectious disorders fellows are likely to encounter once they complete their educational program.

V.B.2. Fellow education must include experience serving as a role model and providing supervision to residents and/or medical students.

V.C. Fellows' Scholarly Activities

V.C.1. The program must have a core curriculum in research and scholarship.

V.C.1.a) Where appropriate, the curriculum should be a collaborative effort involving all pediatric subspecialty programs at the institution.

V.C.2. Each fellow must design and conduct a scholarly project in the area of pediatric infectious diseases with guidance from the fellowship director and a designated mentor. The designated mentor must:

V.C.2.a) be approved by the scholarship oversight committee; and,

V.C.2.b) have expertise in the fellow's area of scholarly interest, either as a faculty member in pediatric infectious diseases or through collaboration with other departments or divisions.

V.C.3. The program must provide a scholarship oversight committee for each fellow to oversee and evaluate his or her progress as related to scholarly activity.

V.C.3.a) Where applicable, the fellow scholarship oversight committee should be a collaborative effort involving other pediatric subspecialty programs or other experts.

V.C.4. Fellows' scholarly experience must begin in the first year and continue for the entire length of the educational program.

V.C.4.a) The experience must be structured to allow development of requisite skills in research and scholarship, and provide sufficient time for project completion, and presentation of results to the scholarship oversight committee.

V.D. Duty Hour and Work Limitations

See International Subspecialty Foundational Requirements, Sections VI.I. and VI.J.

VI. ACGME-I Competencies

VI.A. Patient Care

Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows must demonstrate proficiency in:

- VI.A.1. the clinical skills needed in pediatric infectious diseases, including:
 - VI.A.1.a) providing consultation, performing a history and physical examination, making informed diagnostic and therapeutic decisions that result in optimal clinical judgement, and developing and carrying out management plans;
 - VI.A.1.b) providing transfer of care that ensures seamless transitions, counseling patients and families, using information technology to optimize patient care, and providing appropriate role modeling and supervision;
 - VI.A.1.c) providing for or coordinating care for patients with complex and chronic diseases with the appropriate physician and/or agency; and,
 - VI.A.1.d) promoting emotional resilience in children, adolescents, and their families through:
 - VI.A.1.d).(1) providing care that is sensitive to the developmental stage of the patient with common behavioral and mental health issues, and the cultural context of the patient and family; and,
 - VI.A.1.d).(2) demonstrating the ability to refer and/or co-manage patients with common behavioral and mental health issues along with appropriate specialists when indicated.
- VI.A.2. Fellows must be able to competently perform all medical and diagnostic procedures considered essential for the practice of pediatric infectious disease medicine. Fellows must:
 - VI.A.2.a) competently use and interpret the results of laboratory tests, imaging, and other diagnostic procedures; and,
 - VI.A.2.b) demonstrate the necessary procedural skills and develop an understanding of their indications, risks, and limitations.
- VI.A.3. Fellows must demonstrate competence in management, in the outpatient emergency department and inpatient settings, of healthy and acutely and chronically ill patients who have infectious diseases or chronic conditions, including:
 - VI.A.3.a) bloodstream infections, sepsis, and shock syndromes;

- VI.A.3.b) bone and joint infections;
- VI.A.3.c) cardiovascular infections;
- VI.A.3.d) central nervous system infections;
- VI.A.3.e) congenital and neonatal infections;
- VI.A.3.f) disorders of host defense;
- VI.A.3.g) ear, nose and throat infections;
- VI.A.3.h) foreign-body and catheter-related infections;
- VI.A.3.i) gastrointestinal/intra-abdominal/hepatobiliary infections;
- VI.A.3.j) health care-associated infections;
- VI.A.3.k) human immunodeficiency virus (HIV) infection;
- VI.A.3.l) infections in transplant patients;
- VI.A.3.m) ocular infections;
- VI.A.3.n) odontogenic infections;
- VI.A.3.o) prolonged, periodic, and recurrent fever;
- VI.A.3.p) reproductive tract infections;
- VI.A.3.q) sexually transmitted infections;
- VI.A.3.r) skin/soft tissue/muscle infections;
- VI.A.3.s) surgical and traumatic wound infections;
- VI.A.3.t) upper and lower respiratory tract infections;
- VI.A.3.u) urinary tract/renal infections; and,
- VI.A.3.v) vasculitides, to include Kawasaki Disease.
- VI.A.4. Fellows must demonstrate competence in promoting antimicrobial stewardship based on microbiological data and pharmacological principles.

VI.B. Medical Knowledge

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.

- VI.B.1. Fellows must demonstrate knowledge of biostatistics, clinical and laboratory research methodology, study design, preparation of applications for funding and/or approval of clinical research protocols, critical literature review, principles of evidence-based medicine, ethical principles involving clinical research, and teaching methods.
- VI.B.2. Fellows must demonstrate knowledge of the principles of, and manage disease control, prevention of, health care-associated infections, emerging pathogens, immunization programs, and/or vaccine-preventable diseases.
- VI.B.3. Fellows must demonstrate knowledge of:
- VI.B.3.a) basic epidemiologic and biostatistical methods and their application to clinical research and patient care;
 - VI.B.3.b) the functions and appropriate utilization of diagnostic microbiology, immunology, virology, mycology, and parasitology laboratories;
 - VI.B.3.c) the appropriate use of antimicrobial agents in a variety of clinical settings, their mechanisms of action, pharmacokinetics, and potential adverse reactions;
 - VI.B.3.d) microbiological and immunologic factors that determine the outcome of the interaction between host and microbe;
 - VI.B.3.e) microbiology laboratory techniques, including culture techniques, rapid diagnostic methods, and molecular methods for identification of bacteria, mycobacteria, fungi, viruses, rickettsiae, chlamydiae, and parasites in clinical specimens;
 - VI.B.3.f) the effects of underlying disease states and immunosuppressive therapies on host response to infectious agents;
 - VI.B.3.g) mechanisms of protection against infection, such as active or passive immunization and immunomodulating agents;
 - VI.B.3.h) clinical pharmacology of antimicrobial agents including drug interactions, adverse reactions, dose adjustments for age and abnormal physiology, and principles of pharmacokinetics and pharmacodynamics;
 - VI.B.3.i) methods of determining activity of antimicrobial agents and techniques to determine their concentrations in blood and other body fluids;
 - VI.B.3.j) indications for diagnostic procedures, including bronchoscopy, thoracentesis, arthrocentesis, lumbar puncture, and aspiration of abscesses, and be able to interpret their results;
 - VI.B.3.k) the sensitivity, specificity, efficacy, benefits, and risks of contemporary technologies, such as those for rapid microbiologic diagnosis and diagnostic imaging;

- VI.B.3.l) the principles and practice of hospital epidemiology and infection control and prevention;
- VI.B.3.m) the currently recommended immunization schedules for young infants, children, and adolescents, with knowledge of protective efficacy, risks, benefits of routinely administered vaccines, including the use of immunizations in special situations and immunocompromised hosts;
- VI.B.3.n) the understanding of adverse events attributed to immunomodulators; and,
- VI.B.3.o) emerging infectious diseases and public health issues pertinent to pediatric infectious diseases.

VI.C. Practice-based Learning and Improvement

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.

VI.D. Interpersonal and Communication Skills

Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

- VI.D.1. Fellows must demonstrate leadership skills to enhance team function, the learning environment, and/or the health care delivery system/environment with the ultimate intent of improving care of patients.

VI.E. Professionalism

Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

VI.F. Systems-based Practice

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care in the country or region in which they practice, as well as the ability to call effectively on other resources in the system to provide optimal health care.