

**** Materials for this course will release on 04/14/2021 ****

Critical Care Pharmacy Specialty Recertification Literature Study: Module 1A-B (Cert # L219136)

Teaser: The Literature Study Module provides immediate access to peer-selected, contemporary articles that are relevant to specialty practice. After learners review the content, they must successfully complete an online assessment to earn recertification credit.

Tag: Certifications; Critical Care



ACPE Numbers: Various – see listing below

Pre-Sale Date: 03/17/2021

Content Release Date: 04/14/2021

Expiration Dates: 10/19/2021

Activity Type: Application-based

CE Credits: 10.00 hours (BPS and ACPE)

Activity Fee: \$55 (ASHP member); \$110 (non-member)

Accreditation for Pharmacists



The American Society of Health-System Pharmacists is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.

Target Audience

These Literature Studies are designed to help board-certified pharmacists who are seeking recertification credit hours to maintain their Board of Pharmacy Specialties (BPS).

Activity Overview

The Literature Study Module is intended for board certified pharmacists in need of recertification credit and is designed based on the content outline developed by the Board of Pharmacy Specialties (BPS). This module consists of 2 online home study activities (see table below). Each activity is designed to assess the learners' ability to analyze and apply peer-selected contemporary articles to practice and includes a short video for enhanced learning and understanding.

Module 1A: Devices: This module focuses on infectious diseases. It includes articles related to antimicrobial dosing, treatment of methicillin-resistant *Staphylococcus aureus* bloodstream infections, and surgical prophylaxis.

Module 1B: This module includes articles related to the management of the critically ill patient. It includes guidelines related to management of cerebral edema and bleeding in patients on oral anticoagulants, in addition to literature on the use of sedation in critically ill patients, and neuromuscular blockade in acute respiratory distress syndrome.

Learners will be required to review the content and complete the associated online assessments. The learner must be able to correctly answer the questions based upon their interpretation of the content, as well as "baseline specialty specific knowledge and/or easily retrievable information." For purposes of this Literature Study, "baseline specialty specific knowledge and/or easily retrievable information" is defined as product labeling and well-established standards of practice in the specialty practice.

These activities are part of the ASHP professional development program for BCCCP recertification approved by the BPS.

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Recertification Credit*

Board certified pharmacists are eligible to receive up to 10 hours of recertification credit for completing this module. To earn recertification credit, learners must review the activity content and successfully complete the online assessments by the deadline. Only completed assessments will be eligible for credit; no partial or incomplete assessments will be processed. You are allowed only one attempt to successfully complete this assessment.

Learning Activity	ACPE Number	Credit Hours	*Assessment Pass Point
Pharmacotherapy and Critical Care Literature Study Module 1A: Infectious diseases	0204-0000-21-957-H01-P	6.00	TBD
Critical Care Pharmacy Literature Study Module 1B: Critical Care Updates	0204-0000-21-964-H01-P	4.00	TBD

Articles and Learning Objectives

Module 1A: Infectious diseases

ACPE Number: 0204-0000-21-957-H01-P

This module focuses on infectious diseases. It includes articles related to antimicrobial dosing, treatment of methicillin-resistant *Staphylococcus aureus* bloodstream infections, and surgical prophylaxis.

Rybak MJ, Le J, Lodise TP et al. Therapeutic monitoring of vancomycin for serious methicillin-resistant *Staphylococcus aureus* infections: a revised consensus guideline and review by the American Society of Health-System Pharmacists, the Infectious Diseases Society of America, the Pediatric Infectious Diseases Society, and the Society of Infectious Diseases Pharmacists. *Am J Health-Syst Pharm.* 2020; 77:835-63.

Learning Objectives:

- Describe the revised consensus guideline from the American Society of Health-System Pharmacists (ASHP), the Infectious Diseases Society of America (IDSA), the Pediatric Infectious Diseases Society (PIDS), and the Society of Infectious Diseases Pharmacists (SIDP) for therapeutic monitoring of vancomycin for serious methicillin-resistant *Staphylococcus aureus* (MRSA) infections.
- Apply dosing and therapeutic monitoring recommendations for vancomycin in patients with serious methicillin-resistant *Staphylococcus aureus* (MRSA) infections based on the 2020 revised consensus guideline and review from the American Society of Health-System Pharmacists (ASHP), the Infectious Diseases Society of America (IDSA), the Pediatric Infectious Diseases Society (PIDS), and the Society of Infectious Diseases Pharmacists (SIDP).

Cusumano JA, Klinker KP, Huttner A et al. Towards precision medicine: therapeutic drug monitoring-guided dosing of vancomycin and beta-lactam antibiotics to maximize effectiveness and minimize toxicity. *Am J Health-Syst Pharm.* 2020; 77:1104-12.

Learning Objectives:

- Describe the use of precision dosing through therapeutic drug monitoring of vancomycin and beta-lactam antibiotics to maximize effectiveness and minimize toxicity in critically ill, obese, and older adult.
- Develop recommendations for the use of precision dosing through therapeutic drug monitoring of vancomycin and beta-lactam antibiotics to maximize effectiveness and minimize toxicity in critically ill, obese, and older adult.

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Abdul-Aziz MH, Alffenaar JWC, Bassetti M et al. Antimicrobial therapeutic drug monitoring in critically ill adult patients: a position paper. *Intensive Care Med.* 2020; 46:1127-53.

Learning Objectives:

- Describe the position paper from the European Society of Intensive Care Medicine (ESICM), European Society of Clinical Microbiology and Infectious Diseases (ESCMID), International Association of Therapeutic Drug Monitoring and Clinical Toxicology (IATDMCT), and International Society of Antimicrobial Chemotherapy (ISAC) about the use of therapeutic drug monitoring (TDM) for antimicrobial agents in critically ill adults.
- Develop recommendations for the use of therapeutic drug monitoring (TDM) for antibacterial, antifungal, and antiviral agents as part of routine clinical practice for critically ill adults.

Lodise TP, Rosenkranz SL, Finnemeyer M et al. The Emperor's New Clothes: PRospective Observational Evaluation of the Association Between Initial Vancomycin Exposure and Failure Rates Among ADult HospitalizEd Patients With Methicillin-resistant *Staphylococcus aureus* Bloodstream Infections (PROVIDE). *Clin Infect Dis.* 2020; 70:1536-45.

Learning Objectives:

- **Discuss the methods used in the PROVIDE study that evaluated the relationship between vancomycin exposure and treatment failure rates in hospitalized adults with methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections.**
- **Apply the efficacy and safety findings from the PROVIDE study to the dosing of vancomycin based on area-under-the-curve (AUC) thresholds in hospitalized adults with methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections.**
- **Recommend appropriate vancomycin dosing and pharmacokinetic monitoring for hospitalized adults with methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections.**

Tong SYC, Lye DC, Yahav D et al. Effect of vancomycin or daptomycin with vs without an antistaphylococcal β -lactam on mortality, bacteremia, relapse, or treatment failure in patients with MRSA bacteremia: a randomized clinical trial. *JAMA.* 2020; 323:527-37.

Learning Objectives:

- **Describe the methods used in the CAMERA2 study of the addition of an antistaphylococcal β -lactam antibiotic to standard vancomycin or daptomycin therapy for adults with methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia.**
- **Apply the efficacy and safety findings from the study of adding an antistaphylococcal β -lactam antibiotic to standard vancomycin or daptomycin therapy for adults with methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia.**
- **Develop recommendations for the addition of an antistaphylococcal beta-lactam to standard vancomycin or daptomycin therapy for adults with methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia.**

Branch-Elliman W, O'Brien W, Strymish J et al. Association of duration and type of surgical prophylaxis with antimicrobial-associated adverse events. *JAMA Surg.* 2019; 154:590-8.

Learning Objectives:

- Describe the study of the association of the type and duration of postoperative antimicrobial prophylaxis with adverse events.
 - Develop recommendations for the type and duration of postoperative antimicrobial prophylaxis.
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Module 1B: Critical Care Updates

ACPE Number: 0204-0000-21-964-H01-P

This module includes articles related to the management of the critically ill patient. It includes guidelines related to management of cerebral edema and bleeding in patients on oral anticoagulants, in addition to literature on the use of sedation in critically ill patients, and neuromuscular blockade in acute respiratory distress syndrome.

Cook AM, Jones GM et al. Guidelines for the acute treatment of cerebral edema in neurocritical care patients. *Neurocrit Care*. 2020; 32:647-666.

Learning Objectives:

- Describe the Neurocritical Care Society guidelines for the acute treatment of cerebral edema in neurocritical care patients
- Develop recommendations for the acute treatment of cerebral edema in patients with subarachnoid hemorrhage (SAH), traumatic brain injury (TBI), acute ischemic stroke (AIS), intracerebral hemorrhage (ICH), bacterial or tubercular meningitis, or hepatic encephalopathy (HE).

Tomaselli GF, Maheffey KW, Cuker A et al. 2020 ACC expert consensus decision pathway on management of bleeding in patients on oral anticoagulants. *J Am Coll Cardiol*. 2020; 76:594-622.

Learning Objectives:

- Describe the 2020 American College of Cardiology (ACC) expert consensus decision pathway on management of bleeding in patients receiving oral anticoagulants.
- Develop recommendations for the management of bleeding in patients receiving direct-acting oral anticoagulants (DOACs) or vitamin K antagonists (VKAs).

Shehabi Y, Howe BD, Bellomo R et al. Early sedation with dexmedetomidine in critically ill patients. *N Engl J Med*. 2019; 380:2506-17.

Learning Objectives:

- Describe the Sedation Practice in Intensive Care Evaluation (SPICE) III study of dexmedetomidine use for early sedation in critically ill adults undergoing mechanical ventilation.
- Develop recommendations for the use of early sedation in critically ill adults undergoing mechanical ventilation.

Olsen HT, Nedergaard HK, Strøm T et al. Nonsedation or light sedation in critically ill, mechanically ventilated patients. *N Engl J Med*. 2020; 382:1103-11.

Learning Objectives:

- Describe the NONSEDA study comparing (1) no sedation with (2) light sedation plus daily interruption of sedation in critically ill, mechanically ventilated patients.
- Develop recommendations for the use of sedation in critically ill, mechanically ventilated patients.

The National Heart, Lung, and Blood Institute PETAL Clinical Trials Network. Early neuromuscular blockade in the acute respiratory distress syndrome. *N Engl J Med*. 2019. 380:1997-2008.

Learning Objectives:

- Describe the Reevaluation of Systemic Early Neuromuscular Blockade (ROSE) trial.
- Develop recommendations for the use of early continuous neuromuscular blockade in patients with acute respiratory distress syndrome (ARDS) receiving mechanical ventilation.

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Disclosures

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All planners, presenters, and reviewers of this session report no financial relationships relevant to this activity.

Methods and CE Requirements

Activities consist of educational materials, assessments, and activity evaluations. In order to receive continuing pharmacy education credit, learners must:

- Complete the attestation statement
- Review all content
- Complete and pass the assessments
- Complete the evaluations

Follow the prompts to claim, view, or print the statement of credit within 60 days after completing the activity.

System Technical Requirements

Courses and learning activities are delivered via your Web browser and Acrobat PDF. For all activities, you should have a basic comfort level using a computer and navigating web sites.

View the [minimum technical and system requirements](#) for learning activities.

Development

These activities were developed by ASHP.