PEDIATRIC INFECTIOUS DISEASES FELLOWSHIP PROGRAM
BOSTON CHILDREN’S HOSPITAL

TRAINING PROGRAM CURRICULUM AND GOALS
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OVERVIEW OF CURRICULUM AND PROGRAM GOALS

Overall Goal
The overall goal of the fellowship training program in Pediatric Infectious Diseases (ID) at Boston Children's Hospital (BCH) is to prepare trainees for a career in academic pediatric ID. This training has two primary components, training in the management of children with a wide range of infectious diseases of childhood and training in research related to pediatric ID.

The field of pediatric ID is characterized by a broad range of clinical problems and constant, rapid change in disease diagnosis and management. An extensive variety of career paths is available to pediatric ID subspecialists. For these reasons the program does not expect graduates to be knowledgeable in all aspects of pediatric ID, but rather to have acquired substantial knowledge in the field, including the ability to diagnose and manage common pediatric infectious diseases, gain familiarity with many of the less common pediatric infectious diseases, and develop the ability to systematically approach the diagnosis and management of infectious diseases in children where the diagnosis is not known at the time of initial consultation.

General Goals Based on ACGME Competencies
The ACGME Core Competencies are an essential component of the Common Program Requirements in graduate medical education. It is expected that these competencies are taught and evaluated beginning during residency training, and that training in pediatric ID provides an opportunity for continued development of these competencies. Each fellow will be expected to be knowledgeable regarding what these competencies are, and each fellow should understand that he/she will be systematically and regularly evaluated during training on the mastering of these competencies. The competency-based overall goals for training in our program are as follows:

Patient care: Fellows should learn to accurately, efficiently, and comprehensively conduct medical interviews, perform physical examinations, and review other data pertinent to the care of the patient. Fellows should learn to incorporate analysis of clinical data, evidence-based knowledge, and consideration of patient preferences when making medical decisions. Fellows should learn to appropriately monitor ongoing patient progress and laboratory data after the initial evaluation and recommendations.

Medical knowledge: Fellows should develop a fund of knowledge of basic and clinical sciences relevant to the field of pediatric infectious diseases, demonstrate an ongoing interest in learning, and demonstrate the ability to understand complex relationships and interactions as part of mechanisms of disease. Fellows should be able to utilize a range of resources to enhance their medical knowledge.

Practice-based learning and improvement: Fellows should learn to perform self-evaluations, incorporate feedback into improvement efforts, and demonstrate a commitment to lifelong learning. Fellows should learn to use information technology to manage information for patient care and self-improvement.

Interpersonal and communication skills: Fellows should establish effective, humanistic, and therapeutic relationships with patients and families; demonstrate listening, narrative, and non-verbal skills in their interactions with patients and providers; and provide effective education and counseling to patients, families, and colleagues.

Professionalism: Fellows should demonstrate respect, compassion, integrity, and honesty in all aspects of their training. Fellows should teach and model responsible behavior, a commitment to self-assessment, the ability to acknowledge errors, and should always consider the needs of patients, families, and colleagues.

Systems-based learning: Fellows should demonstrate the ability to access and utilize external resources to optimize patient care; use systematic approaches to reduce errors and improve patient care; and assist in developing systems' improvements.
Goals Based on Training Level

First Year: The goal of this year is for fellows to learn to manage almost any infectious diseases problem in a highly effective manner. Fellows complete the nearly all of their clinical training during the first year of their fellowship. Therefore, the first year fellow’s clinical training will primarily be directed at obtaining a solid knowledge base in learning how to deal with the most common infectious disease problems encountered. It is anticipated that by the end of their first year of training, the fellow should have extensive knowledge of the infections that occur in otherwise healthy children, as well as those that occur in children with compromised host defenses. They should have commanding knowledge of diagnostic approaches to these infections and the antimicrobial armamentarium with which they can be treated.

Specific objectives for first year fellows:
1. Plan initial work-up and management of pediatric infectious diseases, and understand their pathogenesis and natural history
2. Provide ID continuity care for patients discharged from the hospital with intravenous (IV) antibiotic therapy
3. Understand microbiological techniques and how to use them
4. Understand basic functions of the immune system and immunological basis of disease
5. Understand the pharmacology, pharmacokinetics, and pharmacodynamics of antibiotics and their interaction with other drugs
6. Understand principles of hospital epidemiology and infection control
7. Teach on rounds and at the bedside
8. Prepare and deliver lectures
9. Design a research protocol, write a proposal and apply for funding
   o Develop hypothesis
   o Perform literature review
   o Design the study
   o Apply for intramural and/or extramural funding
   o Submit a proposal to the institutional review board (IRB), if applicable for the project
10. Understand external agency regulations and IRB policies and procedures for conducting research

Second and Third Year (modifiable with combined fellowships): The major goals of the subsequent years of training are for fellows to learn research methodology and conduct research related to pediatric ID. Fellows are expected to complete an educational curriculum in principles of clinical research and produce a work product reflective of their research efforts during this time. During this time fellows will also extend and consolidate their clinical infectious disease skills, through limited additional inpatient experience, training in the infectious diseases clinics and continued participation in clinical conferences.

Specific objectives for second year fellows:
1. Manage most complicated infectious diseases, and understand their pathogenesis and natural history (may be competent by end of first year)
2. Understand statistical methods, as applicable to research
3. Implement their research protocol and conduct study/gather data
   o Implement a protocol
   o Gather and analyze data

Specific objectives for third year fellows:
1. Manage complicated infectious diseases in children effectively and independently (may be competent by end of first or second year)
2. Complete research protocol
   o Present results at national/international meetings
   o Prepare and complete the written “work product,” which may include:
     ▪ A peer-reviewed publication with the resident as the first author
     ▪ An in-depth manuscript describing a completed project
- An extramural grant application that has either been accepted or favorably reviewed
- A progress report for projects of exceptional complexity

3. Be effective in teaching both individuals and groups of learners in clinical settings, classroom, lectures, and seminars using electronic and print modalities.

I. Clinical Components and Knowledge Content Areas

   The content of the training program parallels that of the ACGME Program Requirements for Graduate Medical Education in Pediatric Infectious Diseases (Appendix).

   A. Clinical population:

   Our patient population includes patients from newborns through adulthood, inpatients, outpatients, and patients with chronic illnesses, as outlined in the ACGME Program Requirements for Pediatric Infectious Diseases. In addition, the population at BCH includes patients with cystic fibrosis, solid organ and bone marrow transplant patients, and a broad variety of surgical patients. Fellows also gain experience in managing adult patients with infectious diseases through a rotation on the Infectious Disease Service at Beth Israel Deaconess Medical Center (BIDMC). Fellows gain added experience with patients with infectious diseases prevalent outside the U.S. (e.g. tuberculosis and parasitic diseases) and with patients who have sexually transmitted infectious diseases through a rotation at Boston Medical Center (BMC).

   B. Clinical experience:

   The fellows’ clinical experience covers all of the pathogens and disease processes listed in the ACGME program requirements and American Board of Pediatrics (ABP) Certifying Examination Content Outline. In addition, many of the components of the ABP Content Outline are covered in the clinical and/or didactic training the fellows receive. Fellows have intensive clinical experience in the inpatient and outpatient settings. The inpatient experience is primarily consultative and focuses on the infectious disease management of acutely ill children. The Division provides ID consultation to all Departments and Divisions of BCH. The outpatient experience includes 1) continuity care for inpatients seen by the infectious diseases consultation service and discharged with IV antibiotics to the outpatient setting, 2) general infectious diseases clinic where patients referred by primary pediatricians and patients previously seen as inpatients are evaluated and managed, 3) other opportunities for longitudinal and specialized pediatric ID care including, HIV clinic, perinatal diagnostics clinic where fellows manage newborns with congenital infections, travel clinic, and immunocompromised ID clinic. The teaching role of the attending physician in each of these settings focuses on case-based teaching of relevant clinical content areas as described by the ACGME.

   C. Specific Knowledge Content Areas:

   In addition to the management of ID processes described above, the program provides training in the following areas relevant to Pediatric Infectious Diseases.

   1. Epidemiologic and biostatistical methods.
   2. Diagnostic microbiology
   3. Appropriate use, pharmacokinetics and toxicities of antimicrobial agents
   4. Microbial and host determinants of infection
   5. Vaccination and immunomodulator therapy, including adverse events
   6. Critical analysis of clinical literature, including concepts of sensitivity, specificity, predictive value
   7. Hospital epidemiology and infection control, including mechanisms of infectious disease transmission
   8. Quality improvement, outcomes analysis and cost containment.
   9. Ethical, medico-legal and public health issues
   10. Recognition of social and emotional issues relevant to pediatric infectious diseases
   12. Didactic and case-based teaching skills
   13. Methodology and practice of clinical and/or basic research
II. Training Mechanisms
The training of fellows in the content areas described in section I is achieved through several mechanisms including clinical care in the inpatient and outpatient setting supervised by faculty members in the Division, didactic experiences, rotations in diagnostic microbiology and scholarly activity in the form of research and research training. The specific training program components include:

A. Clinical Care Curriculum:
Goals:
The goal of these rotations is for the fellow to gain experience and skill in the diagnosis and management of common and uncommon infectious diseases encountered in both the immunocompetent and immunocompromised host in the inpatient hospital setting and the outpatient clinical setting. Content knowledge of these infections and their management is a major goal of these rotations. In addition, subspecialty-relevant skills in patient/family interviewing, physical examination, data synthesis, diagnosis and management plan formulation will be developed. Communication skills, including communication with patients and families, and with referring physicians and other health care professionals will be acquired. The application of literature review and evidence-based medicine is emphasized. These skills are acquired through independent learning and teaching by the attending physician during clinical rounds and discussion of the patients with the attending physician in the outpatient clinics. These skills are evaluated by each attending physician.

Clinical Components (Rotation-specific goals and objectives are included in subsequent sections):
1. Inpatient Consultation Service – BCH: Fellows spend a total of 9.5 - 10 months on inpatient infectious diseases consultative service, including 7 - 9 months at BCH, one month at BMC and one month at BIDMC. The inpatient consultation service at BCH is divided into general and immunocompromised hosts services, with fellows spending approximately equal time on each service. Typically 8 - 9 months of inpatient experience occurs in the first year and 1-2 months in the second or third year of fellowship. Competencies taught: Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Professionalism, Systems-Based Practice Evaluations: Milestones-based inpatient attending evaluation of fellow, peer evaluation of fellow

2. Inpatient Consultation Service – BMC: This service experience provides fellows with exposure to a different patient population than is seen at BCH, with less emphasis on tertiary care and immunocompromised hosts, and a greater proportion of underserved and vulnerable populations. Competencies taught: Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Professionalism, Systems-Based Practice Evaluations: Overall attending evaluation of fellow

3. Inpatient Consultation Service – BIDMC: The main focus of this rotation is for pediatric ID fellows to gain experience in the management of infectious diseases in adults. The goal of this experience is not for the BCH fellows to become expert in the management of the broad range of infectious diseases in adults, but to gain appreciation for the differences and similarities of infectious disease management in adults versus children. Competencies taught: Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Professionalism, Systems-Based Practice Evaluations: Overall attending evaluation of fellow

4. Outpatient General Infectious Disease Clinic/OPAT Clinic – BCH: During the first year of the training program fellows only patients in the OPAT clinic, as these are patients that have followed in the inpatient setting who are then discharged on IV antibiotic therapy. In a similar context to OPAT, fellows may also see other inpatients who require ID follow-up care in the immunocompromised hosts or
perinatal diagnostic clinic. During the second and third year of the training program fellows see new patients during one half-day clinic session approximately once every month.

**Competencies taught:** Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Professionalism, Systems-Based Practice

**Evaluations:** Milestones-based outpatient attending evaluation of fellow, global evaluation of fellow by patients, nurses, administrative staff

5. **Perinatal Diagnostics Outpatient Clinic (PDC)/Immunocompromised Hosts ID (ICH ID) Clinic – BCH:** Fellows in PDC are scheduled to see infants with perinatal HIV exposure and other perinatal/congenital infections, and follow them through the course of their work-up and treatment after having seen the patient in the NICU or nursery as part of inpatient consultation. Fellows in ICH ID Clinic are scheduled to see patients from the inpatient ICH ID service who require ongoing outpatient ID care and follow them through the course of their work-up and treatment.

**Competencies taught:** Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Professionalism, Systems-Based Practice

**Evaluations:** Milestones-based outpatient attending evaluation of fellow, global evaluation of fellow by patients, nurses, administrative staff

7. **Outpatient Clinics – BMC:** Fellows see patients in the out-patient setting at BMC during their ½-month rotation there during their first year of training. Fellows participate in the sexually transmitted diseases clinic, and in the international/refugee which allows them to see patients with infectious diseases that are more prevalent in the developing world.

**Competencies taught:** Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Professionalism, Systems-Based Practice

**Evaluations:** Overall evaluation as part of single BMC rotation

8. **Clinical Microbiology Rotation – BCH:** During the first year each fellow spends one month in the clinical microbiology laboratories learning methodologies of clinical bacteriology, virology, mycology and parasitology.

**Competencies taught:** Medical Knowledge, Systems-based Practice, Practice Based Learning

**Evaluations:** Attendance monitored

9. **Infection Prevention and Antimicrobial Stewardship Rotation – BCH:** During the first year, each fellow spends ½-month working with the infection control and antimicrobial stewardship teams learning the approach to infection prevention and hospital epidemiology as well as monitoring antimicrobial utilization.

**Competencies taught:** Medical Knowledge, Systems-Based Practice, Practice-Based Learning

**Evaluations:** Attendance monitored

**Didactic Teaching Components:**

1. **Divisional Introductory Lecture Series:** A series of didactic sessions on fundamental topics in pediatric diseases is provided to first year fellows as part of the initial orientation process at the beginning of the fellowship, and continues over the course of the first six months of fellowship training. Annual topics covered in this series include: general principles of antibiotic management, orthopedic infections, infections in ICU and burn patients, neurosurgical infections, line infections, fungal infections and antifungal therapies, parasitic infections, immunodeficiencies, patient safety and errors in ID, epidemiology, biostatistics, and evidence-based medicine, sexually transmitted infections, travel medicine and infections in the returning traveler, congenital infections, infections in stem cell transplant recipients, infections in immunocompromised hosts, pediatric HIV overview and medical management, HIV screening and mother to child transmission, mycobacterial infections, and outpatient ID topics including community-acquired MRSA, Lyme disease, and fever of unknown origin.
2. **Harvard-Wide Introductory Lecture Series**: Each year during the summer two hours of weekly lectures on major clinical topics in both adult and pediatric infectious diseases are provided by faculty from the Harvard-affiliated infectious diseases programs. Annual topics covered in this series include antibiotics and antifungals, gynecologic/obstetrical infections, parasitic infections, infections in immunocompromised hosts, infection control, emerging biothreats, and viral hepatitis. This introductory lecture series also includes a core HIV lecture series component which covers HIV-related topics in both children and adults over a several-week period in the summer.

**Competencies taught**: Medical Knowledge, Patient Care

**Evaluations**: Attendance mandatory for 1st year fellows, monitored

3. **Divisional Journal Club**: Fellows and faculty participate in a weekly journal club during which clinical and basic science articles relevant to Pediatric Infectious Diseases are critically reviewed and discussed. Each fellow presents a journal article approximately once per year during the first year.

**Competencies taught**: Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Systems-Based Practice

**Evaluations**: Attendance monitored, teaching session evaluation for fellow presentations

4. **Divisional Clinical Case Conference**: Fellows and faculty participate in a weekly case-based clinical conference. In addition to a discussion of ID approach and management, many of the additional curricular issues, including infection control, use of antimicrobial agents, etc. are addressed in this conference.

**Competencies taught**: Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Systems-Based Practice

**Evaluations**: Attendance mandatory, monitored

5. **Harvard-Wide Joint ID Clinical and Research Conference**: Faculty and fellows from all of the Harvard-affiliated infectious diseases programs participate in a weekly conference in which the fellow briefly presents an illustrative case and then provides a formal didactic presentation to the group. This presentation, which each fellow prepares 3-4 times during the first year, is mentored by a faculty member and critiqued by another faculty member. One week out of four is devoted to research presentations, usually by faculty.

**Competencies taught**: Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Systems-Based Practice

**Evaluations**: Attendance mandatory, monitored, teaching session evaluation for fellow presentations

6. **Immunocompromised Hosts ID Conference**: Faculty and fellows from the Division and from the Infectious Diseases Programs at Partners and BIDMC participate in a weekly conference devoted to infections in immunocompromised hosts. The format alternates between case discussions and formal presentations by faculty.

**Competencies taught**: Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning

**Evaluations**: Attendance mandatory, monitored

7. **Weekly Microbiology Rounds**: During the first year weekly rounds are held with the staff of the diagnostic microbiology laboratories where laboratory diagnosis of specific pathogens from cases seen by the infectious diseases service are demonstrated and discussed.

**Competencies taught**: Medical Knowledge, Practice Based Learning, Systems-Based Practice

**Evaluations**: None
8. **Training in Patient Safety and Quality Improvement:** To improve fellow training in patient safety and quality improvement, fellows are given the opportunity to complete CRICO Risk Management and Medical Errors Web Modules (optional), are given a lecture on “Patient Safety and Errors in ID” during the Divisional Introductory Lecture Series (mandatory), and complete an online patient safety didactic curriculum through the Institute for Healthcare Improvement (mandatory). In addition, fellows are required to develop an Infectious Diseases Evidence Assessment (IDEA) four times per year in the first year, and two times per year thereafter. An IDEA is a one-page evidence-based review of a clinical topic in pediatric infectious diseases for which there is no existing clinical practice guideline. Fellows choose a topic of interest that has been discussed during rounds, conduct a literature review under the guidance of a faculty mentor, and summarize their findings with a brief “bottom line” based on the available data. Each IDEA is presented for discussion during our divisional case conference. The IDEAs are stored on our division website and serve as a way to share critically-appraised topic reviews among division members for application to clinical practice. The IDEAs serve as teaching tool to educate fellows on evidence-based assessment and also serve as a quality improvement tool within the division. Fellows additionally participate in division quality improvement projects or develop their own projects.

**Competencies taught:** Systems-Based Practice, Practice-Based Learning

**Evaluations:** IDEAs evaluated by faculty and presented to division; attendance monitored for didactic components; online module completion monitored by hospital GME office

B. **Scholarly Activity Curriculum:**

1. **Mentored Research Experience:** During the first year fellows identify a research mentor and with that mentor devise a research project for the second and third years of the fellowship. Two months without inpatient clinical responsibilities are provided during the first year of fellowship to allow time for research planning. Fellows consult with the Program Director, Division Chief and other members of the Division regarding suitable research mentors and projects. Fellows may choose a research mentor within the Division, elsewhere at BCH, or at a neighboring institution. Fellows are encouraged to apply for research fellowship awards as part of this process. During the course of the research years, primary supervision is provided by the research mentor with oversight by the Program Director and Division Chief. A Scholarship Oversight Committee (SOC) is responsible for monitoring progress and certifying that the fellow has met the American Board of Pediatrics requirements for scholarly activity.

**Competencies taught:** Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Systems-Based Practice

**Evaluations:** Scholarship Oversight Committee

2. **Presentation of Research Results:** In addition to presentations at national meetings that fellows often attend, BCH and the Department of Medicine sponsor an annual research day at which fellows have the opportunity to present their research in the form of poster presentations. The Division of Infectious Diseases has an annual retreat, focused on research in the division, at which second and third year fellows present research posters. If their work has progressed sufficiently, 3rd year fellows also have the opportunity to present their research as part of the division research conference.

**Competencies taught:** Medical Knowledge, Interpersonal and Communication Skills

**Evaluations:** Faculty feedback

3. **Core Curriculum for Scholarly Activity:** The ABP requirements for fellowship training require implementation of a Core Curriculum which should provide training in biostatistics, clinical and laboratory research methodology, study design, preparation of grant applications, ethics in research, principles of evidence-based medicine and critical review of the literature, and achievement of proficiency in teaching (including teaching with electronic and print modalities). The offered courses to complete the Core Curriculum include:
a. **Introduction to Clinical Research Course:** An intensive four-day course is offered once per year by the hospital. All fellows are required to take this course once during their 3 years of training, unless they are part of a certificate-earning or Master’s program in clinical investigation (such as MPH or MS in Epidemiology) or the Harvard School of Public Health Summer Program in Clinical Effectiveness which fulfills this training. This four-day course fulfills the biostatistics, clinical and laboratory research methodology, study design, preparation of grant applications, and ethics in research components of the Core Curriculum. Fellows typically take this course during the second or third year during a time when their clinical responsibilities are limited.

*Competencies taught:* Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning, Systems-Based Practice

*Evaluations:* Attendance monitored, certificate of completion

b. **Office of Fellowship Training Seminars:** The Office of Fellowship Training offers several lectures and seminars each year that help fellows develop proficiency in teaching and public speaking. Some examples include: “Public Speaking in Science – A Practicum for Fellows”, "Drawing Tools and Illustration Features of Powerpoint", "PosterMaking", and "Harnessing the Power of Photoshop". Seminars in grant writing and funding research are also offered. Fellows are required to attend one course on effective teaching during their three years of training.

*Competencies taught:* Interpersonal and Communication Skills, Practice Based Learning, Systems-Based Practice

*Evaluations:* Attendance monitored, certificate of completion

c. **Divisional Introductory Lecture Series:** The mandatory introductory lecture series, as described under Didactic Teaching Components, includes several Core Curriculum topics, such as “Grant Writing” and “Epidemiology, Biostatistics, and Evidence-Based Medicine”.

*Competencies taught:* Medical Knowledge, Patient Care

*Evaluations:* Attendance mandatory, monitored

d. **Strategies for Academic Success:** This series of seminars has been developed by the GME office at BCH and provides education in many of the ABP core curriculum components including patient safety and quality improvement, fellows as teachers, and career development.

*Competencies taught:* Interpersonal and Communication Skills, Practice Based Learning, Systems-Based Practice

*Evaluations:* Attendance monitored, certificate of completion

### III. Evaluation and Mentoring Mechanisms

The mechanisms in place for evaluation of fellows in this program are designed to assess the development of competency in the six core areas identified by the ACGME (patient care, medical knowledge, interpersonal and communication skills, professionalism, systems-based practice, practice-based learning and improvement). Fellows are evaluated in multiple ways in multiple settings to ensure effective assessment of their skills by attending faculty, peers, staff, and patients. Fellows are evaluated on observed clinical patient interactions (including physical examination and history-taking), written notes, and teaching skills. The evaluation tools utilized in this program are summarized in the attached Assessment Methods table. The fellowship program directors and division chief are responsible for the monitoring and evaluation of fellows in this program.

#### A. Evaluation of Clinical Care:

The vast majority of fellow evaluation takes place during the clinical aspects of their training. Fellows are evaluated during both inpatient and outpatient rotations, as well as during rotations at other institutions. Evaluations for clinical rotations are documented through the New Innovations electronic evaluation system and evaluate all six clinical competencies using a milestones-based assessment tool. It is expected that faculty members who are evaluating the fellow will verbally review the evaluation with the fellow at the end of the clinical rotation. The
fellowship program director reviews the evaluation forms to identify any areas of concern. Specific concerns are reviewed during the semi-annual fellow meetings, or sooner if needed. If such areas are identified, a plan is developed to address the concerns and develop steps for improvement over the course of the clinical period. Fellows are evaluated using the following tools and these tools are also indicated for each component in the Clinical Care Curriculum under Training Mechanisms above. Fellows are provided with sample evaluation forms as part of the Fellow Policy Manual distributed during orientation, and these can also be found on the division website:

1. Inpatient attending evaluation of fellow – competency-based assessment of the fellow during an inpatient rotation using milestones levels
2. Outpatient attending evaluation of fellow – competency-based assessment of the fellow during an inpatient rotation using milestones levels
3. Global evaluation – fellows are evaluated on their patient care, interpersonal skills, professionalism, and systems-based practice by nurses and administrative staff.
4. Patient/family evaluation – in the outpatient clinic setting, patients or families of patients evaluate fellows on their interpersonal and communications skills and their professionalism during the clinic visit.

B. Evaluation of Teaching:
Fellows are evaluated on interpersonal and communication skills, medical knowledge, and practice-based learning and improvement competencies as part of their teaching efforts at the Joint ID Conference and Journal Club. It is expected that faculty members who are evaluating the fellow will provide both verbal and written feedback to the fellow at the end of the teaching session.

C. Evaluation of Scholarly Activity:
A Scholarship Oversight Committee (SOC) is assembled for each fellow during their first year of fellowship training. The SOC is comprised of the research mentor and two other faculty members, one of whom must be from outside of the pediatric infectious diseases division. The program director or associate program director attends each SOC meeting but does not have input in approving the work product of the scholarly activity. The SOC meets twice per year during the second and third years of fellowship to assess the quality of the research training and the fellow’s progress. Any concerns or problems identified in these sessions are addressed with the fellow and the research mentor. Significant concerns regarding research progress are addressed through specific recommendations to the fellow and mentor, and if necessary through more frequent meetings of the SOC. Second and third year fellows present their research at the annual Division retreat, usually in poster format, where it is discussed with members of the division faculty.
General Pediatric ID Inpatient Consult Service

Goals:
1. To gain experience in the inpatient evaluation of common infections in children (competencies taught – PC, MK, ICS, PBL, P)

Objectives:
1. To learn how to evaluate children with a wide range of infections including respiratory infections, CNS infections, bone and joint infections, cardiovascular infections, skin and soft tissue infections, gastrointestinal and intra-abdominal infections, ocular infections, reproductive tract and sexually transmitted infections, foreign body and catheter-associated infections, and bloodstream infections.
2. To develop skills in generating differential diagnoses that encompass both infectious and non-infectious etiologies.
3. To learn to evaluate for infections in children with underlying medical conditions that may complicate diagnoses, such as neuromuscular conditions, genetic conditions, previous surgeries or other interventions, and foreign bodies/foreign material.
4. To understand risk factors for post-surgical infections and approaches to post-operative infection prevention.
5. To learn the utility of diagnostic modalities in evaluating for and diagnosing infections (imaging, cultures, surgical interventions, biopsies).

2. To gain experience in the inpatient management of common infections in children (competencies taught – PC, MK, ICS, PBL, P, SBP)

Objectives:
1. To learn the utility of therapeutic interventions in managing infections, such as drainage of abscesses.
2. To understand the mechanisms of action and therapeutic range of antimicrobial agents in children.
3. To understand fundamental pharmacokinetic and pharmacodynamic principles in antimicrobial therapy and the indications for measurement of therapeutic drug levels.
4. To develop skills in the evaluation, assessment, and management of antimicrobial toxicities in children.
5. To understand potential drug interactions between antimicrobials and other medications in children with underlying medical conditions or those receiving multiple medications.
6. To learn to consider cost-effectiveness and best practices in the approach to optimal antimicrobial choice, route of administration, dose, and duration in children.
7. To utilize an evidence-based approach to using antimicrobials agents in settings where potential risks of treatment are significant (e.g. use of ganciclovir in congenital CMV infection).

3. To gain experience in the application of principles of infection control and prevention in the hospital setting (competencies taught – PC, MK, SBP)

Objectives:
1. To understand the assignment of precautions for patients in various settings, and the requirements for patients and healthcare providers when such precautions are in place.
2. To learn to assess for exposure risk in contacts of patients with communicable infections.
3. To understand the role and indications of chemoprophylaxis for contacts of patients with communicable infections.

4. To gain experience in multi-disciplinary care and care coordination for patients leaving the inpatient setting who need home antimicrobial therapy (competencies taught – PC, ICS, PBL, P, SBP)
Objectives:
1. To navigate a complex care system by interacting effectively and professionally with pharmacists, primary physicians, nurse coordinators, parents, and patients, and extending this role to the outpatient setting by communicating with primary community providers and home healthcare providers.

Competencies taught: Patient Care (PC), Medical Knowledge (MK), Interpersonal and Communication Skills (ICS), Practice Based Learning (PBL), Professionalism (P), Systems-Based Practice (SBP)

Additional teaching methods: General ID weekly case conference, Joint ID weekly conference, Immunocompromised Hosts weekly conference, Microbiology weekly rounds

Evaluations: Fellows will be evaluated by an inpatient attending evaluation. Fellows will also have the opportunity to evaluate the attending faculty and their overall experience during the rotation. In addition, verbal feedback by both the faculty and fellow is given at the mid-point and end of the rotation.


**Immunocompromised Hosts (ICH) ID Inpatient Consult Service**

**Goals:**

1. To gain experience in the evaluation and management of infectious diseases in children with immunocompromising conditions or treatments (competencies taught – PC, MK, ICS, PBL, P)

**Objectives:**

1. To learn the unique infectious considerations and unusual types of infections that may occur in immunocompromised hosts.
2. To develop skills in the evaluation and treatment of infectious diseases in children undergoing chemotherapy for cancer.
3. To develop skills in the evaluation and treatment of infectious diseases in children undergoing or who have undergone hematopoietic stem cell transplantation.
4. To develop skills in the evaluation and treatment of infectious diseases in children undergoing solid organ (kidney, liver, lung, bowel, cardiac, multivisceral) transplantation.
5. To develop skills in the evaluation and treatment of infectious diseases in children with other immunocompromising conditions (e.g. patients with inflammatory bowel disease, rheumatologic disorders, congenital immunodeficiencies, HIV infection, and neonates).
6. To develop skills in the approach to management of infants with congenital or neonatal infections.
7. To recognize signs and symptoms and to understand the evaluation and management of latent virus reactivation that may lead to disease in transplant recipients, such as EBV-associate post-transplant lymphoproliferative disorder and CMV reactivation.

2. To gain experience in evaluating infectious risk and implementing infection prevention practices in patients who will be immunosuppressed due to transplantation (competencies taught – PC, MK, ICS, PBL, P, SBP)

**Objectives:**

1. To learn the components of a pre-transplant infectious diseases evaluation and clearance and how to perform a pre-transplant evaluation.
2. To gain experience counseling transplant patients in infection prevention, in areas including personal hygiene, avoidance of sick contacts, environmental exposures to foods and travel, etc.
3. To learn the critical components of a peri-transplant evaluation, including documentation and understanding of the interpretation of donor/recipient serologies, ischemic time and operating room complications, high-risk donors, and peri-transplant infections.
4. To acquire knowledge regarding prophylactic and preventive strategies for infectious disease complications in transplant recipients (e.g. CMV prophylaxis for mismatched donor/recipient serostatus, etc).

3. To gain experience in the management and effects of therapeutics in immunocompromised patients (competencies taught – PC, MK, ICS, PBL, P, SBP)

**Objectives:**

1. To understand the mechanism of action of commonly used immunosuppressive regimens, including calcineurin inhibitors, chemotherapeutic agents, monoclonal antibodies, steroids, etc. and to understand the type and degree of immunosuppression that occurs with each.
2. To understand the role of individual immunosuppressive therapies in increasing risk of specific infections (opportunistic infections, pathogens associated with T-cell suppression, pathogens associated with neutropenia).
3. To acquire knowledge regarding the use of antimicrobial agents and drug interactions/toxicities in patients who are receiving multiple other medications. Fellows will learn how to approach antimicrobial choice in a patient population that is highly antibiotic exposed, immunosuppressed, and may be critically ill, and also how to predict interactions that may affect decisions regarding antimicrobial choice and dosing.
4. To gain experience in multi-disciplinary care and care coordination for immunocompromised patients (competencies taught – PC, ICS, PBL, P, SBP)

**Objectives:**
1. To navigate a complex care system by interacting effectively and professionally with pharmacists, transplant physicians, nurse coordinators, parents, and patients, and understand the role of outside entities in obtaining information for patient care (e.g. New England Organ Bank)

*Competencies taught:* Patient Care (PC), Medical Knowledge (MK), Interpersonal and Communication Skills (ICS), Practice Based Learning (PBL), Professionalism (P), Systems-Based Practice (SBP)

*Additional teaching methods:* General ID weekly case conference, Joint ID weekly conference, Immunocompromised Hosts weekly conference, Microbiology weekly rounds, Pediatric Transplant Center weekly meeting

*Evaluations:* Fellows will be evaluated by an inpatient attending evaluation. Fellows will also have the opportunity to confidentially evaluate the attending faculty and provide feedback on their overall experience during the rotation. In addition, verbal feedback by both the faculty and fellow is given at the mid-point and end of the rotation.
General Pediatric ID Outpatient Clinic/Outpatient Parenteral Antibiotic Therapy (OPAT) Clinic

Goals:

1. To gain experience in the management of outpatient intravenous antibiotic therapy (OPAT) for patients with complicated infections requiring prolonged antimicrobial courses (competencies taught – PC, MK, ICS, PBL, SBP, P) – primarily first year fellows

   Objectives:
   
   1. To understand the indications for and limitations of prescribing outpatient antibiotic therapy for children with diagnoses requiring prolonged antimicrobial courses (e.g. osteomyelitis, hardware infection).
   2. To understand the toxicities associated with prolonged antimicrobial courses and how to monitor for such toxicities.
   3. To learn to coordinate care and communicate effectively with primary inpatient services, pharmacists, outpatient primary care providers, home health services, inpatient and outpatient ID attending providers, patients, and families to optimize dosing, duration, and monitoring during OPAT and minimize complications related to IV lines and medication toxicities.
   4. To learn to address toxicities and complications associated with OPAT if they arise.

2. To gain experience in the evaluation and management of common diagnoses for which children are referred for pediatric infectious diseases consultation (competencies taught – PC, MK, ICS, PBL, SBP, P) – second and third year fellows only

   Objectives:
   
   1. To recognize the differences in approach to managing outpatient referrals to the pediatric infectious diseases clinic and inpatient consultations.
   2. To learn how to evaluate, test, and treat for common pediatric infectious diseases diagnoses for which patients are referred to the outpatient general ID clinic (e.g. Lyme disease, community-acquired MRSA, recurrent fevers, recurrent infections, fatigue).
   3. To recognize the controversies associated with particular pediatric infectious diseases questions (e.g. chronic Lyme disease, vaccine-associated complications, PANDAS) and how to appropriately and effectively counsel parents regarding such questions.
   4. To learn to effectively communicate with community providers regarding patients seen in the infectious diseases clinic, through both verbal follow-up phone calls and written consultation notes.

Competencies taught: Patient Care (PC), Medical Knowledge (MK), Interpersonal and Communication Skills (ICS), Practice Based Learning (PBL), Professionalism (P), Systems-Based Practice (SBP)

Additional teaching methods: General ID weekly case conference, Joint ID weekly conference

Evaluations: Fellows will be evaluated by an outpatient attending evaluation and global evaluation including nurses, administrative staff, and patients.
Perinatal Diagnostics Clinic/Immunocompromised Hosts ID Clinic

Goals:
1. To gain experience in the process of screening infants for HIV infection after perinatal HIV exposure (competencies taught – PC, MK, ICS, PBL, SBP, P)

   Objectives:
   1. To understand the mechanisms of perinatal HIV transmission to infants and the factors associated with the degree of risk of HIV transmission.
   2. To understand the approach and available modalities to preventing mother-to-child transmission of HIV in the prenatal, peripartum, and postnatal periods.
   3. To learn the dose and duration of AZT prophylaxis in infants, and when to use alternative antiretroviral agents (e.g. nevirapine).
   4. To recognize and test for potential toxicities associated with AZT therapy in infants.
   5. To learn the appropriate testing (HIV DNA PCR) and testing intervals for infants exposed to HIV, and the criteria for determining that an infant is HIV-negative.

2. To gain experience in the outpatient management of congenital and perinatal infections, including CMV, toxoplasmosis, and HSV (competencies taught – PC, MK, ICS, PBL, SBP, P)

   Objectives:
   1. To understand the mechanisms of transmission of perinatal and congenital infections, and factor associated with the likelihood of transmission (e.g. primary vs. secondary infection in the mother, prolonged rupture of membranes).
   2. To understand the approach to work-up and testing modalities for diagnosing congenital infections in infants.
   3. To understand the approach to treatment of congenital infections in infants.
   4. To recognize and test for potential toxicities associated with treatment of congenital infections.
   5. To learn to appropriately counsel families regarding recurrence of infection, long-term sequelae, and infection control issues in the home or childcare settings.

3. To gain experience in the outpatient evaluation and management of infectious diseases in children with immunocompromising conditions or treatments (competencies taught – PC, MK, ICS, PBL, P)

   Objectives:
   1. To recognize the differences in approach to managing immunocompromised patients in the outpatient setting compared with inpatient consultations.
   2. To learn how to evaluate, test, and treat for common pediatric infectious diseases diagnoses in immunocompromised patients.
   3. To recognize the unusual presentations associated with infectious diseases in immunocompromised hosts.
   4. To learn to effectively communicate with community providers regarding patients seen in the ICH ID clinic, through both verbal follow-up phone calls and written consultation notes.

Competencies taught: Patient Care (PC), Medical Knowledge (MK), Interpersonal and Communication Skills (ICS), Practice Based Learning (PBL), Professionalism (P), Systems-Based Practice (SBP)

Additional teaching methods: HIV clinical care meeting, General ID weekly case conference, Joint ID weekly conference, Immunocompromised Hosts weekly conference, HIV core lecture series

Evaluations: Fellows will be evaluated by an outpatient attending evaluation.
Microbiology

Goals:
1. To gain understanding of the functions of the microbiology laboratory (competencies taught – MK, PBL, SBP)
2. To gain experience in culture methods, serologic testing methods, and molecular testing methods for bacteria, viruses, fungi, and parasites (competencies taught – MK, PBL, SBP)

Objectives:
1. To learn the differences and when to utilize different culture media
2. To learn how to perform and interpret gram stains and other tests used to distinguish different types of bacteria.
3. To learn to distinguish different parasites in blood smears.
4. To understand the use of germ tube test to distinguish between candida albicans and other candida species.
5. To learn how to use molecular testing, such as PCR, for identification of viruses.
3. To develop the ability to interpret susceptibility testing results using CLSI guidelines (competencies taught – PC, MK, PBL, SBP)
4. To gain knowledge regarding safety issues in the laboratory, including handling of infectious agents, chemicals, and possible agents of bioterrorism (competencies taught – PC, MK, PBL, SBP)

Competencies taught: Patient Care (PC), Medical Knowledge (MK), Interpersonal and Communication Skills (ICS), Practice Based Learning (PBL), Professionalism (P), Systems-Based Practice (SBP)

Additional teaching methods: General ID weekly case conference, Joint ID weekly conference, Immunocompromised Hosts weekly conference, Weekly plate rounds

Evaluations: Fellows will be evaluated by monitoring of attendance and verbal feedback from the rotation director.
Boston University Training Program in Pediatric Infectious Diseases (Goals as provided by BMC)

1. Pediatric Infectious Diseases Consultation Service Curriculum

   First Year of Fellowship – the primary goals of the first year of fellowship are to focus on increasing knowledge in the field of infectious diseases, and to begin the process of assuming leadership of a team by starting to teach residents and medical students under the supervision of the attending physician. The fellow will see and discuss each patient on the service, whether or not they have also been seen by a resident or student, before rounding with the attending, and will review the written notes on all patients.

   **Goals**

   1. By the completion of his or her training, a fellow should be familiar with the diagnosis and management of most types of skin and soft tissue, bone and joint, central nervous system, respiratory, gastrointestinal, genitourinary, and post-operative infections, as well as infections in immunocompromised individuals. Fellows will also learn to recognize the major non-infectious processes commonly mistaken for infections.

   2. Fellows will sharpen those historical and physical examination skills essential to the diagnosis of infectious processes. Fellows will learn the judicious use and interpretation of microbiologic and other diagnostic studies. Fellows will become familiar with the pharmacodynamics, spectrum, toxicities, and drug interactions of antimicrobials. Emphasis will be placed upon the reasoned prescription of appropriate and cost-effective antimicrobial agents.

   3. Fellows on these rotations will learn to use appropriate medical and scientific literature (printed and electronic) in order to address personal knowledge deficits and to gain insight into diagnostic and therapeutic problems. They will learn to present such data cogently in both work rounds and formal case conferences.

   4. Fellows will be expected to communicate effectively with patients, support staff, medical students, and other physicians. They should be able to understand and respond to the unique cognitive and personal needs of all of these groups. They should also be able to instruct members of each group about the pathogenesis, clinical course, diagnosis, treatment, and prognosis of infections.

   **Teaching Methods**

   Fellows will be responsible for the day-to-day function of the ID consultation service under the supervision of the consult attending. The fellow will participate in a team that may include one or more residents, medical students, and/or clinical pharmacists. The fellow may see new consultations or assign them to another member of the team. In either case, he/she must know significant history, pertinent examination findings, and relevant laboratory studies prior to the presentation of cases to the consult attending. After this presentation, and once a management plan has been determined, the ID fellow or his/her designee will be responsible for communicating that plan to consulting services and assisting in its implementation. The ID team will follow the clinical course of all service patients until such time as the consult-requesting physicians and the consult team jointly agree that further input will not be useful.

   Fellows on the ID consult service will have the opportunity to attend all Microbiology Plate Rounds and ID clinical conferences occurring at the time of the rotation. With the direction of the consult attendings, fellows on the consultation service will be responsible for identifying, preparing, presenting, and discussing instructive clinical material at some of these conferences. At the request of appropriate representatives, fellows may also participate in clinical conferences organized by other medical services, nursing, or laboratory services.

   **References**

   Fellows have available to them a selection of textbooks and internet-based resources on general pediatrics and pediatric infectious diseases and are encouraged to make use of them. A standard source is the “Red Book”: the American Academy of Pediatrics Report of the Committee on Infectious Diseases. It is expected that fellows will consult frequently a broad range of journals, medical texts, and other sources of information in order to address clinical questions.

2. International Clinic Rotation Curriculum
Goals
1. Develop familiarity with all aspects of pre-travel consultation including vaccines, malaria and other vector-borne disease prevention, and other measures to maintain health during travel.
2. Develop experience with the components of initial health assessments of newly arrived immigrants with a specific focus on infectious diseases.
3. Gain experience in evaluating illness following international travel.

Objectives
1. Gain experience with the indications, efficacy, and adverse events of travel vaccines including hepatitis A and B, typhoid, Japanese encephalitis, rabies, and yellow fever vaccines.
2. Refresh understanding of indications, efficacy, and adverse events of recommended pediatric, adolescent, and adults vaccines, including catch-up immunization and modifications for pre-travel preparation.
3. Become familiar with sources of information about pre-travel, routine, and catch-up immunization.
4. Develop an approach to the evaluation and management of patients will illness following international travel.
5. Gain experience with some aspects of immigrant medicine.

Teaching Methods
Fellows will attend this clinic during their first year of fellowship. The fellow will attend one session weekly. Fellows will be supervised by one of the infectious diseases attendings.

The patient population is varied and includes 4 types of patients: refugees/asylees presenting for health assessments, international travelers, tropical medicine consultation, and rarely, internationally adopted children for infectious disease evaluation. Patients come from a wide variety of ethnic, cultural, and linguistic backgrounds.

During the rotation fellows are expected to prepare for the patient by reviewing any available clinical information before the session, take patient histories and be able to target these appropriately for new immigrants, travelers, or individuals with post-travel illness, perform physical examinations when needed, assess need for and provide appropriate immunizations, assess need for further diagnostic work-up or referral, prescribe medications for infectious disease conditions or prevention of travel-related illness, work with interpreters in person or by telephone, recommend appropriate follow-up, be able to make succinct and complete case presentations, and complete charting and other administrative tasks. Fellows will work with a team that consists of nurses, nurse practitioners, physicians, trained medical interpreters, and other personnel experienced in working with this patient population.

3. Pediatric HIV Curriculum

Goals
1. Mastery in the diagnosis and treatment of pediatric HIV infection and the opportunistic infections associated with immunodeficiency.
2. Mastery of the assessment and management of newborn infants born to women with HIV and the choice of antiretrovirals used to prevent maternal to child transmission of HIV.
3. Recognition and management of the complications seen with the long-term treatment of HIV, and the toxicities associated with specific antiretroviral therapies.
4. Management of both occupational and non-occupational exposures to HIV.

Objectives
1. Understanding of the pathophysiology of HIV infection and the mechanism of CD4 cell depletion
2. First line antiretroviral regimens including pharmacokinetics, proper utilization and toxicities
3. Understanding the utility of the genotypic and phenotypic assays for antiviral resistance
4. Understanding the management of both occupational and non-occupational exposures to HIV.
5. Follow up of HIV exposed babies and the appropriate use of prophylaxis and timing of diagnostic measures to assess infection.
6. Management of the multidisciplinary nature of HIV infection

**Teaching Methods**

Fellows will work in the HIV clinic during their first year of training. In addition, each will spend 6 months in ASI Clinic (Adolescent Special Immunology Clinic).

The fellows will each participate in all aspects of clinic activities, including pre clinic conference when the management for each expected patient is discussed fully. With their preceptor they will take part in all decisions regarding initiation of antiretroviral therapy. If patients need to have therapy changed, they will also be involved in the interpretation of genotype and phenotype testing, and the choice of a new regimen. Although the fellow will participate in all aspects of patient management, the degree of autonomy and responsibility will increase as the fellow progresses through levels of training.

While participating in the HIV Clinic, fellows will be expected to take patient histories, perform physical examinations, and order and interpret relevant diagnostic studies in addition to the prescription of appropriate therapy.

While participating in the ASI Clinic, in addition to the above responsibilities, the fellow will also participate in the treatment of any sexually transmitted disease, and will perform genital and vaginal exams as appropriate. Assessment of HPV and cervical or anal cancer risk will also be included in the assessments.

Each fellow will be assigned up to two patients at a time to follow over their fellowship. They will have primary responsibility for the care and management of these patients in coordination with the rest of the multidisciplinary team. Degree of autonomy will be consistent with the level of training.

In addition to clinic responsibilities, the fellows will consult on all patients with HIV who are admitted to the inpatient ward. These patients are on the ID service, and so all aspects of their care will be coordinated by the fellow and the attending on service.

Lectures and case discussions are also part of the routine activities of the division. Formal didactic presentations on HIV care are scheduled weekly throughout the academic year.

4. STI Clinic Curriculum

**Goals**

1. Mastery in the diagnosis and treatment of sexually transmitted infections (STIs)
2. Appreciation of the limitations of current diagnostic and treatment modalities

**Specific Objectives**

1. Understanding the pathophysiology of the sexually-transmitted infectious agents and the immunologic responses
2. Acquiring familiarity with the broad range of clinical presentations of the various STIs
3. Understanding how pregnancy, immunosuppression, and HIV may alter the clinical presentation of STIs
4. Performing point of care laboratory tests for sexually transmitted diseases
5. Utilizing current microbiologic and serologic methods to confirm diagnoses, and understanding the limitations (sensitivity, specificity, positive predictive value) of the current diagnostic methodologies
6. Becoming familiar with the current Centers for Disease Control (CDC) treatment guidelines for individual STIs
7. Becoming familiar with the management of STIs and their complications in special circumstances, e.g., pregnancy, medication allergy, and HIV coinfection
8. Having a basic appreciation of the epidemiologic and educational role of the STI clinician
9. Critically evaluating new diagnostic and treatment modalities
10. Being able to generate testable hypotheses in the field of STI research
Specific Skills
1. Obtaining a thorough history, including sexual history and epidemiologic data
2. Performing adequate male genital and female genital/pelvic examinations
3. Basic laboratory skills, including performing and interpreting
   - Proper sampling, collection, and storage of specimens
   - Gram stains
   - Vaginal specimen wet mount and KOH preparations
   - Darkfield microscopy
4. Appropriate use and interpretation of nucleic acid amplification methodologies in diagnosis of bacterial STIs
5. Appropriate use and interpretation of serologic testing in diagnosis of syphilis, genital herpes, Lymphgranuloma venereum, Hepatitis B, and HIV
6. Diagnosis and management of urethritis, mucopurulent cervicitis, genital ulcer diseases, inguinal adenitis, complicated genital tract infections in males and females, bacterial vaginosis, anogenital candidasis, HPV-associated genital tract syndromes, and ectoparasitosis
7. STI prevention and counseling
8. HIV counseling and testing

Principal Learning and Teaching Activities during all aspects of rotation
- Consult Rounds, inpatient (CR)
- International Clinic (IC)
- Journal Club (JC)
- CID Clinic Conferences, (CIDC)
- Core Lecture Series (CL)
- AIDS Conference (AIDSC)
- ID Conference, weekly (IDC)
- Research Conference (RC) (e.g., Micro/ID Research Seminar)
- Meet-the-Professor Lecture Series (MP)
- Microbiology Rounds (MR)
- Introductory Lecture Series (IL)
- Travel Medicine Lecture Series (TMC)
- Morbidity and Mortality Report (MM)
- Pediatric Grand Rounds (GR)
- Pediatric Case of the Week (COW)
- Antimicrobial Stewardship Rounds (ASR)
- Fellow-Director Meetings (FDM)
- Infection Control Committee Meetings (IC)
- Meetings of the Antibiotic Subcommittee of the P and T Committee (ASC)

Objectives and Principal Educational Goals by Relevant Competency
The objectives and principal educational goals for the BMC ID Consult rotation are indicated for each of the six ACGME competencies. The most relevant learning activities for each goal are indicated using the legend above.

1. Competency: Patient Care
   Objectives: 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 are expected to learn the practice of health promotion, disease prevention, diagnosis, care, and treatment of children from infancy through adolescence to old age, during health and all stages of illness.
   
   Principal Educational Goals
   - Interview patients more skillfully to collect relevant data
   - Examine patients more skillfully with the examination focused on relevant organ systems
• Define and prioritize patients' medical problems in order to generate an appropriate differential diagnosis
• Development treatment and management plans to advise the consulting service
• Assume increased responsibility for development of management plans, teaching, and supervision of residents and students with advanced level of training.

Learning activities to fulfill these goals: CR, IDC, MR, MM

2. Competency: Medical Knowledge
   **Objectives:** 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 are expected to learn the scientific method of problem solving, evidence-based decision making, a commitment to lifelong learning, and an attitude of caring that is derived from humanistic and professional values.

   Principal Educational Goals
   • Expand applicable knowledge base of basic and clinical sciences underlying the care of medical inpatients
   • Access and critically evaluate current medical information and scientific evidence relevant to patient care
   • Assume increased responsibility for self-learning and review of appropriate supplemental materials with advancing levels of training.

   Learning activities to fulfill these goals: CR, JC, CL, AIDSC, IDC, RC, MR, IL, GR, COW, ASR

3. Competency: Practice-Based Learning and Improvement
   **Objectives:** Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to improve patient care based on constant self-evaluation and life-long learning. Fellows are expected to develop skills and habits to be able to meet the following goals: identify strengths, deficiencies, and limits in one’s knowledge and expertise; set learning and improvement goals; identify and perform appropriate learning activities; systematically analyze practice using quality improvement methods and implement changes with the goal of practice improvement; incorporate formative evaluation feedback into daily practice; locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems; use information technology to optimize learning; and participate in the education of patients, families, students, fellows, and other health professionals.

   Principal Educational Goals
   • Identify and acknowledge gaps in personal knowledge and skills in the consultative care of hospitalized patients
   • Develop and implement strategies for filling gaps in knowledge and skills
   • Assume increased responsibility for individualized learning with advanced levels of training.

   Learning activities to fulfill these goals: CR, JC, IDC, MR, MM, ASR, FDM

4. Competency: Interpersonal Skills and Communication
   **Objectives:** 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 are expected to: communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds; communicate effectively with physicians, other health professionals, and health related agencies; work effectively as a member or leader of a health care team or other professional group; act in a consultative role to other physicians and health professionals; and maintain comprehensive, timely, and legible medical records, if applicable.

   Principal Educational Goals
   • Communicate effectively with patients and families
• Communicate effectively with physician colleagues at all levels
• Communicate effectively with all non-physician members of the health care team to assure comprehensive and timely care of hospitalized patients
• Present patient information concisely and clearly, verbally and in writing
• Teach colleagues effectively
• Assume increased responsibility for communication with patients, colleagues, and other co-workers with advancing level of training.

Learning activities to fulfill these goals: CR, IDC, MR, FDM

5. Competency: Professionalism
   Objectives: Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Fellows are expected to demonstrate: compassion, integrity, and respect for others; responsiveness to patient needs that supersedes self-interest; respect for patient privacy and autonomy; accountability to patients, society, and the profession; and sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

   Principal Educational Goal
   • Behave professionally toward all patients, families, members of the health care team, and other colleagues

   Learning activities to fulfill this goal: CR, IDC, MR, FDM

6. Competency: Systems-Based Practice
   Objectives: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Fellows are expected to: work effectively in various health care delivery settings and systems relevant to their clinical specialty; coordinate patient care within the health care system relevant to their clinical specialty; incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate; advocate for quality patient care and optimal patient care systems; work in multidisciplinary teams to enhance patient safety and improve patient care quality; and participate in identifying system errors and implementing potential systems solutions.

   Principal Educational Goals
   • Understand and utilize the multidisciplinary resources necessary to care optimally for patients. Collaborate with other members of the health care team to assure comprehensive patient care. Use evidence-based, cost-conscious strategies in the care of patients
   • Demonstrate increased understanding of the interconnections within the healthcare system and participate to a greater extent in quality improvement and hospital committees with advancing level of training.

   Learning activities to fulfill these goals: CR, IDC, JC, COW, ASR, FDM, IC, ASC

Fellow Evaluations
At the end of each rotation, fellows will be evaluated in writing (in New Innovations) by all attending physicians with whom they have worked during their 2-week rotation. Written evaluations are also completed by medical students. Forms use the six ACGME competencies as the basis for evaluation. An attending physician should meet with the fellow near the end of each rotation to review and discuss the substance of the written evaluation. In the event of an unsatisfactory evaluation, the fellow will be notified in a timely manner. Particular concerns may be discussed with the fellow’s program director at BCH.
Beth Israel Deaconess Medical Center Training Program in Infectious Diseases (Goals as provided by BIDMC)

The ACGME Core Competencies in medicine are an essential component of the Common Program Requirements in graduate medical education. Each Infectious Diseases fellow will be expected to be knowledgeable regarding what these competencies are, and each fellow should understand that he/she will be systematically and regularly evaluated during training on the mastery of these competencies.

1. Patient Care that is compassionate, appropriate and effective for the treatment of health programs and the promotion of health;
2. Medical Knowledge about established and evolving biomedical, clinical, and cognate sciences, as well as the application of this knowledge to patient care in the field of Infectious Diseases;
3. Practice-based learning and improvement that involves the investigation and evaluation of care for their patients, the appraisal and assimilation of scientific evidence, and improvements in patient care;
4. Interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals;
5. Professionalism, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to patients of diverse backgrounds;
6. Systems-based practice, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Year 1 (Clinical Year) General Goals:
1. To become proficient in the 6 Core Competencies listed above.
2. To become knowledgeable in the broad range of infectious diseases which afflict humans, particularly those whereupon other internists, medical subspecialists, surgeons and surgical subspecialists are likely to request consultative assistance.
3. To be knowledgeable in the diagnostic modalities available to evaluate the infected patient including microbiologic procedures (cultures and smears), serologic testing (antigen and antibody detection) and imaging techniques.
4. To become knowledgeable about the broad range of microorganisms that infect humans including bacteria, viruses, parasites and fungi.
5. To become knowledgeable about infections occurring in special settings, and among special populations including patients in intensive care units (medical & surgical), solid organ transplant recipients, bone marrow transplant patients, patients undergoing cancer and other immunocompromising therapies, patients with primary immunodeficiency states, and patients with HIV infection.
6. To become knowledgeable about and competent in the prevention and treatment of infectious diseases encountered in pursuit of goals #1, 2, 3, and 4, including the cost effective use of antimicrobial agents.
7. To become knowledgeable in the humanistic and ethical aspects of infectious disease care including those encountered in end of life situations.

Fellow Evaluations
Fellows are evaluated by the attending with whom they spent the most time during their 4-week rotation at BIDMC.
ID Fellow Rotation in Infection Prevention and Control/Antimicrobial Stewardship (Goals as provided by rotation)

**Rotation Directors:**
Thomas J. Sandora, MD MPH (Hospital Epidemiologist)
Gail Potter-Bynoe, BS CIC (Manager, Infection Prevention and Control)

**Schedule:** Activities will occur Monday – Friday between 9 am and 5 pm. Each fellow will have an individualized schedule based on the meetings or activities occurring during their block (see individual schedules). There will be time during the block that can be used for other activities (e.g. research planning).

**Learning Objectives** *(Competencies met by each objective in parentheses: PC-Patient Care, MK-Medical Knowledge, IPC-Interpersonal Skills and Communication, P-Professionalism, SBP- Systems-Based Practice, PBL-Practice-Based Learning)*

1. Describe the organization of an Infection Prevention and Control Program and summarize the roles of a hospital epidemiologist and an infection preventionist (SBP)
2. Identify how surveillance data are acquired, analyzed, and shared within a hospital (SBP)
3. Define the common modes of transmission of organisms that are spread within healthcare settings (MK)
4. Discuss hand hygiene guidelines and the rationale for alcohol-based hand sanitizer as the preferred hand hygiene agent in healthcare settings (PC, MK)
5. Summarize isolation precautions categories and apply them correctly to specific infections (PC, MK, SBP)
7. Perform a root cause analysis for healthcare-associated infection (PBL, SBP, MK, IPC)
8. Identify basic epidemiologic principles of outbreak investigation and apply them to a clinical scenario (MK, PBL)
9. Explain the differences between low-level disinfection, high-level disinfection, and sterilization and give examples of scenarios in which each is required (MK)
10. Identify the role of the environment in the transmission of infections and describe aspects of facility design that can prevent healthcare-associated infections (PC, MK, SBP)
11. Discuss the importance of antimicrobial stewardship and describe the mechanisms used by hospitals to optimize antimicrobial use (MK, SBP)

**Instructional Strategies:**
1. Review surveillance data and adjudicate cases using CDC/NHSN surveillance definitions in conjunction with infection preventionists
2. Attend hospital committee meetings where HAI data are reviewed and infection prevention activities are discussed
3. Participate in outbreak investigation and/or communicable disease exposure management, if applicable during the rotation
4. Participate in hand hygiene or isolation precaution audits, infection control tracers, and/or environment of care swat rounds
5. Review antimicrobial stewardship efforts in conjunction with infectious diseases pharmacists and a hospital epidemiologist
6. Read core materials on provided topics (e.g. compendium of evidence-based strategies to prevent device- and procedure-associated infections including CLABS, VAP, CAUTI, and SSI; CDC hand hygiene guideline; SHEA/IDSA guideline on *C. difficile* infection)
7. Prepare a teaching session on a relevant topic to be delivered to infection prevention and control liaison program participants at some point during the year

**Evaluation Strategies:**
1. Verbal feedback (formative) during rotation
2. Written evaluation (summative) at end of rotation
ACGME Program Requirements for Graduate Medical Education in Pediatric Infectious Diseases

Sections I-VI General Pediatric Subspecialty Program Requirements
Sections VII-VIII Pediatric Infectious Diseases Program Requirements

ACGME approved: June 10, 2008; effective: July 1, 2009
ACGME approved focused revision: September 30, 2012; effective: July 1, 2013
ACGME Program Requirements for Graduate Medical Education in the Subspecialties of Pediatrics

ACGME approved major revision: September 25, 2016; effective: July 1, 2017
Revised Common Program Requirements effective: July 1, 2017
ACGME Program Requirements for Graduate Medical Education
in the Subspecialties of Pediatrics

Common Program Requirements are in BOLD

Where applicable, text in italics describes the underlying philosophy of the requirements in that section. These philosophic statements are not program requirements and are therefore not citable.

In addition to complying with the requirements in this document, each program must comply with the Program Requirements for the respective subspecialty, which may exceed the minimum requirements set forth here. *(Core)*

Introduction

Int.A. Residency is an essential dimension of the transformation of the medical student to the independent practitioner along the continuum of medical education. It is physically, emotionally, and intellectually demanding, and requires longitudinally-concentrated effort on the part of the resident.

The specialty education of physicians to practice independently is experiential, and necessarily occurs within the context of the health care delivery system. Developing the skills, knowledge, and attitudes leading to proficiency in all the domains of clinical competency requires the resident physician to assume personal responsibility for the care of individual patients. For the resident, the essential learning activity is interaction with patients under the guidance and supervision of faculty members who give value, context, and meaning to those interactions. As residents gain experience and demonstrate growth in their ability to care for patients, they assume roles that permit them to exercise those skills with greater independence. This concept—graded and progressive responsibility—is one of the core tenets of American graduate medical education. Supervision in the setting of graduate medical education has the goals of assuring the provision of safe and effective care to the individual patient; assuring each resident’s development of the skills, knowledge, and attitudes required to enter the unsupervised practice of medicine; and establishing a foundation for continued professional growth.

Int.B. Duration of Educational Experience

Unless specified otherwise in the subspecialty-specific Program Requirements, the educational program must be 36 months in length. *(Core)*

I. Institutions

I.A. Sponsoring Institution

One sponsoring institution must assume ultimate responsibility for the program, as described in the Institutional Requirements, and this responsibility extends to fellow assignments at all participating sites. *(Core)*
The sponsoring institution and the program must ensure that the program director has sufficient protected time and financial support for his or her educational and administrative responsibilities to the program. \(^{(Core)}\)

I.A.1. An accredited pediatric subspecialty program must exist in conjunction with and be an integral part of a core pediatric residency program, and must be sponsored by the same ACGME-accredited Sponsoring Institution. \(^{(Core)}\)

I.A.1.a) The presence of a subspecialty program must not adversely affect the education of pediatric residents. \(^{(Core)}\)

I.A.1.b) The subspecialty program should be geographically proximate to the core pediatric residency program. \(^{(Detail)}\)

I.A.2. Program leadership, including the program director and associate program director(s), must be provided with a minimum combined total of 20-35 percent full time equivalent (FTE) protected time for the administration of the program (not including scholarly activity), depending on the size of the program, as follows. \(^{(Core)}\)

<table>
<thead>
<tr>
<th>Program Size</th>
<th>% FTE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 fellows</td>
<td>20%</td>
</tr>
<tr>
<td>4-6 fellows</td>
<td>25%</td>
</tr>
<tr>
<td>7-9 fellows</td>
<td>30%</td>
</tr>
<tr>
<td>≥ 10 fellows</td>
<td>35%</td>
</tr>
</tbody>
</table>

I.A.3. The Sponsoring Institution must provide support for a program coordinator(s) and other support personnel required for operation of the program. \(^{(Core)}\)

I.B. Participating Sites

I.B.1. There must be a program letter of agreement (PLA) between the program and each participating site providing a required assignment. The PLA must be renewed at least every five years. \(^{(Detail)}\)

The PLA should:

I.B.1.a) identify the faculty who will assume both educational and supervisory responsibilities for fellows; \(^{(Detail)}\)

I.B.1.b) specify their responsibilities for teaching, supervision, and formal evaluation of fellows, as specified later in this document; \(^{(Detail)}\)

I.B.1.c) specify the duration and content of the educational experience; and, \(^{(Detail)}\)
I.B.1.d) state the policies and procedures that will govern fellow education during the assignment. (Detail)

I.B.2. The program director must submit any additions or deletions of participating sites routinely providing an educational experience, required for all fellows, of one month full time equivalent (FTE) or more through the Accreditation Council for Graduate Medical Education (ACGME) Accreditation Data System (ADS). (Core)

I.B.3. Any site providing six months or more of required rotations should be approved by the Review Committee. (Detail)

II. Program Personnel and Resources

II.A. Program Director

II.A.1. There must be a single program director with authority and accountability for the operation of the program. The sponsoring institution's GMEC must approve a change in program director. (Core)

II.A.1.a) The program director must submit this change to the ACGME via the ADS. (Core)

II.A.2. The program director should continue in his or her position for a length of time adequate to maintain continuity of leadership and program stability. (Detail)

II.A.3. Qualifications of the program director must include:

II.A.3.a) requisite specialty expertise and documented educational and administrative experience acceptable to the Review Committee; (Core)

II.A.3.b) current certification in the subspecialty by the American Board of Pediatrics, or subspecialty qualifications that are acceptable to the Review Committee; (Core)

II.A.3.b).(1) Qualifications other than subspecialty certification by the American Board of Pediatrics (ABP) will be considered only in exceptional circumstances. (Detail)

II.A.3.c) current medical licensure and appropriate medical staff appointment; and, (Core)

II.A.3.d) a record of ongoing involvement in scholarly activities, including peer-review publications and mentoring (i.e., guiding fellows in the acquisition of competence in the clinical, teaching, research, and advocacy skills pertinent to the discipline). (Core)

II.A.4. The program director must administer and maintain an educational environment conducive to educating the fellows in each of the
ACGME competency areas. (Core)

The program director must:

II.A.4.a) oversee and ensure the quality of didactic and clinical education in all sites that participate in the program; (Core)

II.A.4.b) approve a local director at each participating site who is accountable for fellow education; (Core)

II.A.4.c) approve the selection of program faculty as appropriate; (Core)

II.A.4.d) evaluate program faculty; (Core)

II.A.4.e) approve the continued participation of program faculty based on evaluation; (Core)

II.A.4.f) monitor fellow supervision at all participating sites; (Core)

II.A.4.g) prepare and submit all information required and requested by the ACGME; (Core)

II.A.4.g).(1) This includes but is not limited to the program application forms and annual program updates to the ADS, and ensure that the information submitted is accurate and complete. (Core)

II.A.4.h) ensure compliance with grievance and due process procedures as set forth in the Institutional Requirements and implemented by the sponsoring institution; (Detail)

II.A.4.i) provide verification of fellowship education for all fellows, including those who leave the program prior to completion; (Detail)

II.A.4.j) implement policies and procedures consistent with the institutional and program requirements for fellow duty hours and the working environment, including moonlighting; (Core)

and, to that end, must:

II.A.4.j).(1) distribute these policies and procedures to the fellows and faculty; (Detail)

II.A.4.j).(2) monitor fellow duty hours, according to sponsoring institutional policies, with a frequency sufficient to ensure compliance with ACGME requirements; (Core)

II.A.4.j).(3) adjust schedules as necessary to mitigate excessive service demands and/or fatigue; and, (Detail)
II.A.4.j).(4) if applicable, monitor the demands of at-home call and adjust schedules as necessary to mitigate excessive service demands and/or fatigue. (Detail)

II.A.4.k) monitor the need for and ensure the provision of back up support systems when patient care responsibilities are unusually difficult or prolonged; (Detail)

II.A.4.l) comply with the sponsoring institution’s written policies and procedures, including those specified in the Institutional Requirements, for selection, evaluation and promotion of fellows, disciplinary action, and supervision of fellows; (Detail)

II.A.4.m) be familiar with and comply with ACGME and Review Committee policies and procedures as outlined in the ACGME Manual of Policies and Procedures; (Detail)

II.A.4.n) obtain review and approval of the sponsoring institution's GMEC/DIO before submitting information or requests to the ACGME, including: (Core)

II.A.4.n).(1) all applications for ACGME accreditation of new programs; (Detail)

II.A.4.n).(2) changes in fellow complement; (Detail)

II.A.4.n).(3) major changes in program structure or length of training; (Detail)

II.A.4.n).(4) progress reports requested by the Review Committee; (Detail)

II.A.4.n).(5) requests for increases or any change to fellow duty hours; (Detail)

II.A.4.n).(6) voluntary withdrawals of ACGME-accredited programs; (Detail)

II.A.4.n).(7) requests for appeal of an adverse action; and, (Detail)

II.A.4.n).(8) appeal presentations to a Board of Appeal or the ACGME. (Detail)

II.A.4.o) obtain DIO review and co-signature on all program application forms, as well as any correspondence or document submitted to the ACGME that addresses: (Detail)

II.A.4.o).(1) program citations, and/or, (Detail)

II.A.4.o).(2) request for changes in the program that would have significant impact, including financial, on the program
II.A.4.p) ensure that the fellows are mentored in their development of clinical, educational, and administrative skills; (Core)

II.A.4.q) ensure that each fellow’s experience in such procedures be documented and that such documentation is available for review; (Core)

II.A.4.r) coordinate, with the core and subspecialty program directors, the incorporation of the competencies into fellowship education in order to foster consistent expectations with regard to fellows’ achievement of them, and for faculty members with regard to evaluation processes; and, (Core)

II.A.4.s) maintain documentation of meetings that describe ongoing interaction among pediatric subspecialty and core program directors. (Core)

II.A.4.s).(1) These meetings should take place at least semi-annually. (Detail)

II.A.4.s).(2) These meetings should address a departmental approach to common educational issues and concerns (e.g., core curriculum, competencies, evaluation). (Detail)

II.B. Faculty

II.B.1. At each participating site, there must be a sufficient number of faculty with documented qualifications to instruct and supervise all fellows at that location. (Core)

The faculty must:

II.B.1.a) devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities; and to demonstrate a strong interest in the education of fellows; and, (Core)

II.B.1.a).(1) In addition to the subspecialty program director, there must be at least one other member of the faculty who is qualified in the subspecialty. (Specific details are included in the related subspecialty-specific section of the Requirements.) (Core)

II.B.1.b) administer and maintain an educational environment conducive to educating fellows in each of the ACGME competency areas. (Core)

II.B.2. The physician faculty must have current certification in the subspecialty by the American Board of Pediatrics, or possess
qualifications judged acceptable to the Review Committee. (Core)

II.B.2.a) Acceptable qualifications for the required key subspecialty faculty include: (Core)

II.B.2.a).(1) certification, if eligible, by the appropriate member board of the American Board of Medical Specialties (ABMS); or, (Core)

II.B.2.a).(2) if ineligible for certification, documented subspecialty training and peer-reviewed publications in the field, with evidence of active participation in applicable local and national professional societies. (Detail)

II.B.2.b) Teaching and consultant faculty members in the full range of pediatric subspecialties and in other related disciplines must be available as specified in the subspecialty-specific requirements. (Core)

II.B.2.b).(1) The faculty should include an anesthesiologist(s), pathologist(s), and radiologist(s) who have substantial experience with pediatric problems and who interact with the fellows, as well as a medical geneticist(s), child neurologist(s), child and adolescent psychiatrist(s), pediatric surgeon(s), and surgical subspecialists, as appropriate to the subspecialty. (Detail)

II.B.3. The physician faculty must possess current medical licensure and appropriate medical staff appointment. (Core)

II.B.4. The nonphysician faculty must have appropriate qualifications in their field and hold appropriate institutional appointments. (Core)

II.B.5. The faculty must establish and maintain an environment of inquiry and scholarship with an active research component. (Core)

II.B.5.a) The faculty must regularly participate in organized clinical discussions, rounds, journal clubs, and conferences. (Detail)

II.B.5.b) Some members of the faculty should also demonstrate scholarship by one or more of the following:

II.B.5.b).(1) peer-reviewed funding; (Detail)

II.B.5.b).(2) publication of original research or review articles in peer-reviewed journals, or chapters in textbooks; (Detail)

II.B.5.b).(3) publication or presentation of case reports or clinical series at local, regional, or national professional and scientific society meetings; or, (Detail)

II.B.5.b).(4) participation in national committees or educational
II.B.5.c) Faculty should encourage and support fellows in scholarly activities. (Core)

II.B.5.d) This must include the mentoring of fellows as they apply scientific principles, epidemiology, biostatistics, and evidence-based medicine to the clinical care of patients. (Core)

II.B.5.e) Scholarly activities should be in a field related to the subspecialty, such as basic science, clinical, health services, health policy, quality improvement, or education. (Detail)

II.B.5.f) To provide an appropriate environment for the fellows, the fellowship faculty must have a program of ongoing scholarship. (Core)

II.B.5.f).(1) This must be characterized by peer-reviewed funding and/or publications. (Core)

II.B.5.f).(2) The members of the teaching faculty must play a substantial role in conceiving and writing the funding application(s), conducting the project, collecting and analyzing data, and publishing results. (Core)

II.C. Other Program Personnel

The institution and the program must jointly ensure the availability of all necessary professional, technical, and clerical personnel for the effective administration of the program. (Core)

II.C.1. Professional personnel should include nutritionists, social workers, respiratory therapists, pharmacists, subspecialty nurses, physical and occupational therapists, child life therapists, and speech therapists with pediatric focus and experience, as appropriate to the subspecialty. (Detail)

II.D. Resources

The institution and the program must jointly ensure the availability of adequate resources for fellow education, as defined in the specialty program requirements. (Core)

II.D.1. Adequate inpatient and outpatient facilities, as specified in the requirements for each subspecialty, must be available. (Core)

II.D.1.a) These must be of sufficient size and be appropriately staffed and equipped to meet the educational needs of the program. (Core)

II.D.2. Support services must include clinical laboratories, intensive care, nutrition, occupational and physical therapy, pathology, pharmacology, mental health, diagnostic imaging, respiratory therapy, and social
II.D.3.  Patients must range in age from newborn through young adulthood, as appropriate. (Core)

II.D.4.  Adequate numbers of pediatric subspecialty patients must be available to provide a broad experience for the fellows. (Core)

II.D.4.a)  The program must maintain an appropriate balance of the number and variety of patients, the number of faculty members, and the number of fellows in the program. (Core)

II.E.  Medical Information Access

Fellows must have ready access to specialty-specific and other appropriate reference material in print or electronic format. Electronic medical literature databases with search capabilities should be available. (Detail)

III.  Fellow Appointments

III.A.  Eligibility Criteria

The program director must comply with the criteria for resident eligibility as specified in the Institutional Requirements. (Core)

III.A.1.  Eligibility Requirements – Residency Programs

III.A.1.a)  All prerequisite post-graduate clinical education required for initial entry or transfer into ACGME-accredited residency programs must be completed in ACGME-accredited residency programs, or in Royal College of Physicians and Surgeons of Canada (RCPSC)-accredited or College of Family Physicians of Canada (CFPC)-accredited residency programs located in Canada. Residency programs must receive verification of each applicant’s level of competency in the required clinical field using ACGME or CanMEDS Milestones assessments from the prior training program. (Core)

III.A.1.b)  A physician who has completed a residency program that was not accredited by ACGME, RCPSC, or CFPC may enter an ACGME-accredited residency program in the same specialty at the PGY-1 level and, at the discretion of the program director at the ACGME-accredited program may be advanced to the PGY-2 level based on ACGME Milestones assessments at the ACGME-accredited program. This provision applies only to entry into residency in those specialties for which an initial clinical year is not required for entry. (Core)

III.A.1.c)  A Review Committee may grant the exception to the eligibility requirements specified in Section III.A.2.b) for residency
programs that require completion of a prerequisite residency program prior to admission. (Core)

III.A.1.d) Review Committees will grant no other exceptions to these eligibility requirements for residency education. (Core)

III.A.2. Eligibility Requirements – Fellowship Programs

All required clinical education for entry into ACGME-accredited fellowship programs must be completed in an ACGME-accredited residency program, or in an RCPSC-accredited or CFPC-accredited residency program located in Canada. (Core)

With the exception of adolescent medicine and pediatric emergency medicine subspecialty programs, prerequisite training for entry into a pediatric subspecialty program must include the satisfactory completion of either an ACGME-accredited pediatrics or internal medicine-pediatrics combined residency, or an RCPSC-accredited pediatrics or internal medicine-pediatrics combined residency program located in Canada. (Core)

Prerequisite training for entry into an adolescent medicine subspecialty program must include the satisfactory completion of either an ACGME-accredited family medicine, internal medicine, pediatrics or combined internal medicine-pediatrics residency, a CFPC-accredited family medicine program located in Canada, or an RCPSC-accredited internal medicine or pediatrics residency program located in Canada. (Core)

Prerequisite training for entry into a pediatric emergency medicine subspecialty program must include the satisfactory completion of either an ACGME-accredited emergency medicine, pediatrics or combined internal medicine-pediatrics residency, or an RCPSC-accredited emergency medicine or pediatrics residency program located in Canada. (Core)

III.A.2.a) Fellowship programs must receive verification of each entering fellow’s level of competency in the required field using ACGME or CanMEDS Milestones assessments from the core residency program. (Core)

III.A.2.b) Fellow Eligibility Exception

A Review Committee may grant the following exception to the fellowship eligibility requirements:

An ACGME-accredited fellowship program may accept an exceptionally qualified applicant**, who does not satisfy the eligibility requirements listed in Sections III.A.2. and III.A.2.a), but who does meet all of the following additional qualifications and conditions: (Core)

III.A.2.b).(1) Assessment by the program director and fellowship
selection committee of the applicant’s suitability to enter the program, based on prior training and review of the summative evaluations of training in the core specialty; and (Core)

III.A.2.b).(2) Review and approval of the applicant’s exceptional qualifications by the GMEC or a subcommittee of the GMEC; and (Core)

III.A.2.b).(3) Satisfactory completion of the United States Medical Licensing Examination (USMLE) Steps 1, 2, and, if the applicant is eligible, 3, and; (Core)

III.A.2.b).(4) For an international graduate, verification of Educational Commission for Foreign Medical Graduates (ECFMG) certification; and, (Core)

III.A.2.b).(5) Applicants accepted by this exception must complete fellowship Milestones evaluation (for the purposes of establishment of baseline performance by the Clinical Competency Committee), conducted by the receiving fellowship program within six weeks of matriculation. This evaluation may be waived for an applicant who has completed an ACGME International-accredited residency based on the applicant’s Milestones evaluation conducted at the conclusion of the residency program. (Core)

III.A.2.b).(5).(a) If the trainee does not meet the expected level of Milestones competency following entry into the fellowship program, the trainee must undergo a period of remediation, overseen by the Clinical Competency Committee and monitored by the GMEC or a subcommittee of the GMEC. This period of remediation must not count toward time in fellowship training. (Core)

** An exceptionally qualified applicant has (1) completed a non-ACGME-accredited residency program in the core specialty, and (2) demonstrated clinical excellence, in comparison to peers, throughout training. Additional evidence of exceptional qualifications is required, which may include one of the following: (a) participation in additional clinical or research training in the specialty or subspecialty; (b) demonstrated scholarship in the specialty or subspecialty; (c) demonstrated leadership during or after residency training; (d) completion of an ACGME-International-accredited residency program.

III.A.2.c) The Review Committee for Pediatrics does allow exceptions to the Eligibility Requirements for Fellowship Programs in

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Section III.A.2. (Core)

III.A.2.d) Applicants who do not meet the eligibility criteria in Program Requirement III.A.2. must be advised in writing by the program director to consult the ABP or other appropriate board regarding their eligibility for subspecialty certification. (Core)

III.B. Number of Fellows

The program’s educational resources must be adequate to support the number of fellows appointed to the program. (Core)

III.B.1. The program director may not appoint more fellows than approved by the Review Committee, unless otherwise stated in the specialty-specific requirements. (Core)

III.C. Fellow Transfers

III.C.1. Before accepting a fellow who is transferring from another program, the program director must obtain written or electronic verification of previous educational experiences and a summative competency-based performance evaluation of the transferring fellow. (Detail)

III.C.2. A program director must provide timely verification of fellowship education and summative performance evaluations for fellows who may leave the program prior to completion. (Detail)

III.D. Appointment of Fellows and Other Learners

The presence of other learners (including, but not limited to, residents from other specialties, subspecialty fellows, PhD students, and nurse practitioners) in the program must not interfere with the appointed fellows’ education. (Core)

III.D.1. The program director must report the presence of other learners to the DIO and GMEC in accordance with sponsoring institution guidelines. (Detail)

IV. Educational Program

IV.A. The curriculum must contain the following educational components:

IV.A.1. Overall educational goals for the program, which the program must make available to fellows and faculty; (Core)

IV.A.2. Competency-based goals and objectives for each assignment at each educational level, which the program must distribute to fellows and faculty at least annually, in either written or electronic form; (Core)

IV.A.2.a) Each educational unit or major professional activity must have a curriculum associated with it. (Core)
IV.A.2.b) The competency-based goals and objectives, educational strategies, and assessment methods must align with intended outcomes of those activities. (Core)

IV.A.2.c) The curriculum should incorporate the competencies into the context of the major professional activities for which fellows should be entrusted. (Detail)

IV.A.3. Regularly scheduled didactic sessions; (Core)

IV.A.4. Delineation of fellow responsibilities for patient care, progressive responsibility for patient management, and supervision of fellows over the continuum of the program; and, (Core)

IV.A.5. ACGME Competencies

The program must integrate the following ACGME competencies into the curriculum: (Core)

IV.A.5.a) Patient Care and Procedural Skills

IV.A.5.a).(1) 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: (Outcome)

IV.A.5.a).(1).(a) must develop competence in the necessary clinical skills used in the subspecialty and provide consultation, including the ability to perform a history and physical examination, make informed diagnostic and therapeutic decisions that result in optimal clinical judgement, develop and carry out management plans, counsel patients and families, and use information technology to optimize patient care; (Outcome)

IV.A.5.a).(1).(b) must demonstrate the ability to provide transfer of care that ensures seamless transitions; (Outcome)

IV.A.5.a).(1).(c) must demonstrate the ability to develop and carry out management plans; and, (Outcome)

IV.A.5.a).(1).(d) must demonstrate the ability to provide appropriate role modeling and supervision. (Outcome)

IV.A.5.a).(2) Fellows must be able to competently perform all medical, diagnostic, and surgical procedures considered essential for the area of practice. Fellows: (Outcome)
IV.A.5.a).(2).(a) must demonstrate competence in performing and interpreting the results of laboratory tests and diagnostic procedures for use in patient care. (Outcome)

IV.A.5.a).(2).(a).(i) Fellows must acquire the necessary procedural skills and develop an understanding of their indications, risks, and limitations. (Outcome)

IV.A.5.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. Fellows: (Outcome)

IV.A.5.b).(1) must have a working understanding 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 the achievement of proficiency in teaching. (Outcome)

IV.A.5.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 life-long learning. (Outcome)

Fellows are expected to develop skills and habits to be able to meet the following goals:

IV.A.5.c).(1) identify strengths, deficiencies, and limits in one’s knowledge and expertise; (Outcome)

IV.A.5.c).(2) set learning and improvement goals; (Outcome)

IV.A.5.c).(3) identify and perform appropriate learning activities; (Outcome)

IV.A.5.c).(4) systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement; (Outcome)

IV.A.5.c).(5) incorporate formative evaluation feedback into daily practice; (Outcome)
IV.A.5.c).(6) locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems; (Outcome)

IV.A.5.c).(7) use information technology to optimize learning; (Outcome)

IV.A.5.c).(8) participate in the education of patients, families, students, fellows and other health professionals; and, (Outcome)

IV.A.5.c).(9) self-evaluate performance and incorporate assessments provided by faculty members, peers, and patients. (Outcome)

IV.A.5.c).(9).(a) This should be a component of each fellow’s individual learning plan. (Detail)

IV.A.5.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. (Outcome)

Fellows are expected to:

IV.A.5.d).(1) communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds; (Outcome)

IV.A.5.d).(2) communicate effectively with physicians, other health professionals, and health related agencies; (Outcome)

IV.A.5.d).(3) work effectively as a member or leader of a health care team or other professional group; (Outcome)

IV.A.5.d).(4) act in a consultative role to other physicians and health professionals; (Outcome)

IV.A.5.d).(5) maintain comprehensive, timely, and legible medical records, if applicable; and, (Outcome)

IV.A.5.d).(6) teach proficiently based on knowledge of the principles of adult learning, including participating effectively in curriculum development, delivery of information, provision of feedback to learners, and assessment of educational outcomes. (Outcome)

IV.A.5.d).(6).(a) Graduates should be effective in teaching both individuals and groups of learners in clinical settings, classrooms, lectures, and seminars, as
IV.A.5.e)  

**Professionalism**

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

Fellows are expected to demonstrate:

IV.A.5.e).(1)  
compassion, integrity, and respect for others; (Outcome)

IV.A.5.e).(2)  
responsiveness to patient needs that supersedes self-interest; (Outcome)

IV.A.5.e).(3)  
respect for patient privacy and autonomy; (Outcome)

IV.A.5.e).(4)  
accountability to patients, society and the profession; (Outcome)

IV.A.5.e).(5)  
sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation; (Outcome)

IV.A.5.e).(6)  
trustworthiness that makes colleagues feel secure when the fellow is responsible for the care of patients; (Outcome)

IV.A.5.e).(7)  
leadership skills that enhance team function, the learning environment, and/or the health care delivery system/environment with the ultimate intent of improving care of patients; and, (Outcome)

IV.A.5.e).(8)  
the capacity to recognize that ambiguity is part of clinical medicine and to respond by utilizing appropriate resources in dealing with uncertainty. (Outcome)

IV.A.5.f)  

**Systems-based Practice**

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. (Outcome)

Fellows are expected to:

IV.A.5.f).(1)  
work effectively in various health care delivery settings and systems relevant to their clinical specialty; (Outcome)
IV.A.5.f).(2) coordinate patient care within the health care system relevant to their clinical specialty; (Outcome)

IV.A.5.f).(3) incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate; (Outcome)

IV.A.5.f).(4) advocate for quality patient care and optimal patient care systems; (Outcome)

IV.A.5.f).(5) work in interprofessional teams to enhance patient safety and improve patient care quality; (Outcome)

IV.A.5.f).(6) participate in identifying system errors and implementing potential systems solutions; (Outcome)

IV.A.5.f).(7) participate in the administrative aspects of the subspecialty, including:

IV.A.5.f).(7).(a) knowledge of regional and national access to care, resources, workforce, and financing appropriate to the subspecialty through guided reading and discussion; and, (Outcome)

IV.A.5.f).(7).(b) organization and management of a subspecialty service within one’s own delivery system by engaging fellows as active participants in discussions (e.g., through scheduled division activities/meetings) that involve:

IV.A.5.f).(7).(b).(i) staffing a service or unit, including managing personnel and making and adhering to a schedule; (Outcome)

IV.A.5.f).(7).(b).(ii) drafting policies and procedures, leading interdisciplinary meetings and conferences, and providing in-service teaching sessions; (Outcome)

IV.A.5.f).(7).(b).(iii) proposals for hospital and community resources, including clinical, laboratory, and research space, equipment, and technology necessary for the program to provide state-of-the-art care while advancing knowledge in the field; (Outcome)

IV.A.5.f).(7).(b).(iv) business planning and practice management, including billing and coding, personnel management policies, and professional liability; (Outcome)
IV.A.5.f).(7).(b).(v) division or program development, organization, and maintenance; and, (Outcome)

IV.A.5.f).(7).(b).(vi) collaboration within (e.g., with pathology, radiology, or surgery) and beyond (e.g., participation in national specialty societies, cooperative care groups, or multi-center research) the institution as appropriate to the subspecialty. (Outcome)

IV.A.6. Curriculum Organization and Fellow Experiences

IV.A.6.a) Fellows must have a formally-structured educational program in the clinical and basic sciences related to the subspecialty. (Core)

IV.A.6.a).(1) The program must utilize didactic and practical experience. (Core)

IV.A.6.a).(2) Subspecialty conferences must occur regularly, and must involve active participation by the fellows in planning and implementation. (Core)

IV.A.6.a).(3) Fellow education must include instruction in basic and fundamental disciplines, as appropriate to the subspecialty, such as anatomy, physiology, biochemistry, embryology, pathology, microbiology, pharmacology, immunology, genetics, and nutrition/metabolism. (Core)

IV.A.6.a).(4) Fellow education must include instruction in pathophysiology of disease, reviews of recent advances in clinical medicine and biomedical research, and conferences dealing with complications and death, and the scientific, ethical, and legal implications of confidentiality and informed consent. (Core)

IV.A.6.a).(5) Bioethics must be addressed in the formal curriculum. (Core)

IV.A.6.a).(5).(a) This should include attention to physician-patient, physician-family, physician-physician/allied health professional, and physician-society relationships. (Detail)

IV.A.6.a).(6) Fellow education must include instruction in the economics of health care and current health care management issues, such as cost-effective patient care, practice management, preventive care, quality improvement, resource allocation, and clinical outcomes. (Core)

IV.A.6.b) A structured curriculum must be provided to allow fellows to participate and be assessed in the following activities:
IV.A.6.b).(1) provide for and obtain consultation from other health care providers caring for children; (Core)

IV.A.6.b).(2) contribute to the fiscally sound and ethical management of a practice (e.g., through billing, scheduling, coding, and record-keeping practices); (Core)

IV.A.6.b).(3) apply public health principles and improvement methodology to improve care for populations, communities, and systems; (Core)

IV.A.6.b).(4) lead an interprofessional health care team; (Core)

IV.A.6.b).(5) facilitate hand-overs to another health care provider; and, (Core)

IV.A.6.b).(6) lead within the subspecialty profession. (Core)

IV.A.6.c) The program must provide fellows with instruction and opportunities to interact effectively with patients, patients’ families, professional associates, and others in carrying out their responsibilities as physicians in the subspecialty. (Core)

IV.A.6.c).(1) Fellows must learn to create and sustain a therapeutic relationship with patients, and to work effectively as members or leaders of patient care teams or other groups in which they participate as a researcher, educator, health advocate, or manager. (Core)

IV.A.6.d) The fellowship program and residency program must complement and enhance one another. (Core)

IV.B. Fellows’ Scholarly Activities

IV.B.1. The curriculum must advance fellows’ knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care. (Core)

IV.B.1.a) Where appropriate, the core curriculum in scholarly activity should be a collaborative effort involving all of the pediatric subspecialty programs in the institution. (Detail)

IV.B.2. Fellows should participate in scholarly activity. (Core)

IV.B.2.a) Each fellow must design and conduct a scholarly project in his or her subspecialty area with the guidance of the fellowship director and a designated mentor. (Core)

IV.B.2.b) The program must provide a scholarship oversight committee for each fellow to oversee and evaluate his or her progress as related to scholarly activity. (Core)
IV.B.2.b).(1) Where applicable, the process of establishing fellow scholarship oversight committees should be a collaborative effort involving other pediatric subspecialty programs at the institution. (Detail)

IV.B.2.c) The scholarly experience must begin in the first year and continue for the entire period of training. (Core)

IV.B.2.c).(1) There must be adequate time for each fellow to allow for the development of requisite skills, project completion, and presentation of results to the scholarship oversight committee. (Core)

IV.B.3. The sponsoring institution and program should allocate adequate educational resources to facilitate fellow involvement in scholarly activities. (Detail)

V. Evaluation

V.A. Fellow Evaluation

V.A.1. The program director must appoint the Clinical Competency Committee. (Core)

V.A.1.a) At a minimum the Clinical Competency Committee must be composed of three members of the program faculty. (Core)

V.A.1.a).(1) The program director may appoint additional members of the Clinical Competency Committee.

V.A.1.a).(1).(a) These additional members must be physician faculty members from the same program or other programs, or other health professionals who have extensive contact and experience with the program's fellows in patient care and other health care settings. (Core)

V.A.1.a).(1).(b) Chief residents who have completed core residency programs in their specialty and are eligible for specialty board certification may be members of the Clinical Competency Committee. (Core)

V.A.1.b) There must be a written description of the responsibilities of the Clinical Competency Committee. (Core)

V.A.1.b).(1) The Clinical Competency Committee should:

V.A.1.b).(1).(a) review all fellow evaluations semi-annually; (Core)
V.A.1.b).(1).(b) prepare and ensure the reporting of Milestones evaluations of each fellow semi-annually to ACGME; and, (Core)

V.A.1.b).(1).(c) advise the program director regarding fellow progress, including promotion, remediation, and dismissal. (Detail)

V.A.2. Formative Evaluation

V.A.2.a) The faculty must evaluate fellow performance in a timely manner during each rotation or similar educational assignment, and document this evaluation at completion of the assignment. (Core)

V.A.2.b) The program must:

V.A.2.b).(1) provide objective assessments of competence in patient care and procedural skills, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice based on the specialty-specific Milestones; (Core)

V.A.2.b).(2) use multiple evaluators (e.g., faculty, peers, patients, self, and other professional staff); (Detail)

V.A.2.b).(3) document progressive fellow performance improvement appropriate to educational level; and, (Core)

V.A.2.b).(4) provide each fellow with documented semiannual evaluation of performance with feedback. (Core)

V.A.2.c) The evaluations of fellow performance must be accessible for review by the fellow, in accordance with institutional policy. (Detail)

V.A.3. Summative Evaluation

V.A.3.a) The specialty-specific Milestones must be used as one of the tools to ensure fellows are able to practice core professional activities without supervision upon completion of the program. (Core)

V.A.3.b) The program director must provide a summative evaluation for each fellow upon completion of the program. (Core)

This evaluation must:

V.A.3.b).(1) become part of the fellow’s permanent record
maintained by the institution, and must be accessible for review by the fellow in accordance with institutional policy; (Detail)

V.A.3.b).(2) document the fellow’s performance during the final period of education; and, (Detail)

V.A.3.b).(3) verify that the fellow has demonstrated sufficient competence to enter practice without direct supervision. (Detail)

V.B. Faculty Evaluation

V.B.1. At least annually, the program must evaluate faculty performance as it relates to the educational program. (Core)

V.B.2. These evaluations should include a review of the faculty’s clinical teaching abilities, commitment to the educational program, clinical knowledge, professionalism, and scholarly activities. (Detail)

V.B.3. This evaluation must include at least annual written confidential evaluations by the fellows. (Detail)

V.B.4. Faculty members must receive feedback from these evaluations. (Core)

V.C. Program Evaluation and Improvement

V.C.1. The program director must appoint the Program Evaluation Committee (PEC). (Core)

V.C.1.a) The Program Evaluation Committee:

V.C.1.a).(1) must be composed of at least two program faculty members and should include at least one fellow; (Core)

V.C.1.a).(2) must have a written description of its responsibilities; and, (Core)

V.C.1.a).(3) should participate actively in:

V.C.1.a).(3).(a) planning, developing, implementing, and evaluating educational activities of the program; (Detail)

V.C.1.a).(3).(b) reviewing and making recommendations for revision of competency-based curriculum goals and objectives; (Detail)

V.C.1.a).(3).(c) addressing areas of non-compliance with ACGME standards; and, (Detail)
V.C.1.a).(3).(d) reviewing the program annually using evaluations of faculty, fellows, and others, as specified below. (Detail)

V.C.2. The program, through the PEC, must document formal, systematic evaluation of the curriculum at least annually, and is responsible for rendering a written, annual program evaluation. (Core)

The program must monitor and track each of the following areas:

V.C.2.a) fellow performance; (Core)

V.C.2.b) faculty development; (Core)

V.C.2.c) graduate performance, including performance of program graduates on the certification examination; (Core)

V.C.2.d) program quality; and, (Core)

V.C.2.d).(1) Fellows and faculty must have the opportunity to evaluate the program confidentially and in writing at least annually, and (Detail)

V.C.2.d).(2) The program must use the results of fellows’ and faculty members’ assessments of the program together with other program evaluation results to improve the program. (Detail)

V.C.2.e) progress on the previous year’s action plan(s). (Core)

V.C.3. The PEC must prepare a written plan of action to document initiatives to improve performance in one or more of the areas listed in section V.C.2., as well as delineate how they will be measured and monitored. (Core)

V.C.3.a) The action plan should be reviewed and approved by the teaching faculty and documented in meeting minutes. (Detail)

V.C.4. At least 75 percent of the program’s graduates from the preceding six years who take the certifying examination for the first time must pass. (Outcome)

V.C.5. The same evaluation mechanisms used in the related core pediatrics residency program should be adapted for and implemented in all of the pediatric subspecialty programs that function with it. (Detail)

VI. The Learning and Working Environment

Fellowship education must occur in the context of a learning and working environment that emphasizes the following principles:
- **Excellence in the safety and quality of care rendered to patients by fellows today**

- **Excellence in the safety and quality of care rendered to patients by today’s fellows in their future practice**

- **Excellence in professionalism through faculty modeling of:**
  - the effacement of self-interest in a humanistic environment that supports the professional development of physicians
  - the joy of curiosity, problem-solving, intellectual rigor, and discovery

- **Commitment to the well-being of the students, residents/fellows, faculty members, and all members of the health care team**

**VI.A.** Patient Safety, Quality Improvement, Supervision, and Accountability

**VI.A.1.** Patient Safety and Quality Improvement

All physicians share responsibility for promoting patient safety and enhancing quality of patient care. Graduate medical education must prepare fellows to provide the highest level of clinical care with continuous focus on the safety, individual needs, and humanity of their patients. It is the right of each patient to be cared for by fellows who are appropriately supervised; possess the requisite knowledge, skills, and abilities; understand the limits of their knowledge and experience; and seek assistance as required to provide optimal patient care.

Fellows must demonstrate the ability to analyze the care they provide, understand their roles within health care teams, and play an active role in system improvement processes. Graduating fellows will apply these skills to critique their future unsupervised practice and effect quality improvement measures.

*It is necessary for fellows and faculty members to consistently work in a well-coordinated manner with other health care professionals to achieve organizational patient safety goals.*

**VI.A.1.a)** Patient Safety

**VI.A.1.a).(1) Culture of Safety**

A culture of safety requires continuous identification of vulnerabilities and a willingness to transparently deal with them. An effective organization has formal mechanisms to assess the knowledge, skills, and attitudes of its personnel toward safety in order to identify areas for improvement.
VI.A.1.a).(1).(a) The program, its faculty, residents, and fellows must actively participate in patient safety systems and contribute to a culture of safety. (Core)

VI.A.1.a).(1).(b) The program must have a structure that promotes safe, interprofessional, team-based care. (Core)

VI.A.1.a).(2) Education on Patient Safety

Programs must provide formal educational activities that promote patient safety-related goals, tools, and techniques. (Core)

VI.A.1.a).(3) Patient Safety Events

*Reporting, investigation, and follow-up of adverse events, near misses, and unsafe conditions are pivotal mechanisms for improving patient safety, and are essential for the success of any patient safety program. Feedback and experiential learning are essential to developing true competence in the ability to identify causes and institute sustainable systems-based changes to ameliorate patient safety vulnerabilities.*

VI.A.1.a).(3).(a) Residents, fellows, faculty members, and other clinical staff members must:

VI.A.1.a).(3).(a).(i) know their responsibilities in reporting patient safety events at the clinical site; (Core)

VI.A.1.a).(3).(a).(ii) know how to report patient safety events, including near misses, at the clinical site; and, (Core)

VI.A.1.a).(3).(a).(iii) be provided with summary information of their institution’s patient safety reports. (Core)

VI.A.1.a).(3).(b) Fellows must participate as team members in real and/or simulated interprofessional clinical patient safety activities, such as root cause analyses or other activities that include analysis, as well as formulation and implementation of actions. (Core)
VI.A.1.a).(4) Fellow Education and Experience in Disclosure of Adverse Events

Patient-centered care requires patients, and when appropriate families, to be apprised of clinical situations that affect them, including adverse events. This is an important skill for faculty physicians to model, and for fellows to develop and apply.

VI.A.1.a).(4).(a) All fellows must receive training in how to disclose adverse events to patients and families. (Core)

VI.A.1.a).(4).(b) Fellows should have the opportunity to participate in the disclosure of patient safety events, real or simulated. (Detail)

VI.A.1.b) Quality Improvement

VI.A.1.b).(1) Education in Quality Improvement

A cohesive model of health care includes quality-related goals, tools, and techniques that are necessary in order for health care professionals to achieve quality improvement goals.

VI.A.1.b).(1).(a) Fellows must receive training and experience in quality improvement processes, including an understanding of health care disparities. (Core)

VI.A.1.b).(2) Quality Metrics

Access to data is essential to prioritizing activities for care improvement and evaluating success of improvement efforts.

VI.A.1.b).(2).(a) Fellows and faculty members must receive data on quality metrics and benchmarks related to their patient populations. (Core)

VI.A.1.b).(3) Engagement in Quality Improvement Activities

Experiential learning is essential to developing the ability to identify and institute sustainable systems-based changes to improve patient care.

VI.A.1.b).(3).(a) Fellows must have the opportunity to participate in interprofessional quality improvement activities. (Core)
VI.A.1.b).(3).(a).(i) This should include activities aimed at reducing health care disparities.  (Detail)

VI.A.2. Supervision and Accountability

VI.A.2.a) Although the attending physician is ultimately responsible for the care of the patient, every physician shares in the responsibility and accountability for their efforts in the provision of care. Effective programs, in partnership with their Sponsoring Institutions, define, widely communicate, and monitor a structured chain of responsibility and accountability as it relates to the supervision of all patient care.

Supervision in the setting of graduate medical education provides safe and effective care to patients; ensures each fellow’s development of the skills, knowledge, and attitudes required to enter the unsupervised practice of medicine; and establishes a foundation for continued professional growth.

VI.A.2.a).(1) Each patient must have an identifiable and appropriately-credentialed and privileged attending physician (or licensed independent practitioner as specified by the applicable Review Committee) who is responsible and accountable for the patient’s care.  (Core)

VI.A.2.a).(1).(a) This information must be available to fellows, faculty members, other members of the health care team, and patients.  (Core)

VI.A.2.a).(1).(b) Fellows and faculty members must inform each patient of their respective roles in that patient’s care when providing direct patient care.  (Core)

VI.A.2.b) Supervision may be exercised through a variety of methods. For many aspects of patient care, the supervising physician may be a more advanced fellow. Other portions of care provided by the fellow can be adequately supervised by the immediate availability of the supervising faculty member or fellow physician, either on site or by means of telephonic and/or electronic modalities. Some activities require the physical presence of the supervising faculty member. In some circumstances, supervision may include post-hoc review of fellow-delivered care with feedback.

VI.A.2.b).(1) The program must demonstrate that the appropriate level of supervision in place for all fellows is based on each fellow’s level of training and ability, as well as patient complexity and acuity. Supervision may be
exercised through a variety of methods, as appropriate to the situation. (Core)

VI.A.2.c) Levels of Supervision

To promote oversight of fellow supervision while providing for graded authority and responsibility, the program must use the following classification of supervision: (Core)

VI.A.2.c).(1) Direct Supervision – the supervising physician is physically present with the fellow and patient. (Core)

VI.A.2.c).(2) Indirect Supervision:

VI.A.2.c).(2).(a) with Direct Supervision immediately available – the supervising physician is physically within the hospital or other site of patient care, and is immediately available to provide Direct Supervision. (Core)

VI.A.2.c).(2).(b) with Direct Supervision available – the supervising physician is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic and/or electronic modalities, and is available to provide Direct Supervision. (Core)

VI.A.2.c).(3) Oversight – the supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered. (Core)

VI.A.2.d) The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each fellow must be assigned by the program director and faculty members. (Core)

VI.A.2.d).(1) The program director must evaluate each fellow’s abilities based on specific criteria, guided by the Milestones. (Core)

VI.A.2.d).(2) Faculty members functioning as supervising physicians must delegate portions of care to fellows based on the needs of the patient and the skills of each fellow. (Core)

VI.A.2.d).(3) Fellows should serve in a supervisory role to residents or junior fellows in recognition of their progress toward independence, based on the needs of each patient and the skills of the individual resident or fellow. (Detail)
VI.A.2.e) Programs must set guidelines for circumstances and events in which fellows must communicate with the supervising faculty member(s). (Core)

VI.A.2.e).(1) Each fellow must know the limits of their scope of authority, and the circumstances under which the fellow is permitted to act with conditional independence. (Outcome)

VI.A.2.f) Faculty supervision assignments must be of sufficient duration to assess the knowledge and skills of each fellow and to delegate to the fellow the appropriate level of patient care authority and responsibility. (Core)

VI.B. Professionalism

VI.B.1. Programs, in partnership with their Sponsoring Institutions, must educate fellows and faculty members concerning the professional responsibilities of physicians, including their obligation to be appropriately rested and fit to provide the care required by their patients. (Core)

VI.B.2. The learning objectives of the program must:

VI.B.2.a) be accomplished through an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events; (Core)

VI.B.2.b) be accomplished without excessive reliance on fellows to fulfill non-physician obligations; and, (Core)

VI.B.2.c) ensure manageable patient care responsibilities. (Core)

VI.B.3. The program director, in partnership with the Sponsoring Institution, must provide a culture of professionalism that supports patient safety and personal responsibility. (Core)

VI.B.4. Fellows and faculty members must demonstrate an understanding of their personal role in the:

VI.B.4.a) provision of patient- and family-centered care; (Outcome)

VI.B.4.b) safety and welfare of patients entrusted to their care, including the ability to report unsafe conditions and adverse events; (Outcome)

VI.B.4.c) assurance of their fitness for work, including: (Outcome)

VI.B.4.c).(1) management of their time before, during, and after clinical assignments; and, (Outcome)
VI.B.4.c)(2) recognition of impairment, including from illness, fatigue, and substance use, in themselves, their peers, and other members of the health care team. (Outcome)

VI.B.4.d) commitment to lifelong learning; (Outcome)

VI.B.4.e) monitoring of their patient care performance improvement indicators; and; (Outcome)

VI.B.4.f) accurate reporting of clinical and educational work hours, patient outcomes, and clinical experience data. (Outcome)

VI.B.5. All fellows and faculty members must demonstrate responsiveness to patient needs that supersedes self-interest. This includes the recognition that under certain circumstances, the best interests of the patient may be served by transitioning that patient’s care to another qualified and rested provider. (Outcome)

VI.B.6. Programs must provide a professional, respectful, and civil environment that is free from mistreatment, abuse, or coercion of students, residents/fellows, faculty, and staff. Programs, in partnership with their Sponsoring institutions, should have a process for education of fellows and faculty regarding unprofessional behavior and a confidential process for reporting, investigating, and addressing such concerns. (Core)

VI.C. Well-Being

In the current health care environment, fellows and faculty members are at increased risk for burnout and depression. Psychological, emotional, and physical well-being are critical in the development of the competent, caring, and resilient physician. Self-care is an important component of professionalism; it is also a skill that must be learned and nurtured in the context of other aspects of fellowship training. Programs, in partnership with their Sponsoring Institutions, have the same responsibility to address well-being as they do to evaluate other aspects of fellow competence.

VI.C.1. This responsibility must include:

VI.C.1.a) efforts to enhance the meaning that each fellow finds in the experience of being a physician, including protecting time with patients, minimizing non-physician obligations, providing administrative support, promoting progressive autonomy and flexibility, and enhancing professional relationships; (Core)

VI.C.1.b) attention to scheduling, work intensity, and work compression that impacts fellow well-being; (Core)

VI.C.1.c) evaluating workplace safety data and addressing the safety of fellows and faculty members; (Core)
VI.C.1.d) policies and programs that encourage optimal fellow and faculty member well-being; and, (Core)

VI.C.1.d).(1) Fellows must be given the opportunity to attend medical, mental health, and dental care appointments, including those scheduled during their working hours. (Core)

VI.C.1.e) attention to fellow and faculty member burnout, depression, and substance abuse. The program, in partnership with its Sponsoring Institution, must educate faculty members and fellows in identification of the symptoms of burnout, depression, and substance abuse, including means to assist those who experience these conditions. Fellows and faculty members must also be educated to recognize those symptoms in themselves and how to seek appropriate care. The program, in partnership with its Sponsoring Institution, must: (Core)

VI.C.1.e).(1) encourage fellows and faculty members to alert the program director or other designated personnel or programs when they are concerned that another resident, fellow, or faculty member may be displaying signs of burnout, depression, substance abuse, suicidal ideation, or potential for violence; (Core)

VI.C.1.e).(2) provide access to appropriate tools for self-screening; and, (Core)

VI.C.1.e).(3) provide access to confidential, affordable mental health assessment, counseling, and treatment, including access to urgent and emergent care 24 hours a day, seven days a week. (Core)

VI.C.2. There are circumstances in which fellows may be unable to attend work, including but not limited to fatigue, illness, and family emergencies. Each program must have policies and procedures in place that ensure coverage of patient care in the event that a fellow may be unable to perform their patient care responsibilities. These policies must be implemented without fear of negative consequences for the fellow who is unable to provide the clinical work. (Core)

VI.D. Fatigue Mitigation

VI.D.1. Programs must:

VI.D.1.a) educate all faculty members and fellows to recognize the signs of fatigue and sleep deprivation; (Core)
VI.D.1.b) educate all faculty members and fellows in alertness management and fatigue mitigation processes; and, (Core)

VI.D.1.c) encourage fellows to use fatigue mitigation processes to manage the potential negative effects of fatigue on patient care and learning. (Detail)

VI.D.2. Each program must ensure continuity of patient care, consistent with the program’s policies and procedures referenced in VI.C.2, in the event that a fellow may be unable to perform their patient care responsibilities due to excessive fatigue. (Core)

VI.D.3. The program, in partnership with its Sponsoring Institution, must ensure adequate sleep facilities and safe transportation options for fellows who may be too fatigued to safely return home. (Core)

VI.E. Clinical Responsibilities, Teamwork, and Transitions of Care

VI.E.1. Clinical Responsibilities

The clinical responsibilities for each fellow must be based on PGY level, patient safety, fellow ability, severity and complexity of patient illness/condition, and available support services. (Core)

VI.E.1.a) The program director must have the authority and responsibility to set appropriate clinical responsibilities (i.e., patient caps) for each fellow based on the PGY-level, patient safety, fellow education, severity and complexity of patient illness/condition, and available support services. (Core)

VI.E.1.a).(1) This must include progressive clinical, technical, and consultative experiences that will enable the fellows to develop expertise as a consultant in the subspecialty. (Core)

VI.E.1.a).(2) Lines of responsibility for the pediatric residents and the fellows must be clearly defined. (Core)

VI.E.1.b) The program director must ensure that fellows maintain an appropriate patient load. Insufficient patient experiences do not meet educational needs; an excessive patient load suggests an inappropriate reliance on fellows for service obligations, which may jeopardize the educational experience. (Core)

VI.E.2. Teamwork

Fellows must care for patients in an environment that maximizes communication. This must include the opportunity to work as a member of effective interprofessional teams that are appropriate to the delivery of care in the specialty and larger health system. (Core)

VI.E.2.a) Interprofessional team members should participate in the
VI.E.3. Transitions of Care

VI.E.3.a) Programs must design clinical assignments to optimize transitions in patient care, including their safety, frequency, and structure. (Core)

VI.E.3.b) Programs, in partnership with their Sponsoring Institutions, must ensure and monitor effective, structured hand-over processes to facilitate both continuity of care and patient safety. (Core)

VI.E.3.c) Programs must ensure that fellows are competent in communicating with team members in the hand-over process. (Outcome)

VI.E.3.d) Programs and clinical sites must maintain and communicate schedules of attending physicians and fellows currently responsible for care. (Core)

VI.E.3.e) Each program must ensure continuity of patient care, consistent with the program’s policies and procedures referenced in VI.C.2, in the event that a fellow may be unable to perform their patient care responsibilities due to excessive fatigue or illness, or family emergency. (Core)

VI.F. Clinical Experience and Education

Programs, in partnership with their Sponsoring Institutions, must design an effective program structure that is configured to provide fellows with educational and clinical experience opportunities, as well as reasonable opportunities for rest and personal activities.

VI.F.1. Maximum Hours of Clinical and Educational Work per Week

Clinical and educational work hours must be limited to no more than 80 hours per week, averaged over a four-week period, inclusive of all in-house clinical and educational activities, clinical work done from home, and all moonlighting. (Core)

VI.F.2. Mandatory Time Free of Clinical Work and Education

VI.F.2.a) The program must design an effective program structure that is configured to provide fellows with educational opportunities, as well as reasonable opportunities for rest and personal well-being. (Core)

VI.F.2.b) Fellows should have eight hours off between scheduled clinical work and education periods. (Detail)
VI.F.2.b).(1) There may be circumstances when fellows choose to stay to care for their patients or return to the hospital with fewer than eight hours free of clinical experience and education. This must occur within the context of the 80-hour and the one-day-off-in-seven requirements. (Detail)

VI.F.2.c) Fellows must have at least 14 hours free of clinical work and education after 24 hours of in-house call. (Core)

VI.F.2.d) Fellows must be scheduled for a minimum of one day in seven free of clinical work and required education (when averaged over four weeks). At-home call cannot be assigned on these free days. (Core)

VI.F.3. Maximum Clinical Work and Education Period Length

VI.F.3.a) Clinical and educational work periods for fellows must not exceed 24 hours of continuous scheduled clinical assignments. (Core)

VI.F.3.a).(1) Up to four hours of additional time may be used for activities related to patient safety, such as providing effective transitions of care, and/or fellow education. (Core)

VI.F.3.a).(1).(a) Additional patient care responsibilities must not be assigned to a fellow during this time. (Core)

VI.F.4. Clinical and Educational Work Hour Exceptions

VI.F.4.a) In rare circumstances, after handing off all other responsibilities, a fellow, on their own initiative, may elect to remain or return to the clinical site in the following circumstances:

VI.F.4.a).(1) to continue to provide care to a single severely ill or unstable patient; (Detail)

VI.F.4.a).(2) humanistic attention to the needs of a patient or family; or, (Detail)

VI.F.4.a).(3) to attend unique educational events. (Detail)

VI.F.4.b) These additional hours of care or education will be counted toward the 80-hour weekly limit. (Detail)

VI.F.4.c) A Review Committee may grant rotation-specific exceptions for up to 10 percent or a maximum of 88 clinical and educational work hours to individual programs based on a sound educational rationale.
The Review Committee for Pediatrics will not consider requests for exceptions to the 80-hour limit to the fellows’ work week.

VI.F.4.c).(1) In preparing a request for an exception, the program director must follow the clinical and educational work hour exception policy from the ACGME Manual of Policies and Procedures. (Core)

VI.F.4.c).(2) Prior to submitting the request to the Review Committee, the program director must obtain approval from the Sponsoring Institution’s GMEC and DIO. (Core)

VI.F.5. Moonlighting

VI.F.5.a) Moonlighting must not interfere with the ability of the fellow to achieve the goals and objectives of the educational program, and must not interfere with the fellow’s fitness for work nor compromise patient safety. (Core)

VI.F.5.b) Time spent by fellows in internal and external moonlighting (as defined in the ACGME Glossary of Terms) must be counted toward the 80-hour maximum weekly limit. (Core)

VI.F.6. In-House Night Float

Night float must occur within the context of the 80-hour and one-day-off-in-seven requirements. (Core)

VI.F.6.a) Fellows should not have more than four total weeks of night float per year, and night float should not be scheduled in consecutive weeks. (Detail)

VI.F.7. Maximum In-House On-Call Frequency

Fellows must be scheduled for in-house call no more frequently than every third night (when averaged over a four-week period). (Core)

VI.F.8. At-Home Call

VI.F.8.a) Time spent on patient care activities by fellows on at-home call must count toward the 80-hour maximum weekly limit. The frequency of at-home call is not subject to the every-third-night limitation, but must satisfy the requirement for one day in seven free of clinical work and education, when averaged over four weeks. (Core)

VI.F.8.a).(1) At-home call must not be so frequent or taxing as to preclude rest or reasonable personal time for each fellow. (Core)
VI.F.8.b) Fellows are permitted to return to the hospital while on at-home call to provide direct care for new or established patients. These hours of inpatient patient care must be included in the 80-hour maximum weekly limit. (Detail)

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ACGME Program Requirements for Graduate Medical Education in Pediatric Infectious Diseases

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ACGME Program Requirements for Graduate Medical Education in Pediatric Infectious Diseases

Introduction

Int.A. Scope of Training

Pediatric infectious diseases programs must provide fellows with the background and experience that will enable them to provide optimal care and consultation to pediatric patients with infectious diseases. (Core)*

Int.A.1. To achieve this, the clinical and technical training must include properly balanced, well-organized, and progressive teaching, research, and consultative experiences. (Detail)

Int.A.1. The educational program also must encompass basic concepts in microbiology, immunology, epidemiology, clinical pharmacology, and infection control. (Detail)

VII. Program Personnel and Resources

VII.A. Faculty

VII.A.1. There must be at least two pediatric infectious diseases teaching staff to ensure adequate time for administrative, clinical, and research activities involved in the education of fellows. (Core)

VII.A.1.a) Clinical supervision must be on a 24-hour-a-day, 7-day-a-week basis. (Core)

VII.A.2. The following physician faculty from other disciplines, must be available including: (Detail)

VII.A.2.a) allergy and immunology (Detail)

VII.A.2.b) dermatology (Detail)

VII.A.2.c) microbiology (Detail)

VII.A.3. Consultants in clinical and laboratory aspects of mycology, virology, parasitology, and clinical pharmacology should be available. (Detail)

VII.B. Resources

VII.B.1. Outpatient and Inpatient Facilities

The following facilities must be available at the primary teaching site: (Core)

VII.B.1.a) an ambulatory facility for appropriate evaluation and care of patients from the newborn period to early adulthood; and, (Core)
VII.B.1.b) an inpatient facility with full pediatric (including adolescent) and related services that are staffed by pediatric residents and faculty, and that includes: (Core)

VII.B.1.b).(1) facilities for isolation of patients with infectious diseases; (Detail)

VII.B.1.b).(2) pediatric and neonatal intensive care units; and, (Detail)

VII.B.1.b).(3) support services including comprehensive diagnostic and imaging facilities. (Detail)

VII.B.2. Laboratories

There must be access to clinical microbiology laboratories. (Core)

VII.B.2.a) These should include techniques for identification of infections caused by bacteria, mycobacteria, fungi, viruses, rickettsiae, chlamydiae, and parasites in tissues and body fluids. (Detail)

VII.B.3. Infection Control Program

There must be an infection control program. (Core)

VII.B.3.a) The program should be with a physician leader who has knowledge of epidemiology of pediatric infectious diseases, written protocols for prevention of infection and its spread, an active surveillance system, and an intervention plan for outbreak control. (Detail)

VII.B.4. Patient Population

VII.B.4.a) There must be an adequate volume and variety of patients with infectious diseases, ranging in age from newborn through young adulthood available to the training program to ensure that each fellow achieves competence in patient care. (Core)

VII.B.4.a).(1) This patient population must include inpatients, outpatients, and patients with chronic diseases. (Detail)

VII.B.4.b) Fellows’ experiences must encompass longitudinal care, and provide the opportunity for observation of the course of illness and the benefits and risks of therapy. (Core)

VII.B.4.c) The clinical population must include but not be limited to patients with:

VII.B.4.c).(1) primary and acquired immunodeficiency; (Detail)

VII.B.4.c).(2) immunosuppression secondary to malignancies and to chemotherapeutic or immunosuppressive agents; (Detail)
VII.B.4.c).(3) prematurity, low-birth-weight; and, (Detail)

VII.B.4.c).(4) infections associated with surgery. (Detail)

VIII. Educational Program

VIII.A. Patient Care

Fellows must demonstrate competence in the application and interpretation of diagnostic tests and indications, contraindications, risks, and interpretation of the results of therapeutic procedures. (Outcome)

VIII.A.1. This must include management of outpatients and inpatients having infectious diseases or clinical conditions such as: (Outcome)

VIII.A.1.a) upper respiratory tract infections; (Outcome)

VIII.A.1.b) lower respiratory tract infections; (Outcome)

VIII.A.1.c) central nervous system infections; (Outcome)

VIII.A.1.d) urinary tract infections; (Outcome)

VIII.A.1.e) cardiovascular infections; (Outcome)

VIII.A.1.f) bone and joint infections; (Outcome)

VIII.A.1.g) skin/soft tissue/muscle infections; (Outcome)

VIII.A.1.h) gastrointestinal tract/intra-abdominal infections; (Outcome)

VIII.A.1.i) hepatic/biliary infections; (Outcome)

VIII.A.1.j) ocular infections; (Outcome)

VIII.A.1.k) reproductive tract infections; (Outcome)

VIII.A.1.l) sexually transmitted infections; (Outcome)

VIII.A.1.m) foreign-body and catheter-related infections; (Outcome)

VIII.A.1.n) HIV infection; (Outcome)

VIII.A.1.o) healthcare-associated infections; (Outcome)

VIII.A.1.p) surgical and traumatic wound infections; (Outcome)

VIII.A.1.q) congenital and neonatal infections; (Outcome)

VIII.A.1.r) infections in transplant patients; (Outcome)
VIII.A.1.s) prolonged and recurrent fever; and, (Outcome)
VIII.A.1.t) bloodstream infections and sepsis. (Outcome)

VIII.B. Medical Knowledge
VIII.B.1. The program must have a well-developed, formally structured curriculum. (Core)

VIII.B.1.a) Fellows must demonstrate the competence to diagnose and manage pediatric patients with a wide variety of acute and chronic infectious diseases, including disorders of host defense. (Outcome)

VIII.B.1.b) Fellows must be able to understand and manage the principles of disease control, prevention of healthcare-associated infections, emerging pathogens, immunization programs, and/or vaccine-preventable diseases. (Outcome)

VIII.B.2. Fellows must demonstrate competence in:

VIII.B.2.a) basic epidemiologic and biostatistical methods and their application to clinical research and patient care; (Outcome)

VIII.B.2.b) the functions and appropriate utilization of diagnostic microbiology, immunology, virology, mycology, and parasitology laboratories; (Outcome)

VIII.B.2.c) the appropriate use of antimicrobial agents in a variety of clinical settings, their mechanisms of action, pharmacokinetics, and potential adverse reactions; (Outcome)

VIII.B.2.d) microbiological and immunologic factors that determine the outcome of the interaction between host and microbe; (Outcome)

VIII.B.2.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; (Outcome)

VIII.B.2.f) the effects of underlying disease states and immunosuppressive therapies on host response to infectious agents; (Outcome)

VIII.B.2.g) mechanisms of protection against infection, e.g., active or passive immunization and immunomodulating agents; (Outcome)

VIII.B.2.h) clinical pharmacology of antimicrobial agents including drug interactions, adverse reactions, dose adjustments for abnormal physiology, and principles of pharmacokinetics and pharmacodynamics; (Outcome)
VIII.B.2.i) methods of determining activity of antimicrobial agents and techniques to determine their concentrations in blood and other body fluids; (Outcome)

VIII.B.2.j) indications for diagnostic procedures and the interpretation of results. For example, bronchoscopy, thoracentesis, arthrocentesis, lumbar puncture, and aspiration of abscess cavities and soft tissues; (Outcome)

VIII.B.2.k) the sensitivity, specificity, efficacy, benefits, and risks of contemporary technologies, such as those for rapid microbiologic diagnosis and for diagnostic imaging; (Outcome)

VIII.B.2.l) the principles and practice of hospital epidemiology and infection control and prevention; (Outcome)

VIII.B.2.m) the currently recommended immunization schedules for young infants, children, and adolescents, with knowledge of protective efficacy, risks and benefits of routinely administered vaccines, including the use of immunizations in special situations and immunocompromised hosts; (Outcome)

VIII.B.2.n) the understanding of adverse events attributed to immunomodulators; and, (Outcome)

VIII.B.2.o) emerging infectious diseases and public health issues pertinent to pediatric infectious diseases. (Outcome)

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*Core Requirements*: Statements that define structure, resource, or process elements essential to every graduate medical educational program.

*Detail Requirements*: Statements that describe a specific structure, resource, or process, for achieving compliance with a Core Requirement. Programs and sponsoring institutions in substantial compliance with the Outcome Requirements may utilize alternative or innovative approaches to meet Core Requirements.

*Outcome Requirements*: Statements that specify expected measurable or observable attributes (knowledge, abilities, skills, or attitudes) of residents or fellows at key stages of their graduate medical education.

**Osteopathic Recognition**
For programs seeking Osteopathic Recognition for the entire program, or for a track within the program, the Osteopathic Recognition Requirements are also applicable. 
(http://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/Osteopathic_Recognition_Requirements.pdf)