

General Infectious Diseases Consult Service

Last Revised 6/12/18 – R Benefield

Preceptors:

*Russell Benefield, Pharm.D., BCPS-AQ ID

Tristan Timbrook, Pharm.D., MBA, BCPS

*Preceptor of record

Duration: 4 weeks

Site Description:

The General Infectious Diseases (ID) Consult Service is responsible for most inpatient ID consults for University Hospital (488 beds). There are 2 ID Consult Services at University Hospital consisting of a General ID Consult Service and an Immunocompromised ID Consult Service. The Immunocompromised ID Consult Service is responsible for seeing patients at University Hospital with a history of solid organ transplant or ventricular assist device placement. The General ID Consult Service is responsible for the remainder of patients at University Hospital, including some patients with immunocompromising conditions such as HIV/AIDS. The General ID Consult Service carries an average patient load of ~15-20 patients. The team consists of an attending physician, fellow, and occasionally 1 medical resident or student. An ID pharmacist (i.e. the preceptor) rounds regularly with the General ID service.

Role of Pharmacist:

The ID pharmacist is an integral member of the General ID Consult Service and is responsible for optimizing anti-infective therapy for all patients of his or her team.

Learning Experience Description:

The PGY-1 residents will assume the role of an ID pharmacist by participating actively in daily patient-care rounds, literature evaluation, patient presentations, disease and drug analyses, and discussions. The learning experience will consist of 4 weeks spent with the General ID consult service. The resident will round with the General ID team along with a second PGY-1 resident and the preceptor. Occasionally, a PGY-2 resident in Infectious Diseases will serve as a co-preceptor for the experience and round with General ID consult service as well. The resident will be responsible for following and making recommendations for half of the patients followed by the General ID Consult Service (while the co-resident assumes responsibility for the other half of the service), but is expected to be familiar with all patients followed by the General ID Consult Service. The resident will be challenged to develop individualized therapeutic recommendations and monitoring plans daily. Development of critical thinking skills is paramount in this learning experience. The General ID team has daily rounds in the afternoons, usually from 1-6 pm. The resident will be responsible to round for the entire period the team is rounding.

Readings and Preparatory Work:

The resident is expected to identify his or her own search strategy to retrieve relevant readings and literature with general guidance and supplementation from the preceptor. A core topic list in clinical microbiology, antimicrobials, and infectious syndromes is provided at the end of this learning description. It should be considered as the minimum necessary to develop a foundational knowledge base in infectious diseases. Additional reading will be necessary to meet the needs of patients followed by the General ID Consult Service.

Presentation Description:

The resident will prepare and lead topic discussions on specific topics related to infectious diseases with emphasis on medical microbiology and antimicrobial pharmacotherapy. Operational and antimicrobial stewardship issues will also be presented and discussed with the preceptor. Patient care plans will be presented multiple times daily to the preceptor. Additionally, in-services on a range of infectious diseases topics may be presented to the ID team.

Typical Daily/Weekly/Monthly Activities:

Hours vary depending on the patient load and rounding schedule of the consult services, as well as the level of preparation of the resident. In general, the learning experience hours will be from 8:00 am to 6:30 pm Monday through Friday. Residents may need to come in earlier or stay later to meet patient care needs. Supplemental reading and preparation for topic discussions will require an additional time commitment outside of the learning experience.

Morning meetings with the preceptor will be held Monday through Friday from 11:00 AM to 12:00 or 12:30 PM barring exceptional circumstances. This time is intended for daily presentations of patient care plans, disease and drug reviews, and operational/stewardship issues. Additionally, the resident is expected to attend the weekly Infectious Diseases Core Curriculum Conferences (Monday mornings from 8:00-9:00 am), Fellows' Case Conference and Journal Club (Wednesday afternoons from 12:00-1:00 pm), and Case Conferences (Thursday afternoons from 4:00-5:00 pm).

The resident will also be expected to complete a longitudinal project over the course of the learning experience that benefits our antimicrobial stewardship program. These projects might include completion of a medication use evaluation (MUE), development of educational materials related to antimicrobial use, presentation of an ID-related journal article, or possibly participation in some of the antimicrobial stewardship team's direct patient care activities (e.g. restricted antimicrobial approval, review of patients with positive blood cultures). Project identification will occur during the first week of the learning experience in conjunction with the antimicrobial stewardship team and the preceptor. The residents may be asked to complete more than one stewardship-related project if the General ID Consult Service workload is below average.

Resident Expectations:

The resident is expected to serve the team in the role of the ID pharmacist to the best of his/her ability by participating actively in daily patient-care rounds, literature evaluation, patient presentations, and disease and drug analyses and discussions. The resident is expected to work to care for patients, read, and discuss patients for as long as it takes to ensure best patient care. It is expected that residents are on time, focused on exceptional patient care, and display themselves in a professional manner at all times.

Expected Resident Progression:

Prior to Day 1:

- Residents will review the learning experience description prior to the first day of the learning experience.
- Residents should communicate with the preceptor at least 1 week prior to the beginning of the learning experience to clarify logistical considerations for first day of learning experience
- Residents will develop 4-6 personalized learning objectives for the learning experience and bring a copy of them to the first day of learning experience
- Residents will email any learning experience conflicts (e.g. interviews, staffing obligations, travel) to the preceptor prior to the first day of learning experience
- The preceptor will provide a schedule with locations and meeting times for the learning experience
- The preceptor will ensure access to the shared General ID Consult Service team list prior to the start of the learning experience
- Residents may choose to review local policies and guidelines on Pulse related to antimicrobial use, or begin their core reading assignments, but this is not expected prior to the start of the learning experience.

Day 1:

- Residents will meet with the preceptor in the morning to orient to the learning experience. Residents should be prepared to describe their prior infectious diseases experiences, baseline strengths, and targeted areas for improvement during the learning experience.
- The preceptor will orient the residents to the daily, weekly, and longitudinal activities in detail, including composition of the general ID team, attending style, workflow, and location of weekly conferences. The preceptor will also review expectations of the resident, including communication with fellow clinical pharmacists, documentation of clinical recommendations, and emphasis on how the resident can provide value to the interdisciplinary team. A brief discussion of how to "work up" patients on an ID consult service will be provided, from the preceptor's perspective.
- The resident will be expected to work up half of the patients followed by the General ID Consult Service (generally ~7-10 patients), with coaching and support from the preceptor.
- Residents may be required to attend Core Curriculum Conference on the first day of the learning experience.

Week 1:

- The residents are expected to integrate themselves into the interdisciplinary team and establish productive, collaborative, professional relationships.

- The residents should be able to gather common information related to the care of most patients with infectious problems (e.g. high value labs, vitals, medication history, antibiotic allergies).
- Patient care plans should reflect an increasing knowledge base in ID from core reading assignments.
- Residents should be relaying the ID team's plans of care to the primary team pharmacists either in person or by documentation of I-vents.
- Residents should identify recommendations for optimal anti-infective management and discuss questions with the preceptor during daily morning meetings.
- Local policies and guidelines should be utilized and referenced during rounds, when applicable.
- Residents should be developing a list of "high-value" tertiary references related to infectious diseases, and should be able to use PubMed and other resources to identify relevant literature to guide patient care decisions.
- Residents should strive to complete their core reading assignments in clinical microbiology by the end of the first week.
- Infectious syndromes along with recommended anti-infective therapies and institutional policies/procedures may be discussed as time allows and applied to patients on service.
- Residents should select a longitudinal antimicrobial stewardship project to complete during the 4-week experience.

Week 2:

- By the midpoint of the learning experience, the resident should be fully integrated into the general ID team, and able to work up half the general ID service patients. Less preceptor oversight should be required for the simpler patients with infections commonly seen by the General ID Consult Service (e.g. MSSA prosthetic joint infection).
- Residents should demonstrate increased ability to recognize optimal anti-infective management for a variety of disease states and be able to explain their rationale with evidence-based literature or guideline recommendations, when possible.
- The residents should emerge as a trusted resource for the General ID team for questions about medication therapy and optimal dosing strategies.
- Residents should have completed their core reading assignments in clinical microbiology by Week 2, and should have reviewed at least 3 antibiotic classes by the end of week 2.
- Ongoing reading about various infectious syndromes and their application to patients followed by the General ID Consult Service should be occurring.
- The residents should be making progress on their longitudinal antimicrobial stewardship project (e.g. collecting data for MUE)
- Feedback regarding strengths and areas of improvement, for the resident, preceptor, and learning experience, should be drafted in preparation for the midpoint evaluation to be held on the last day of Week 2.

Week 3:

- By the end of week 3, the resident should still be able to work up half the general ID service patients while being sought out by the general ID team for therapeutic recommendations and assistance with drug information questions.
- The resident should be able to competently care for the more complex patients followed by the General ID Consult Service with progressively less preceptor support.
- The resident should be able to round independently with the General ID Consult Service by the end of week 3.
- Residents should start individualizing therapy regimens for each patient by beginning to understand the primary literature behind guideline recommendations and applying pharmacokinetic/pharmacodynamics principles to dosing regimens, when applicable.
- Residents should strive to complete their core reading assignments of the remaining antibiotic classes by the end of week 3.
- Ongoing reading about various infectious syndromes and their application to patients followed by the General ID Consult Service should be occurring.
- The residents should be finalizing their longitudinal antimicrobial stewardship projects (e.g. finishing data collection and summary for MUE) and submitting to their preceptor for feedback.

Week 4:

- By the end of the learning experience, the resident should be able to round independently with the General ID Consult Service.
- The resident should be viewed as the drug expert of the interdisciplinary team and individualize anti-infective regimens and dosing for every patient.
- Residents should complete all core reading assignments by Week 4.
- The longitudinal antimicrobial stewardship projects should have been revised with any preceptor feedback and submitted in final form before the end of the learning experience.
- Feedback regarding strengths and areas of improvement, for the resident, preceptor, and learning experience, should be drafted in preparation for the final summative evaluation on the last day of the learning experience.
- On the Friday of Week 4, the residents will prepare a pass-off summary to the pharmacist, or pharmacists, taking over the service.

Evaluation:

The resident will receive regular oral feedback regarding his or her thought processes, therapeutic plans, and follow-up. The resident will have formative snapshot self and preceptor evaluations at the midpoint and summative self and preceptor evaluations of all goals at the end of the learning experience. The resident will complete preceptor and learning experience evaluations at the end of the learning experience. The evaluations will be documented in PharmAcademic™ within 7 days after completion of the learning experience.

Competency Areas, Goals, Objectives, and Activities Taught and Evaluated

<i>Outcomes, Goals, Objective Number & Description</i>	<i>Methods</i>	<i>Learning Experience Activities</i>
Outcome R1: Patient Care		
Goal R1.1 In collaboration with the health care team, provide safe and effective patient care to a diverse range of patients, including those with multiple co-morbidities, high-risk medication regimens, and multiple medications following a consistent patient care process		
OBJ R1.1.1 Interact effectively with health care teams to manage patients' medication therapy	Modeling, Coaching, Facilitation	<ul style="list-style-type: none"> ▪ Daily rounding with the General ID Consult Service ▪ Develop productive, collaborative, professional relationships with each team ▪ Recommend treatment and monitoring plans to the ID consult teams clearly and respectfully ▪ Communicate with primary teams to ensure implementation of the ID consult services' preferred plans of care
OBJ R1.1.4 Analyze and assess information on which to base safe and effective medication therapy	Direct Instruction, Modeling, Coaching, Facilitation	<ul style="list-style-type: none"> ▪ Develop knowledge base in medical microbiology and ID pharmacotherapy via independent reading and directed topic discussions with preceptor ▪ Self-directed reading/literature review to take care of patients followed by the ID consult services or prepare for topic discussions ▪ Develop or refine process for collecting and assessing patient information ▪ Discern infectious problems from other issues for patients followed by the ID consult services
OBJ R1.1.5 Design or redesign safe and effective patient-centered therapeutic regimens and monitoring plans (care plans)	Modeling, Coaching	<ul style="list-style-type: none"> ▪ Weigh risks and benefits of possible therapies and recommend the "best" treatment based on patient-specific factors ▪ Redesign the pharmacotherapy plans to achieve stated goals and outcomes. ▪ Discuss individualized plans with preceptor daily
OBJ R1.1.6 Ensure implementation of therapeutic regimens and monitoring plans (care plans) by taking appropriate follow-up actions	Direct Instruction, Modeling, Coaching, Facilitation	<ul style="list-style-type: none"> ▪ Communicate individualized pharmacotherapy plan to the appropriate members of the ID consult teams ▪ Communicate plans verbally and by chart documentation with clinical pharmacists and other members of a primary team ▪ Work with central pharmacy to ensure access to specialty drugs for patients of the ID consult service when necessary
Goal R1.3 Prepare, dispense, and manage medications to support safe and effective drug therapy for patients		
OBJ R1.3.2 Manage aspects of the medication-use process related to formulary management	Direct Instruction, Modeling, Coaching	<ul style="list-style-type: none"> ▪ Design treatment plans that take into account antimicrobial formulary status ▪ Identify a situation(s) where a non-formulary medication is warranted based upon evidence-based medicine, literature, and/or practice guidelines
Outcome R3: Leadership and Management		

Goal R3.2 Demonstrate management skills		
R3.2.4 Manages one's own practice effectively	Modeling, Coaching, Facilitation	<ul style="list-style-type: none"> ▪ Define personal goals for one's own clinical practice ▪ Self-assess progress towards each practice goal ▪ Create plan for self-improvement towards each practice goal ▪ Defend value of one's own clinical practice from perspective of quality and financial impact

Clinical Microbiology

Guidance:

We could spend the whole month reviewing clinical microbiology and it would not be enough time. Spend some time to prioritize what you need to know as a high-performing clinical pharmacist about each organism. Some suggested questions you may want to answer about each organism are listed below, but this is a very open-ended assignment. Please view these questions as a starting place and deviate based on what you believe you need to know as a clinical pharmacist. Additionally, spend some time to prioritize which organisms to review since you won't be able to review them all this month. A list of commonly encountered organisms is provided in the table below, and I would recommend prioritizing your time towards them. It's up to you to decide where to go for information. Some references that have been helpful to previous residents are listed below, but there are several alternatives that may be more helpful to you.

Possible Questions to Answer About Each Organism:

1. Where is this organism found in the environment, or where is it considered normal host flora?
2. What are risk factors for infection with this organism?
3. What clinical manifestations are common vs. possible during infection with this organism?
4. What is the treatment of choice and alternatives for this organism?
5. What mechanisms of resistance do I need to consider when selecting therapy for this organism?
6. When should I suspect this organism based on preliminary information from our microbiology lab?

Suggested Organisms to Review:

Gram-Positives	Gram-Negatives	Miscellaneous
<ol style="list-style-type: none"> 1. Aerobes <ol style="list-style-type: none"> a. <i>Enterococcus</i> spp. b. Coagulase-negative staphylococci c. <i>Staphylococcus aureus</i> d. <i>Streptococcus pneumoniae</i> e. Viridans group streptococci f. Beta-hemolytic streptococci g. <i>Listeria monocytogenes</i>^a 2. Anaerobes <ol style="list-style-type: none"> a. Actinomyces^a b. <i>Clostridium difficile</i> c. <i>Propionibacterium acnes</i> 	<ol style="list-style-type: none"> 1. Enterobacteriaceae <ol style="list-style-type: none"> a. <i>E. coli</i> b. <i>Klebsiella</i> spp. c. <i>Proteus</i> spp. d. <i>Enterobacter</i> spp. e. <i>Citrobacter</i> spp. f. <i>Serratia</i> g. <i>Morganella</i>^a 2. Non-fermenters <ol style="list-style-type: none"> a. <i>Pseudomonas aeruginosa</i> b. <i>Acinetobacter</i> spp. c. <i>Stenotrophomonas maltophilia</i> 3. Other aerobes <ol style="list-style-type: none"> a. <i>Haemophilus</i> spp. b. <i>Moraxella catarrhalis</i> c. <i>Neisseria</i> spp.^a 4. Anaerobes <ol style="list-style-type: none"> a. <i>Bacteroides</i> spp. b. Other Gram-negative rods such as <i>Fusobacterium</i>, <i>Prevotella</i>, etc. 	<ol style="list-style-type: none"> 1. The atypical respiratory pathogens (<i>Legionella</i> spp., <i>Chlamydia pneumoniae</i>, <i>Mycoplasma</i>) 2. Atypical mycobacteria^a 3. <i>Nocardia</i> spp.^a

^aSecond-line. Although important, consider omitting if struggling to find time to review other organisms.

Suggested references:

1. Any of the chapters in Mandell's (available electronically through Clinical Key) related to your organism of interest
2. A clinical microbiology textbook. Several are available electronically through Clinical Key, Access Medicine, etc.
3. The Hopkins Antibiotic Guide or Sanford Guides, but the information is usually too superficial to rely on as your only source of information
4. Guidelines from IDSA or other organizations if they exist (e.g. MRSA, C. difficile)
5. Review articles about an organism, or more often about a specific question related to an organism (e.g. mechanisms of antibiotic resistance)
6. Our antibiogram
7. Previous course notes from pharmacy school

Antimicrobials

Guidance:

Similar to clinical microbiology, this topic is too big to be able to learn "everything" that is important for you to know about antimicrobials in one infectious diseases clinical learning experience. Please set reasonable standards for what you can accomplish this month. As with the clinical microbiology knowledge building activities, be sure to prioritize your time towards the antimicrobials and information about them that you think is most important for you to know as a clinical pharmacist. I have listed some suggestions below, but ultimately it is up to you to determine what you want to learn and where to turn for information. I would recommend narrowing your focus to antibiotics at this point in your careers and omitting antifungal, antiviral, or other therapies.

Possible Questions to Answer About Each Antimicrobial:

1. What is the mechanism of action?
2. What is the spectrum of activity?
3. What side effects should I anticipate with this therapy?
4. Which monitoring parameters are recommended during this therapy and how often should I check them?
5. What are "typical" PK parameters for a standard patient, and how do those change for certain patient populations?
6. Which pharmacodynamic parameter best describes the effectiveness of this antibiotic?
7. What are some common mechanisms of resistance to this antibiotic?
8. How is this antibiotic administered?
9. How much does this antibiotic cost?

Suggested Antibiotic Classes to Review:

Drug Class	Specific Agents
Penicillins	<ol style="list-style-type: none"> 1. Penicillin 2. Amoxicillin 3. Ampicillin 4. Amoxicillin-clavulanate 5. Ampicillin-sulbactam 6. Nafcillin 7. Oxacillin 8. Dicloxacillin 9. Piperacillin-tazobactam
Cephalosporins	<ol style="list-style-type: none"> 1. Cefazolin 2. Cephalexin 3. Cefuroxime 4. Cefoxitin/cefotetan 5. Ceftriaxone/Cefotaxime 6. Ceftazidime 7. Cefepime 8. Ceftaroline 9. Ceftazidime-avibactam 10. Ceftolozane-tazobactam 11. Cefiderocol^a 12. Ceftobiprole^a
Carbapenems	<ol style="list-style-type: none"> 1. Imipenem-cilastatin 2. Meropenem 3. Doripenem^a 4. Ertapenem 5. Meropenem-vaborbactam 6. Imipenem/cilastatin-relebactam^a 7. Sulopenem^a
Monobactam	Aztreonam
Fluoroquinolones	<ol style="list-style-type: none"> 1. Ciprofloxacin 2. Levofloxacin 3. Moxifloxacin

	<ol style="list-style-type: none"> 4. Gemifloxacin^a 5. Delafloxacin^a 6. Zabofloxacin^a 7. Lascufloxacin^a
Broad Gram-positive agents	<ol style="list-style-type: none"> 1. Vancomycin 2. Daptomycin 3. Linezolid 4. Tedizolid^a 5. Cadazolid^a 6. Telavancin^a 7. Dalbavancin and oritavancin^a 8. Cefilavancin^a
Macrolides	<ol style="list-style-type: none"> 1. Azithromycin 2. Clarithromycin 3. Erythromycin 4. Telithromycin^a 5. Solithromycin^a
Tetracyclines	<ol style="list-style-type: none"> 1. Doxycycline 2. Minocycline 3. Tigecycline 4. Tetracycline 5. Omadacycline^a 6. Eravacycline^a
Aminoglycosides	<ol style="list-style-type: none"> 1. Amikacin^a 2. Gentamicin^a 3. Tobramycin^a 4. Plazomicin^a
Miscellaneous	<ol style="list-style-type: none"> 1. Rifampin 2. Metronidazole 3. Trimethoprim/sulfamethoxazole 4. Nitrofurantoin 5. Fosfomycin^a 6. Clindamycin 7. Polymixins^a 8. Iclaprim^a 9. Lefamulin^a 10. Fusidic acid^a

^aI would consider these a lower priority than the rest, but included for the sake of being complete.

Suggested References:

1. Any of the relevant chapters in Kucers' (available electronically through our library)—my preferred textbook for this topic, but often has too much detail for a new learner
2. Any of the relevant chapters in Mandell's
3. A number of antibiotic class reviews are available in PubMed
4. The Hopkins Guide or Sanford Guide for more superficial information
5. For some PK-related information you may need to review primary literature
6. Local antibiotic cost card

Infectious Syndromes

Guidance:

You should be able to describe the standard management of commonly encountered infections—both pharmacological management and non-pharmacological management (e.g. pull the line). You will be able to find clinical practice guidelines for many of the infections that you will encounter during your time with the ID consult services. While the ID consult services will often see more complicated patients that may require a deviation from clinical practice guidelines, it is critical that you are familiar with local and national guidelines for the management of various infections. A list of guidelines for infections commonly encountered during the ID consult learning experience is listed below. I would suggest reviewing them when you encounter a patient with one of these infections, rather than reading in isolation.

Possible Questions to Ask About the Management of Each Infection:

1. When should I suspect this infection (signs/symptoms, risk factors)?
2. What are the most likely organisms to be causing this infection in a "standard" patient?
3. What are the empiric antimicrobials of choice for this infection and alternatives?
4. What is the typical diagnostic work-up for this infection?
5. What non-pharmacological interventions are important for the management of this infection?
6. With optimal management, how long will it take for this infection to resolve?

Suggested Infections to Review:

1. Upper respiratory infections
2. Lower respiratory infections
3. Empyema
4. Urinary tract infections
5. Intra-abdominal infections
6. Endocarditis and other endovascular infections
7. Septic arthritis
8. Prosthetic joint infections
9. Skin and soft tissue infections
10. Catheter-related bloodstream infections
11. Cardiovascular device infections (e.g. VADs, pacemakers)
12. Meningitis and encephalitis
13. Brain abscess
14. Osteomyelitis
15. Vertebral osteomyelitis/Spondylodiscitis
16. Infectious diarrhea—particularly CDAD
17. Diabetic foot infections
18. Liver abscess
19. Invasive candidiasis

Suggested References:

1. Any of the relevant chapters in Mandell's
2. Clinical practice guidelines—IDSA guidelines are our standard but you may find others
3. Local guidelines for specific syndromes

IDSA Guidelines:

1. Healthcare-associated ventriculitis and meningitis
2. Hospital-acquired and ventilator-associated pneumonia
3. Candidiasis
4. Endocarditis management
5. Vertebral osteomyelitis
6. Skin and soft tissue infections
7. Prosthetic joint infections
8. Diabetic foot infections
9. MRSA
10. Catheter-associated urinary tract infection
11. Cardiovascular implantable electronic device infections
12. Uncomplicated cystitis and pyelonephritis
13. Clostridium difficile
14. Intra-abdominal infections
15. Management of catheter-related infections
16. Community acquired pneumonia
17. Asymptomatic bacteriuria
18. Outpatient parenteral anti-infective therapy
19. Diarrhea
20. Bacterial meningitis

Local Guidelines:

1. Antibiotic desensitization policy
2. Clostridium difficile-associated-disease treatment algorithm
3. Echinocandin approval guideline
4. Formulary restrictions policy – specifically related to restricted antibiotic approvals
5. Linezolid approval guideline
6. Renal dosage adjustment interchange
7. UTI diagnosis and treatment for IMR (can also be applied to many inpatient units)
8. Catheter related bloodstream infection policy

Suggested Timeline

		Morning Topic Discussion	External Reading Assignments	Longitudinal Project
Week 1	Monday	Orientation	<ul style="list-style-type: none"> ▪ Clinical Micro: <ul style="list-style-type: none"> ○ Gram positive ○ Gram negative ○ Other ▪ Infectious Syndromes: <ul style="list-style-type: none"> ○ Prosthetic joint infections and septic arthritis ○ Osteomyelitis ○ Endocarditis ○ Skin and soft tissue infections including diabetic foot infections ○ Vertebral osteomyelitis ▪ Antimicrobials: <ul style="list-style-type: none"> ○ Vancomycin and other broad-spectrum antimicrobials 	<ul style="list-style-type: none"> ▪ Project Selection ▪ Clarify expectations for project ▪ Early implementation (e.g. data collection, literature review)
	Tuesday	<ul style="list-style-type: none"> ▪ Patient discussions primarily ▪ Discussion of reading assignments as time allows 		
	Wednesday			
	Thursday			
	Friday			
Week 2	Monday	<ul style="list-style-type: none"> ▪ Patient discussions primarily ▪ Discussion of reading assignments as time allows 	<ul style="list-style-type: none"> ▪ Antimicrobials: <ul style="list-style-type: none"> ○ Penicillins ○ Cephalosporins ○ Carbapenems and Aztreonam ▪ Infectious Syndromes: <ul style="list-style-type: none"> ○ Upper and lower respiratory infections and empyema ○ Urinary tract infections ○ CDAD (infectious diarrhea more generally) ○ Intra-abdominal infections ○ Catheter-related bloodstream infections 	<ul style="list-style-type: none"> ▪ Steady progress on project implementation (e.g. wrapping up data collection) ▪ Early draft of project summary started (e.g. MUE summary, educational materials)
	Tuesday			
	Wednesday			
	Thursday			
	Friday	Midpoint Evaluations		
Week 3	Monday	<ul style="list-style-type: none"> ▪ Patient discussions primarily ▪ Discussion of reading assignments as time allows 	<ul style="list-style-type: none"> ▪ Antimicrobials: <ul style="list-style-type: none"> ○ Fluoroquinolones ○ Macrolides ○ Tetracyclines ▪ Infectious Syndromes: <ul style="list-style-type: none"> ○ Meningitis, encephalitis and brain abscess ○ Cardiovascular device-related infections ○ Liver abscess ○ Invasive candidiasis 	<ul style="list-style-type: none"> ▪ Project summary completed and submitted to preceptor for feedback
	Tuesday			
	Wednesday			
	Thursday			
	Friday			
Week 4	Monday	<ul style="list-style-type: none"> ▪ Patient discussions primarily ▪ Discussion of reading assignments as time allows 	<ul style="list-style-type: none"> ▪ Antimicrobials: <ul style="list-style-type: none"> ○ Aminoglycosides ○ Miscellaneous ▪ Infectious Syndromes: Miscellaneous 	<ul style="list-style-type: none"> ▪ Incorporate preceptor feedback into the project draft ▪ Submit final draft to preceptor for completion
	Tuesday			
	Wednesday	Final evaluations	N/A	