

**CCSAP 2022 Book 2 (*Infectious Diseases in the ICU*)**

**Release date: September 15, 2022**

**BCCCP test deadline: 11:59 p.m. (Central) on March 15, 2023**

**ACPE test deadline: 11:59 p.m. (Central) on September 15, 2025**



**Continuing Pharmacy Education (CPE) Credit:** The American College of Clinical

Pharmacy is accredited by the Accreditation Council for Pharmacy Education (ACPE) as a provider of continuing pharmacy education.

**CCSAP Target Audience:** The target audience for CCSAP 2022 Book 2 (*Infectious Diseases in the ICU*) is not only ICU and ED pharmacists across the spectrum of care but also any pharmacist caring for acutely ill patients whose management may be complicated by these challenging scenarios.

**Module I (4.0 CPE):** 0217-0000-22-194-H01-P

### **Chapter: MDR Gram-negative Pathogens**

#### **Learning Objectives**

1. Evaluate for the presence of gram-negative bacteria along with their corresponding resistance using novel diagnostic techniques.
2. Design an optimal treatment plan for Enterobacteriales infections based on patient-specific characteristics and antimicrobial resistance potential.
3. Design an optimal treatment plan for *Pseudomonas aeruginosa* infections based on patient-specific characteristics and antimicrobial resistance potential.
4. Design an optimal treatment plan for *Acinetobacter* infections based on patient-specific characteristics and antimicrobial resistance potential.
5. Design an optimal treatment plan for *Stenotrophomonas* infections based on patient-specific characteristics and antimicrobial resistance potential.
6. Develop an optimal treatment plan for multidrug-resistant gram-negative infections based on patient-specific characteristics and alternative dosing techniques.

### **Chapter: Resistant Gram-positive Pathogens**

#### **Learning Objectives**

1. Design optimal pharmacotherapy for critically ill patients with *Staphylococcus aureus* infection accounting for antimicrobial resistance, pharmacodynamics, and antimicrobial stewardship,
2. Design optimal pharmacotherapy for critically ill patients with enterococcal infection accounting for antimicrobial resistance, pharmacodynamics, and antimicrobial stewardship.
3. Justify modifications to pharmacotherapy regimens based on the likelihood of *Streptococcus* resistance.

## **Module II (4.0 CPE): 0217-0000-22-195-H01-P**

### **Chapter: *Clostridioides difficile***

1. Assess patient-specific risk factors of *Clostridioides difficile* infection (CDI).
2. Evaluate patients for CDI using appropriate clinical and laboratory data.
3. Design appropriate strategies for reducing CDI risk and prevention of outbreaks.
4. Develop evidence-based treatment plans for critically ill patients with CDI.
5. Design secondary prophylaxis regimens for patients with recent CDI.

### **Learning Objectives**

### **Chapter: Fungal Infections**

#### **Learning Objectives**

1. Evaluate a critically ill patient's risk of invasive fungal infection.
2. Evaluate the utility of prophylactic, empiric, or pre-emptive versus targeted therapy regimens for critically ill patients.
3. Design an effective treatment strategy for suspected or proven invasive fungal infection.
4. Distinguish key differences in the safety and efficacy of antifungal agents in the ICU.
5. Assess the appropriateness of antifungal dosing in critically ill patients.

## **Module III (4.5 CPE): 0217-0000-22-196-H01-P**

### **Chapter: Endocarditis**

#### **Learning Objectives**

1. Evaluate patients for infective endocarditis using appropriate clinical, laboratory, microbiological, and imaging data.
2. Design an appropriate empiric antimicrobial regimen for the treatment of presumed infective endocarditis while considering the likely infectious cause and risk factors.
3. Differentiate antimicrobial selection, the role of combination therapy, and duration for various organisms in native valve endocarditis versus prosthetic valve endocarditis.
4. Evaluate patient-specific factors to determine appropriate outpatient treatment for infective endocarditis.
5. Assess pharmacologic therapies in patients experiencing embolic phenomena.

### **Chapter: Febrile Neutropenia**

#### **Learning Objectives**

1. Evaluate the clinical and microbiological laboratory data necessary for the diagnosis of febrile neutropenia (FN).
2. Assess the usefulness of hematopoietic growth factors in a critically ill patient with neutropenia.
3. Analyze the role of prophylactic antimicrobials in patients with cancer at risk of infection.
4. Develop an empiric antimicrobial regimen for an ICU patient with neutropenia with persistent fever.
5. Design a therapeutic treatment plan for a critically ill patient with FN presenting to the ICU.

**Module IV (5.5 CPE): 0217-0000-22-197-H01-P**

**Interactive Case: Therapeutic Drug Monitoring**

**Learning Objectives**

1. Evaluate pharmacokinetic and pharmacodynamic alterations expected in critically ill patients.
2. Assess antibiotics and antifungals that are appropriate for therapeutic drug monitoring (TDM).
3. Evaluate available data on TDM of antibiotics and antifungals in critically ill adult patients.
4. Design an appropriate drug regimen for a patient with an antibacterial/antifungal requiring TDM.

**Interactive Case: Intra-abdominal Infections and Enterocutaneous Fistulas**

**Learning Objectives**

1. Classify intra-abdominal infections (IAIs) by cause and by risk factors.
2. Assess general supportive care strategies and the role of source control procedures for IAIs.
3. Design an appropriate empiric antimicrobial regimen for IAIs.
4. Design an appropriate duration of antimicrobials for IAIs.
5. Assess patients for pathophysiology and outcomes associated with enterocutaneous fistulas (ECFs).
6. Design a therapeutic regimen for patients with an ECF.

**Interactive Case: Infections in Patients with Mechanical Circulatory Support Devices**

**Learning Objectives**

1. Design an evidence-based perioperative antimicrobial prophylactic regimen in patients undergoing durable ventricular assist device (VAD) implantation.
2. Analyze the evidence surrounding prophylactic antimicrobial use in patients receiving extracorporeal membrane oxygenation (ECMO).
3. Evaluate for device-related infections encountered in patients undergoing ECMO support or receiving a durable VAD implant.
4. Design an antimicrobial treatment plan for an infection in patients undergoing ECMO support or receiving a durable VAD implant.