**Internal Medicine Curriculum**

**Infectious Diseases Rotation**

**Contact Person:** Dr. Stephen Hawkins

**Educational Purpose**
The infectious disease rotation is a required rotation primarily available for PGY, 2 and 3 residents. Although a primarily consultative rotation, infectious disease specialists now provide continuing care for many patients with HIV disease. Because the practice of internal medicine requires a broad knowledge base of infectious disease, acquiring fundamental skills in evaluating and managing patients in the causes of fever are critical. Developing expertise in evaluating patients with primary infections, such as pneumonia and urinary tract infections; secondary infectious processes, such as catheter related infections and ventilator associated pneumonia, etc; and immunocompromised patients is stressed. The prevention of infectious diseases by the use of appropriate vaccinations is emphasized to the residents. Clinical ethics become more complicated for the infectious disease practitioner as HIV has become more common. Many infectious diseases can be transmitted through occupational exposures and prevented by appropriate environmental precautions.

**Teaching Methods**
One-on-one didactic sessions with the attending, bedside rounds on all new consults and hospital follow-ups, assigned readings and reviewing articles on the reading list will provide substantial learning opportunities for each resident. During these discussions, physiology, pathogenesis, clinical presentations and natural history of infectious disorders is regularly reviewed. The importance of a careful history and physical exam is crucial for appropriate diagnosis of infectious disorders as well by the use of medical information as illustrated by those with sexually transmitted diseases and HIV.

**Disease Mix**
The resident will evaluate primary infectious disease processes such as pneumonia, urinary tract infections, endocarditis, and HIV. The resident will also evaluate secondary infectious disease processes such as catheter-related infections and ventilator associated pneumonia and immunocompromised patients with neutropenia, transplantation, connective tissues diseases and immunomodulating medications. Residents will also evaluate diseases that mimic infections, such as connective tissues diseases, allergic reactions. Residents will be confronted with patients with primary as well as secondary infectious processes. The major topics emphasized during this rotation include but are not limited to the following:

A. Interpretation of culture and sensitivity data on: sputum, urine, blood, wound and quantitative burn cultures.

B. Interpretation of serology studies: viral diseases (HIV, hepatitis, EBV, CMV, others), syphilis, Lyme disease, etc.

C. Preparation and interpretation of gram stains and AFB smears.

D. The spectrum, pharmacokinetics, side effects and toxicities along with the dosing of the major classes of antibiotics and antiviral.
Key clinical syndromes:
A. Pneumonias: community acquired and nosocomial.
B. Urinary tract infections.
C. Complicated and uncomplicated intraabdominal infections.
D. Skin/soft tissue infections: diagnosis, treatment and complications.
E. Sinusitis/otitis: diagnosis, treatment and complications.
G. Meningitis, encephalitis and other central nervous system infections.
H. Endocarditis: diagnosis, treatment and prophylaxis.
J. Bacteremia: staph species, enterococcus species, others.
K. HIV infection: asymptomatic patient work up, antiretroviral therapy.
L. Opportunistic infections: treatment and prophylaxis

Primary Diseases Encountered: Similar to topics covered plus:
A. Sepsis/sepsis syndrome.
B. Surgical wound.
C. Fungemia.
D. Catheter related infections.
E. Osteomyelitis.
F. Infections in trauma patients.
G. Infections in transplant patients.
H. Fever.

**Patient Characteristics**
Patients ranging in age from adolescents to the elderly are routinely encountered. Disease processes from the subtle to the catastrophic and the initial to terminal stages are evaluated.

**Types of Clinical Encounters**
Most clinical encounters seen at the consultative infectious disease practice are primarily inpatient. However, outpatient management of HIV and tuberculosis under the supervision of the attending infectious disease specialist are provided. Residents participate in the TB clinic at the Hamilton County Health Department and are introduced to the principles of community wide surveillance, the role of non-physician personnel in the appropriate management of TB and other communicable diseases.

**Procedures and Services**
During the infectious disease rotation, needle aspiration as well as incision and drainage of superficial abscesses may be performed. Other procedures may include lumbar puncture, arthocentesis, preparation of gram stains for review, and review of acid fast stains.

**Reading List**
MKSAP 14, Infectious Disease Medicine.
Current literature as assigned by the supervising attending.
Pathological Material
Residents are encouraged to review the results of biopsies, gram stains and AFB stains with patients they have encountered.

Method of Resident Evaluation
The resident will be expected to:
A. Attend all assigned clinic sessions, inpatient and outpatient
B. Complete all assigned required reading.
C. Perform a complete history and physical examination for the patient presenting with a febrile illness.
D. Read the infectious disease section of the MKSAP to include answering the questions and reviewing the reference materials provided for further information.
E. Demonstrate understanding of current recommendations for adult immunizations
F. Understand the appropriate antibiotic selection for the following situations:
   1. Community acquired pneumonia in a healthy adult
   2. Community acquired pneumonia in an immune compromised patient
   3. Nosocomial pneumonia
   4. Bacterial Endocarditis
   5. Sepsis
   6. Diabetic soft tissue infections
   7. Simple and complicated urinary tract infections
G. Demonstrate satisfactory skills in obtaining patient history and perform a complete physical examination for the patient presenting with a febrile illness.

Objectives
The curriculum is designed to address learning objectives of the following Accreditation Council on Graduate Medical Education core competencies. Reference: http://www.acgme.org/Outcome

“Every competency can be taught with every patient.” B. Joyce, 2006

PATIENT CARE
Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:
- communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- gather essential and accurate information about their patients
- make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- develop and carry out patient management plans
- counsel and educate patients and their families
- use information technology to support patient care decisions and patient education
- perform competently all medical and invasive procedures considered essential for the area of practice
• provide health care services aimed at preventing health problems or maintaining health
• work with health care professionals, including those from other disciplines, to provide patient-focused care

MEDICAL KNOWLEDGE
Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care. Residents are expected to:
  • demonstrate an investigatory and analytic thinking approach to clinical situations
  • know and apply the basic and clinically supportive sciences which are appropriate to their discipline

PRACTICE-BASED LEARNING AND IMPROVEMENT
Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices. Residents are expected to:
  • analyze practice experience and perform practice-based improvement activities using a systematic methodology
  • locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems
  • obtain and use information about their own population of patients and the larger population from which their patients are drawn
  • apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
  • use information technology to manage information, access on-line medical information; and support their own education
  • facilitate the learning of students and other health care professionals

INTERPERSONAL AND COMMUNICATION SKILLS
Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates. Residents are expected to:
  • create and sustain a therapeutic and ethically sound relationship with patients
  • use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
  • work effectively with others as a member or leader of a health care team or other professional group

PROFESSIONALISM
Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Residents are expected to:
  • demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supercedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and on-going professional development
• demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices
• demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities

SYSTEMS-BASED PRACTICE
Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Residents are expected to:
• understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice
• know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
• practice cost-effective health care and resource allocation that does not compromise quality of care
• advocate for quality patient care and assist patients in dealing with system complexities
• know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance

Revised and Updated August 2008
# Infectious Diseases Intern/Resident Check List

**Intern/Resident** ___________________________ Circle one PGY 1 2 3

**Supervising Faculty** ___________________________ **Month** ________________

<table>
<thead>
<tr>
<th>Rotation Check List</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reviewed the goals and objectives at the beginning of the rotation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation and feedback mid month</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation and feedback at the end of rotation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attended all scheduled clinical sessions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed assigned readings to include MKSAP (Medical Knowledge Self-Assessment Program 14- Infectious Disease)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed required case reports/abstracts/posters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performed at or above the expected PGY level. Please check one.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PGY 1 Residents are responsible**

- for gathering relevant patient data
- performing and interpreting physical examination findings
- perform basic procedures and interpret data
- interpret laboratory tests
- interpret basic radiographic studies

**PGY-2 will have improved competence and demonstrate**

- improved data gathering and physical examination skills
- improved knowledge
- improved decision making
- enhanced ability to counseling

**PGY-3 will approach mastery and demonstrate the ability to function as consultant**

Reviewed and met the core competencies as outlined. Please give at least one additional example.

**A Patient Care**

- Residents will obtain and document appropriate history taking, physical exam and laboratory interpretation skills for patient encounters
- Performed a complete history and physical examination for the patient presenting with a febrile illness
- Document procedures appropriately

**B. Medical Knowledge**

- Residents will be able to define, describe and discuss various problems based on the expected disease mix.
- Understand the appropriate antibiotic selection for the following situations:
  
  A. Community acquired pneumonia in a healthy adult
  
  B. Community acquired pneumonia in an immunocompromised patient
C. Nosocomial pneumonia  
D. Bacterial endocarditis  
E. Sepsis  
F. Diabetic soft tissue infections  
G. Simple and complicated urinary tract infections

<table>
<thead>
<tr>
<th>C. Practice Based Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Residents will develop and implement treatment plans by utilizing appropriate information systems and resources to help manage patients with infectious diseases</td>
</tr>
<tr>
<td>• Demonstrate understanding of current recommendations for adult immunizations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Interpersonal and Communication Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Residents will communicate diagnosis, treatment plan and follow up care to patients and their families</td>
</tr>
<tr>
<td>• Residents will respect confidentiality for sensitive issues</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E. Professionalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Residents will recognize the importance of patient preferences when selecting diagnostic and therapeutic options</td>
</tr>
<tr>
<td>• Demonstrate ongoing commitment to self directed learning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F. Systems-Based Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Residents will be able to develop, implement and evaluate treatment plans for patients that include determining when to obtain consultations from Infectious Disease specialists</td>
</tr>
<tr>
<td>• Residents will be able to develop, implement and evaluate treatment plans that are cost effective and meet national quality standards for patients</td>
</tr>
<tr>
<td>• Residents will be able to demonstrate a commitment to the utilization of multidisciplinary health care teams and community resources and be familiar with role of the local health department</td>
</tr>
</tbody>
</table>

Literature search on assigned topics with attending discussions

Intern/Resident Signature ________________________________ Date ____________

Supervising Faculty _____________________________________ Date ____________

All items must be completed for rotation credit and checklist returned to the Department of Medicine.

Revised and Updated: 08/2008