Tufts Medical Center Infectious Diseases Continuity Clinic

a) Goals, Objectives, and ACGME Competencies

Goals

- To teach ID residents 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.
- ID Residents will learn to care for patients in the ambulatory setting in a manner which demonstrates professional conduct in all aspects of clinical practice.
- ID residents will learn skills required to diagnose and treat infectious diseases in the ambulatory setting, and learn the skills required to manage patients on an ongoing basis. These skills include the prudent use of outpatient diagnostic resources; the ability to successfully interact with referring physicians, other professionals, patients, and their families; the ability to manage time effectively, and the ability to effectively manage chronic illness, especially (but not exclusively) HIV infection and its complications. The primary emphasis of the outpatient experience is the management of a panel of HIV-infected patients over a 24-month period.

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 ambulatory, primarily urban setting. The emphasis is on the primary care management of persons with HIV including HIV diagnosis, treatment and the management of complications of the disease and its therapy. Additionally, residents are expected to become competent in caring for ambulatory patients with complicated infectious diseases initially requiring hospitalization.
- To use primary classical and recent literature in the ambulatory care of patients with infectious diseases, especially HIV, and to transfer the experiences learned in specific instances to future experiences.
- To learn the art of outpatient consultation, including the discussion of the consultant's opinions with the referring physician.
- To understand the role of home care services and impact of insurance coverage in the care of patients in the community with infectious diseases.

Second Year ID Residents:

- To possess an advanced understanding of pathophysiology, differential diagnosis, and therapy of HIV infection and its complications.
- To independently fashion and monitor treatment regimens for HIV and to recognize and prevent opportunistic processes.
- To be able to competently and efficiently provide sophisticated infectious disease consultation of the ambulatory patient 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.
- To utilize novel data and approaches through learning gained through attendance at national HIV-AIDS conferences to improve patient care.
- To independently manage home care, social and financial services necessary to provide optimal care of the ambulatory patient.

Rationale/Value

Inpatient hospital admissions for diagnosis and treatment of infections continue to decline, and more infections are treated in the office setting or at home. Global concerns about cost-containment drive the need to initiate diagnostic and treatment modalities in the outpatient setting, Success as an infectious diseases practitioner or consultant requires familiarity with the ambulatory setting, and also requires the ability to interact effectively with referring physicians, skilled nursing facilities, out-of-hospital care providers, and patient's families to assure optimal care. In addition, ID trainees benefit from observing the evolution and potentially resolution of infectious diseases in the outpatient setting.

Most Important Educational Content

Disease Mix:

HIV –infection of all stages, post-surgical wound infections, osteomyelitis, infections of prosthetic devices, endocarditis, fever of unknown origin, and infectious complications of immune suppression other than HIV/AIDS are all represented in our ambulatory continuity practice. Consistent with the local and national rise in prominence of opioid use disorder, patient seen in clinic may have infectious complications of injecting drugs. In addition, the proximity of Boston to Cape Cod and the neighboring islands as well as to rural areas of New England provides experience with patients with tick- and other arthropod-borne illnesses, as well as zoonotic diseases.

Patient Characteristics:

The patient population is representative of an urban and suburban referral practice generally with a wide diversity in terms of ethnicity, gender, racial makeup and socioeconomic circumstance. Patients with HIV/AIDS are equally diverse, ranging from those with high educational achievement and high socioeconomic status, to patients with significant educational and socioeconomic barriers to optimal care. Patients are followed in a typical office setting. Tufts Medical Center's location in Chinatown also offers exposure to a large and diverse Asian immigrant population. Many of these patients are seen in the outpatient clinic for management of both active and latent TB infection. Women are significantly represented in the case mix. Availability of Tufts Medical Center OB-GYN faculty with interest and experience in managing the HIV+ pregnant woman is a significant resource.

Types of Clinical Encounters:

Most encounters are typical outpatient clinical encounters. They occur as primary care encounters, consultations and follow up care for patients initially seen in the inpatient setting. New patients are scheduled for one hour and return visits are scheduled for 30 minutes. The patient is seen by the ID resident first then presented to the ID physician preceptor, who

revisits the patient with the ID resident. There are also frequent visits for intravenous infusion of antimicrobial and other agents, administration of aerosolized pentamidine.

ACGME Competencies

Patient care

First year ID residents

- Gain a basic understanding of the major diagnoses, pathophysiology, differential diagnosis, and therapy of general infectious diseases encountered in the ambulatory, primarily urban setting.
- Learn the primary care management of persons with HIV including HIV diagnosis, treatment and the management of complications of the disease and its therapy.
- Become competent in caring for ambulatory patients with complicated infectious diseases initially requiring hospitalization

Second year ID residents

- Develop an advanced understanding of pathophysiology, differential diagnosis, and therapy of HIV infection and its complications.
- Independently fashion and monitor treatment regimens for HIV management.
- Recognize and prevent opportunistic processes in HIV positive patients and patients with other immunosuppresed conditions.
- Provide sophisticated infectious disease consultation of the ambulatory patient independently, competently and efficiently

Medical knowledge

First year ID residents

- Acquire basic knowledge of the following procedures, and risks, benefits, sensitivity and specificity of these procedures:

    - Planting and interpretation of PPD tests
    - Performance of cervical and anal Pap smears
    - Urethral sampling for STD
    - Culturing wounds and abscesses.• Acquire basic knowledge of the following:
    - Primary and consultative care for persons with HIV
    - Monitoring of HIV and its complications
    - Institution and monitoring of antiretroviral therapy
    - Prevention and treatment of opportunistic infections
    - Institution and/or completion of therapy for a myriad of serious infectious diseases such as pneumonia, endocarditis, osteomyelitis and tuberculosis
    - Pre-transplantation evaluation for the prevention of infectious complications
    - Care of the sick traveler

Second year ID residents

- Acquire an advanced understanding and competency of above

Practice-based learning

First year ID residents

- Use primary classical and recent literature in the ambulatory care of patients with infectious diseases, especially HIV
- Transfer the experiences learned in specific instances to future experiences.

Second year ID residents

- Regularly read and critically assess the primary infectious disease literature
- Develop familiarity with published practice guidelines and apply this knowledge to patient care.
- Impart sophisticated and detailed information regarding infectious diseases to peers and those less experienced.
- Utilize novel data and approaches through learning gained through attendance at national HIV-AIDS conferences to improve patient care.

Interpersonal and communication skills

First year ID residents

- Learn the art of outpatient consultation, including the discussion of the consultant's opinions with the referring physician.
- Learn how to communicate with a diverse panel of patients, that includes diversity along socio-economics, religion, language, education level, substance use disorders, and sexuality
- Learn optimal communication strategies to help patients maximize medication adherence

Second year ID residents

- Develop advanced competency of above.

Professionalism

First year ID residents

- Produce clinic notes that are complete, timely, address the infectious diseases questions fully
- Respond promptly to pages and emails regarding patient care
- Sign out pager when unavailable

Second year ID residents

- Develop advanced competency of above

Systems-based practice

First year ID residents

- Gain basic understanding the role of home care services and impact of insurance coverage in the care of patients in the community with infectious diseases.
- Gain basic understanding of the role of basic needs (food, shelter, transportation), and how the lack of these needs being met often results in HIV medication non-adherence

- Learn to utilize social supports, social work consultation, nutrition consultation,psychiatric consultation to optimize care of HIV+ patients

Second year ID residents

- Gain an advanced understanding and competency of above
- Independently manage home care, social and financial services necessary to provide optimal care of the ambulatory patient

b) DEFINED METHODS OF TEACHING

Principal Teaching Method

The case method (apprenticeship) is the major technique used in the ambulatory continuity clinic. Patients are assigned a subspecialty resident who provides them with ongoing care in association with a faculty member. Resident's skills in history taking, physical examination, common office procedures, and treatment planning and execution are reviewed during and after each encounter. Continuity of care and the need to become fully familiar with the patient's family, environment, and support structures are stressed.

Frequently, the ID resident functions as an HIV-infected individual's primary care physician, under the direction of a board certified ID faculty member.

Principal Ancillary Educational Materials

Resources include the extensive print and electronic resources, including didactic slide shows, described in the Tufts Medical Center inpatient rotations. Textbooks of Infectious Diseases, as well as Dermatologic and Infectious Diseases

Atlases, are available in the clinic for ID residents' use.

c) Methods of Evaluation

Methods to Evaluate Residents

Direct observation by supervising staff physicians comprises a major means of evaluating residents. ID residents are evaluated regarding the six ACGME core competencies of patient care, medical knowledge, practice-based learning, interpersonal and communication skills, professionalism and systems-based practice. Twice-yearly written performance evaluations by all staff members, including nursing and management staff who have contact with the resident, are reviewed at faculty meetings. These are in addition to the monthly performance evaluations from inpatient rotations, and focus on ambulatory skill development. Assessments of ID residents in clinic also include multisource evaluations by patients, nurses, peers, faculty and clerical staff, which also encompass the six ACGME core competencies (See Appendix).

Methods to Evaluate Program Performance

The ambulatory continuity experience is evaluated as part of the entire program in the annual confidential program evaluation by ID residents, as described elsewhere.

d) Strengths of Program

Large numbers of patients are followed with diverse types of problems. Extensive experience is gained by the end of the second year. ID residents are supervised by attendings with extensive experience in the management of ambulatory infectious diseases problems. Ancillary services (Pathology, Radiology, Microbiology) are readily accessible and are of a high clinical and academic standard.

The ID clinic social worker (Ms. Anne Luepkes, MSW) provides substantial resources to HIV positive patients to support and maintain medication adherence. Ms. Luepkes is easily available by email, pager or phone for ID residents to refer patients with any social issues including but not limited to housing, food insecurity, domestic violence, insurance issues, employment issues, and medication affordability. The clinical also provides nutritional support, with a skilled HIV nutrition team available to consult on clinic patients.

A clinical pharmacist is available to provide assistance with medication adherence, medication reconciliation, prior authorizations, and other aspects of pharmacotherapy.

e) Limitations of Program

A limitation previously identified by ID residents was ongoing co-ordination of during transitions of care for patients was noted as a deficiency. The program has added administrative support for patients being discharged on outpatient intravenous antibiotics (OPAT) and high risk therapies requiring monitoring.

Challenges in the outpatient setting have included finding timely appointments for hospital discharges. Multiple resources now exist: urgent appointment slots by approval only, addition of multiple outpatient attendings, and several administrators who can book appointments. Staff turnover remains high, but plans are in place to continually train new staff.

The electronic medical record for the outpatient setting (eClinical Works) has been listed as a deficiency in program surveys and evaluations. Plans are in place to replace the entire hospital electronic medical record in the coming years.