

Lemuel Shattuck Hospital Consultation Service

A) Educational Goals, Objectives, and ACGME Competencies

Goals

- To learn the physiological basis of infectious diseases, the differential diagnosis and treatment of these diseases, and the broad array of skills required to carry out effective, timely and courteous consultation in infectious diseases.
- Learn how to manage complicated infectious disease problems in a public health setting.
- Learn how to provide care of patients with HIV infection and patients with tuberculosis.
- Learn to provide consultations to the various services within the hospital including the surgical, orthopedic, medical, geriatric and psychiatric services.

Objectives

First Year ID Residents:

- To gain a basic understanding of the major diagnoses, pathophysiology, differential diagnosis, and therapy of general infectious diseases encountered in the inpatient public hospital setting, particularly infectious diseases of injection drug users, the homeless and the incarcerated, with an emphasis on HIV care.
- To use primary classical and recent literature in the care of patients with infectious diseases and to transfer the experiences learned in specific instances to future experiences.
- Demonstrate ability to teach principles of infectious diseases to other health professionals, including medical students.
- To learn the art of consultation, including the discussion of the consultant's opinions with the primary care team.
- To understand the importance of discharge planning and follow-up of patients with infectious diseases into difficult social situations.

Second Year ID Residents:

- To possess an advanced understanding of pathophysiology, differential diagnosis, and therapy of major and unusual infectious diseases encountered in the inpatient public hospital setting.
- To be able to competently and efficiently provide sophisticated infectious disease consultation independently.
- To regularly read and critically assess the primary infectious disease literature, become familiar with published practice guidelines and apply this knowledge to patient care.
- Demonstrate ability to impart sophisticated and detailed information regarding infectious diseases to peers and those less experienced.

Rationale/Value

A public health hospital provides unique experiences in the care and management of its patients. Aside from the wide spectrum of infectious diseases seen, issues such as nonadherence to medical regimens, addiction and substance use disorders, homelessness and incarceration play an important role in this population. The resident is involved in the inpatient services as well as the outpatient clinics and experiences the difficulties inherent to managing this population.

ACGME Competencies

Patient care

First Year ID residents:

- Demonstrate care that is compassionate, appropriate, and effective for the treatment of health problems related to infectious diseases and the promotion of health and prevention of infection.
- Able to perform detailed history and physical exam appropriate to medical, surgical, critically ill and other patient populations in searching for an infectious disease.
- Learn to evaluate patients with issues such as noncompliance, drug addiction, homelessness and incarceration

Second year ID residents:

- Advanced understanding of above
- Demonstrate care that is compassionate, appropriate, and effective for the treatment of health problems related to infectious diseases and the promotion of health and prevention of infection, at a more sophisticated and independent level compared to first year ID residents.
- Able to formulate a focused infectious disease differential diagnosis and diagnostic and therapeutic plan.
- Able to independently and efficiently formulate a focused infectious disease differential diagnosis and diagnostic and therapeutic plan for complex tertiary- care setting patients.

Medical knowledge

First year ID residents:

- Demonstrate knowledge about established and evolving biomedical, clinical and cognate (epidemiology and socio/behavioral) sciences in the field of infectious diseases and the application of knowledge to patient care.
- Demonstrate knowledge of the most prominent disease mix encountered in this experience:
- HIV Infection:
 - Learn inpatient management of HIV infected individuals

- Learn the diagnosis and management of AIDS-related conditions including AIDS Dementia, toxoplasmosis, CNS lymphoma, *Pneumocystis pneumonia*, AIDS wasting and CMV disease.
 - Learn diagnosis and management of acute illness associated with HIV.
 - Learn management of the HIV infected dialysis patient at the LSH outpatient dialysis unit that has many HIV infected patients.
- HCV Infection:
 - Learn how to evaluate, manage, and treat Hepatitis B and Hepatitis C in patients with and without HIV infection.
 - Learn how approach liver disease and issues related to drug-induced hepatotoxicity.
- Tuberculosis:
 - Understand the management of patients with drug resistant tuberculosis
 - Understand the management of patients with tuberculosis who are co-infected with HIV and/or viral hepatitis.
 - Understand the diagnosis and management of complications of tuberculosis such as osteomyelitis and central nervous system infections.
 - Know how to respond to complications of the drugs used
 - Develop familiarity with first and second line drugs needed in the management of tuberculosis.
- Endocarditis:
 - Learn management of endocarditis and its associated complications, particularly in persons who inject drugs, patients infected with HIV, and incarcerated individuals.
- Understand the use of empiric and specifically targeted antimicrobial therapy, including optimal timing, dose schedules and dosage adjustment
 - Understand drug interactions and toxicities, efficacies of antimicrobials and use of alternative therapies
 - Understand appropriate use of preventive therapies, especially antimicrobial prophylaxis and the use of vaccines.
 - Recognize and differentiate unusual manifestations of common infections vs. unusual infections vs. non-infectious conditions masquerading as infections
- Demonstrate knowledge of the following:

Expertise including but not limited to the following:
- Host defense mechanisms and defects
- Patients with host defense defects due to neutropenia
- Patients with host defense defects due to leukemia, lymphoma, and other malignancies
- Epidemiology of community acquired and nosocomial infections
- Antiinfective therapy
- Clinical microbiology
Recognition, natural history, differential diagnosis, specific diagnosis and management of:
- Fever
- Upper respiratory tract infections
- Pleuropulmonary and bronchial infections
- Urinary tract infections
- Sepsis syndrome
- Cardiovascular infections
- Central nervous system infections
- Skin and soft tissue infections
- Gastrointestinal tract infections
- Intraabdominal infections
- Hepatitis A, B, C
- Bone and joint infections
- Prosthetic Device infections
- Reproductive organ infections
- Perinatal infections
- Sexually transmitted diseases
- Urinary tract infections in normal and immunocompromised hosts
- Ocular infections
- HIV disease including
Epidemiology and prevention
Diagnosis
Immunology
Virology
Natural history of infection
Infectious and non-infectious complications
HIV/TB coinfection
HIV/hepatitis C coinfection
Antiretroviral therapy – use and complications
- Familiarity with etiologic agents of infectious diseases
- Nosocomial infections
- Infections of specific hosts
- Surgical infections
- Infections related to trauma

Reviewed April 2018

- Infections in travelers
- Sepsis syndromes
- Zoonoses
- Infections in the developing world
- Biowarfare
- Non-infectious syndromes that present as infections

Learn the following procedures related to infectious disease testing:

- Performance and interpretation of gram stains
- Plating, review and interpretation of cultures of bacteria, mycobacteria, fungi, viruses, rickettsiae, chlamydiae, and parasites, and interpretation of serological tests.
- Optimal methods of specimen collection and culture
- Knowledge of the sensitivity and specificity, risks and benefits of procedures.

Second year ID residents

- Advanced understanding of same

Practice-based learning

First year ID residents:

- Learn the use of primary classical and recent literature in the care of patients with infectious diseases and to transfer the experiences learned in specific instances to future experiences.

Second year ID residents

- Advanced understanding of above
- To regularly read and critically assess the primary infectious disease literature, become familiar with published practice guidelines and apply this knowledge to patient care.

Interpersonal and communication skills

First year ID residents:

- Advise physicians on the optimal usage of antimicrobial agents and their monitoring
- Advise proper response to suspected or diagnosed drug reactions including the use of drug desensitization
- Advise on the appropriateness of a given procedure, such as removal of central venous catheters, abscess drainage and bronchoscopy, in the context of the management or diagnosis of an infectious disease.
- Teach principles of infectious diseases to other health professionals, including medical students.
- Learn the art of consultation, including the discussion of the consultant's opinions with the primary care team.

Second year ID residents:

- Advanced understanding of above
- Able to impart sophisticated and detailed information regarding infectious diseases to peers and those less experienced.

Professionalism

First year ID residents:

- Provide courteous and timely assistance to all callers
- Complete documentation completely and in a timely fashion necessary to promote patient care and safety
- Provide expert and compassionate care to a diverse group of patients. The patients seen by the ID resident primarily are adult members of the disenfranchised segments of society such as substance users, the homeless, persons who are incarcerated, and those with chronic psychiatric illness. Many are members of minority ethnic and racial groups.

Second year ID residents:

- Advanced understanding of above

Systems-based practice

First year ID residents:

Develop understanding of medical care across the spectrum of care:

- ID residents are encouraged to follow patients from inpatient to outpatient follow-ups at LSH
- Understand the challenges of care of the incarcerated individual
- Contribute to discharge planning efforts, including antimicrobial deescalation, change from parenteral to oral
- Develop understanding of cost-effective management plans for investigation and treatment.

Second year ID residents:

- Advanced understanding of above

Patient Characteristics:

The patients seen by the ID resident primarily are adult members of the disenfranchised segments of society such as persons with substance use disorders, persons who inject drugs, the homeless, persons who are incarcerated, and those with chronic psychiatric illness. Many are members of minority ethnic and racial groups. LSH is unique in having an inpatient AIDS ward, and the only locked tuberculosis ward in the state of Massachusetts.

Types of Clinical Encounters:

The types of clinical encounters include inpatient consultation and outpatient visits during weekly HIV, tuberculosis and HIV/hepatitic C co-infection clinics.

Residents interview and examine the patient, collect relevant data and present the case to their attending preceptor. The case is discussed and then the patient is visited by the attending physician with the ID resident present. Recommendations are then made to the primary team caring for the patient.

Procedures and Services:

These are similar to those performed during Tufts Medical Center rotations including the performance and interpretation of gram stains and other microbiology tests, advice regarding appropriate diagnostic and/or therapeutic invasive and noninvasive procedures, and advice on optimal antimicrobial therapy including for hepatitis B and C, HIV and tuberculosis.

b) Defined Methods of Teaching

Principal Teaching Methods

Residents are asked to see the patients, review the laboratory data, and make a list of differential diagnosis. They are then asked to formulate a plan for evaluation and management. They then present the patient and plan to an ID attending.

Attendings then review the findings and together with the resident, formulate plans for the patients. The resident is guided by the experience of the attending.

Ancillary Educational Materials

The Lemuel Shattuck Hospital is an academic center with an accredited internal medicine internship program. It is a teaching hospital of Tufts University School of Medicine. A number of residents and residents in other subspecialties rotate through the hospital. The hospital has an up-to-date library, internet access, radiology department, pathology laboratory and clinical microbiology laboratory.

Residents are encouraged to spend time in the laboratory and help with the identification of specimens. In addition to grand rounds, and morbidity and mortality conferences, a weekly AIDS conference is held. The topics range from management issues to case reviews to journal reviews. Molecular biology of various aspects of the HIV lifecycle and pathophysiology of disease is also reviewed at times in the conferences. The ID resident is asked to give the AIDS conference once during their monthly rotation.

c) Methods of Evaluation

Methods to Evaluate Residents

All attendings participate in the review process at the Lemuel Shattuck Hospital. Direct observation by supervising attendings with written monthly reports based on the six ACGME core competencies of patient care, medical knowledge, practice-based learning, interpersonal and communication skills, professionalism and systems-based practice, supplemented with narrative comments. The residents are reviewed in a manner similar to that at Tufts Medical Center. The same forms are used and the information is directed to the Tufts Medical Center Program Director, who oversees the composite evaluation of the resident.

Methods to Evaluate Program Performance

Formal evaluation of program content and impact on professional development of ID residents is carried out by the faculty annually through the Program Evaluation Committee. Each year, the clinical ID residents, as a group, draw up a written confidential evaluation of the program, including the program at the Lemuel Shattuck Hospital. In addition, monthly the Tufts Medical Center Program Director solicits evaluations by the ID resident of each attending that they worked with during their rotation. This information is relayed to the local program director annually.

d) Strengths of Program

The strength of the program is clearly in the fields of HIV care and tuberculosis care. In addition, the resident learns how to manage patients with unique life situations such as substance use disorders, psychiatric issues, incarceration or homelessness.

e) Limitations of Program

The Shattuck lacks a transplantation unit. There are no microbiology plate rounds as part of this rotation. These experiences are gained in other rotations of the fellowship.