

# PSAP-VII • CRITICAL AND URGENT CARE

## MODULE II LEARNING OBJECTIVES

### FUNGAL INFECTIONS IN THE INTENSIVE CARE UNIT

1. Classify a critically ill patient's risk of invasive fungal infection.
2. Construct a reasonable prophylactic, preemptive, or empiric antifungal therapy regimen for a patient in the intensive care unit (ICU).
3. Develop an algorithm for routine surveillance of invasive fungal infections in the ICU.
4. Distinguish between each of the newer antifungal agents and their relative advantages and disadvantages in the ICU setting.
5. Justify antifungal treatment algorithms designed for the ICU based on current evidence regarding appropriateness.

### CONTEMPORARY ISSUES AND NOVEL STRATEGIES TO MANAGE INFECTIONS IN THE CRITICALLY ILL

1. Discuss antibiotic resistance issues that occur for patients in intensive care units (ICUs).
2. Design individualized or global strategies, by interpreting antibiotic susceptibility testing, to prevent further resistance and manage patient-specific infections.
3. Assess the antibiotic resistance issues addressed by antimicrobial agents in late-stage clinical development.
4. Apply the pharmacodynamic principles that justify continuous infusion and extended infusion of  $\beta$ -lactam antibiotics to individual patient care situations.
5. Discuss the features and advantages of smart pump technology to facilitate continuous or extended intravenous infusions.
6. Demonstrate how currently available rapid molecular diagnostics can be used to improve empiric antimicrobial selection in the ICU.
7. Evaluate the necessary components of clinical decision support software used to improve antimicrobial use in critically ill patients.
8. Discuss the steps required to overcome barriers and implement new laboratory and information systems to enhance patient care.

### UPDATE IN SEVERE SEPSIS AND SEPTIC SHOCK MANAGEMENT

1. Construct a sepsis order set that focuses on initial resuscitation and antimicrobial management using an understanding of incidence, common sources of infection, and microbial etiologies.
2. Design a treatment plan for appropriate volume resuscitation in an adult with sepsis.
3. Devise a treatment strategy for empiric antimicrobial management in an adult patient with sepsis who presents from the community or hospital setting.
4. Evaluate the benefits and risks associated with adjunctive sepsis therapies including corticosteroids and drotrecogin alfa (activated).
5. Assess experimental sepsis therapies and diagnostic biomarkers in the context of the sepsis pathophysiology.
6. Justify the importance of implementing a standardized sepsis management algorithm in the emergency department, general hospital ward, and intensive care unit.

### THROMBOTIC AND BLEEDING DISORDERS IN THE CRITICALLY ILL

1. Evaluate pharmacologic and nonpharmacologic interventions for thromboprophylaxis with respect to efficacy, safety, and cost in critically ill patients.
2. Design optimal dosing plans for low-molecular-weight heparin in critically ill patients with kidney failure.
3. Develop a patient-specific treatment plan for acute massive and submassive pulmonary embolism including anticoagulation, vena cava filter placement, and thrombolysis.
4. Design interventions for preventing and identifying heparin-induced thrombocytopenia (HIT) in critically ill patients.
5. Devise patient-specific treatment plans for HIT with and without thrombosis in specific critically ill populations such as cardiac surgery and kidney failure.
6. Justify indications for the use of recombinant factor VII and prothrombin complex concentrates in critically ill patients with bleeding disorders.