

**Materials for this course will release 09/21/2022**

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**Critical Care Pharmacy Specialty Review Course for Recertification, Core Therapeutic Modules + RECERT EXAMS Package (Cert # L229264)**

**Teaser:** This online course will help you earn BCCCP recertification credit. With this course, get comprehensive, practical guidance, with a variety of complex cases, including references for further study.

**Tag:** Certifications; Critical Care

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**ACPE Numbers:** Various – see listing below

**Pre-Sale Date:** 08/31/2022

**Content Release Date:** 09/21/2022

**Expiration Date:** 09/19/2023

**Activity Type:** Application-based

**CE Credits:** 19 (BPS and ACPE) contact hours)

**Activity Fee:** \$475 (ASHP member); \$675 (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 recertification activities are intended for board certified pharmacists seeking to update their knowledge and skills in critical care pharmacy.

**Activity Overview**

This course is intended for BCCCPs in need of recertification credit and is designed based on the content outline developed by the Board of Pharmacy Specialties (BPS) to provide an overview of recent standards and guidelines that specialists should be familiar with in practice. The course uses a case-based approach to discuss patient care issues. In this series, faculty will:

- Review pertinent clinical topics and practice skills
- List valuable resources for further self-study

This online course consists of 14 activities (see tables below) and provides up to 19 contact hours of continuing pharmacy education credit and/or recertification credit.

**Recertification Credit\***

Board certified pharmacists are eligible to receive up to 19 contact hours of recertification credit for completing this course. To earn recertification credit, learners must review the course 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.

This course is not intended for those preparing to take the BPS Critical Care Pharmacy Specialty Examination for Certification. To prepare for the examination, please see courses here: <http://elearning.ashp.org/catalog/Crit-care-review>

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

*\* Please note: Review Course for Recertification may only be completed for recertification credit up to two times, in nonconsecutive years, during the 7-year recertification cycle.*

Learning Activity	ACPE Number	Contact Hours
Complex Case: Complications after Cardiac Surgery - Glucose, Sedation, and Thrombocytopenia	0204-0000-22-633-H01-P	1.50 ACPE
Complex Case: Acute Coronary Syndrome	0204-0000-22-634-H01-P	1.50 ACPE
Complex Case: Antithrombotic-Associated Intracerebral Hemorrhage	0204-0000-22-635-H01-P	1.50 ACPE
Complex Case: Sepsis	0204-0000-22-636-H01-P	1.50 ACPE
<b>Recertification Assessment Group 1 (TBD% passing score required)</b>		6.0 BPS
Complex Case: Hyperglycemic Emergency and Community-Acquired Pneumonia	0204-0000-22-637-H01-P	1.50 ACPE
Complex Case: Pneumonia	0204-0000-22-638-H01-P	1.50 ACPE
Complex Case: Oncologic Emergencies: Febrile Neutropenia, Tumor Lysis Syndrome, and Hypercalcemia of Malignancy	0204-0000-22-639-H01-P	1.50 ACPE
Complex Case: GI Bleeding and Acute Kidney Failure	0204-0000-22-640-H01-P	1.50 ACPE
<b>Recertification Assessment Group 2 (TBD% passing score required)</b>		6.0 BPS
Statistics, Evidence-Based Medicine, and Clinical Trial Design	0204-0000-21-985-H04-P	2.00 ACPE
Practice Administration and Development Part 1	0204-0000-22-641-H04-P	1.00 ACPE
Practice Administration and Development Part 2	0204-0000-22-642-H04-P	1.00 ACPE
<b>Recertification Assessment Group 3 (TBD% passing score required)</b>		4.0 BPS

### Learning Objectives

After participating in this CPE activity, learners should be able to:

Complex Case: Complications after Cardiac Surgery - Glucose, Sedation, and Thrombocytopenia

ACPE #: 0204-0000-22-633-H01-P

- Develop treatment and monitoring plans for a complex post-cardiac surgery patient to include pain, agitation and delirium, glucose management, and heparin-induced thrombocytopenia.
- Evaluate the impact of critical illness on pre-existing conditions (e.g., endocrine disorders, pain).
- Summarize quality assurance and process improvement methods relevant to critical care.
- Assess the relationship between institutional guideline development and evidence-based critical care literature.

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Complex Case: Acute Coronary Syndrome

ACPE #: 0204-0000-22-634-H01-P

- Develop treatment and monitoring plans for a complex critical care patient with acute coronary syndrome.
- Modify treatment and monitoring plans related to alterations of pharmacodynamics and pharmacokinetics in the critically ill.
- Select devices required for treatment and monitoring of a critical care patient.
- Select fluid, electrolyte and acid/base management and monitoring based on patient-specific factors.

Complex Case: Antithrombotic-Associated Intracerebral Hemorrhage

ACPE #: 0204-0000-22-635-H01-P

- Develop treatment and monitoring plans for a complex critical care patient with antithrombotic-associated intracerebral hemorrhage (ICH).
- Select appropriate neurologic monitoring techniques.
- Recommend agents for acute volume resuscitation and hemostasis (e.g., blood products, hemostatic agents).
- Evaluate the impact of critical illness on preexisting conditions (e.g., cardiovascular diseases).
- Recommend fluid and electrolyte management based on patient-specific factors.

Complex Case: Sepsis

ACPE #: 0204-0000-22-636-H01-P

- Develop treatment and monitoring plans for a complex critical care patient with an intra-abdominal infection, sepsis/SIRS, and shock.
- Select appropriate routes of administration for medications in critically ill patients.
- Modify treatment and monitoring plans related to alterations of pharmacodynamics and pharmacokinetics in the critically ill.
- Recommend agents for acute volume resuscitation and hemostasis (e.g., crystalloids, colloids).

Complex Case: Hyperglycemic Emergency and Community-Acquired Pneumonia

ACPE #: 0204-0000-22-637-H01-P

- Develop treatment and monitoring plans for a complex critical care patient with hyperglycemic emergency and community-acquired pneumonia.
- Select appropriate routes and methods of administration for medications in critically ill patients.
- Select fluid, electrolyte and acid/base management and monitoring based on patient-specific factors.
- Choose agents for acute volume resuscitation.
- Identify medication safety issues patients requiring care in the ICU.
- Explain nutrition support in the critically ill patient.

Complex Case: Pneumonia

ACPE #: 0204-0000-22-638-H01-P

- Develop treatment and monitoring plans for a complex critical care patient with multiple conditions, including pneumonia and acute respiratory distress syndrome (ARDS).
- Identify drug interactions and adverse drug events common in critical care and methods to document.

Complex Case: Oncologic Emergencies: Febrile Neutropenia, Tumor Lysis Syndrome, and Hypercalcemia of Malignancy

ACPE #: 0204-0000-22-639-H01-P

- Develop treatment and monitoring plans for a complex critical care patient with febrile neutropenia, tumor lysis syndrome, or hypercalcemia of malignancy.
- Select fluid, electrolyte and acid/base management and monitoring based on patient-specific factors.
- Evaluate the impact of critical illness on pre-existing conditions (e.g., cancer).

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Complex Case: GI Bleeding and Acute Kidney Failure

ACPE #: 0204-0000-22-640-H01-P

- Develop treatment and monitoring plans for a complex critical care patient with gastrointestinal bleeding, alcohol withdrawal, refeeding syndrome, hepatorenal syndrome, cirrhosis, and acute kidney failure with kidney replacement therapy.
- Modify treatment and monitoring plans related to alterations of pharmacodynamics and pharmacokinetics in the critically ill.
- Select appropriate routes of administration for medications in critically ill patients.
- Recommend agents for acute volume resuscitation and hemostasis (e.g., blood products, hemostatic agents).

Statistics, Evidence-Based Medicine, and Clinical Trial Design

ACPE #: 0204-0000-21-985-H04-P

- Determine quality and appropriateness of a study by examining study design, statistical analysis, sources of bias, quality of conclusions, and interpretation of graphs.
- Determine clinical and statistical significance of a study outcome.
- Determine whether the study applies to a specified patient population.

Practice Administration and Development Part 1

ACPE #: 0204-0000-22-641-H04-P

- Develop a plan to monitor and evaluate compliance with, and impact of, policies and guidelines (e.g., institutional, evidence based).
- Describe the application and integration of evidence-based critical care literature into institutional guidelines and processes.
- Evaluate regulatory/IRB requirements relative to conducting critical care research.
- Select quality assurance methods and improvement activities, including needs assessment techniques, aimed at enhancing the safety and effectiveness of medication-use processes in the critical care area.

Practice Administration and Development Part 2

ACPE #: 0204-0000-22-642-H04-P

- Identify metrics for evaluating the quality of critical care pharmacy services (e.g., lengths of ICU stay, mortality, cost-effectiveness, ROI).
- Summarize the evidence-based literature that supports the value of critical care pharmacy.
- Summarize the factors that enhance the education and training of critical care pharmacists available in published documents from relevant professional societies (e.g., ASHP, ACCP, SCCM).

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**CORE THERAPEUTIC MODULES**

The Core Therapeutic Modules for Recertification Package consists of 3 activities (see table below). In each activity, faculty review clinical topics and practice skills using a case-based approach. This package is intended for board certified pharmacists in need of recertification credit; the activities were designed based on the content outline developed by the Board of Pharmacy Specialties (BPS).

Learning Activity	ACPE Number	Contact Hours
Select Topics in Infectious Diseases in Critical Care Patients	0204-0000-22-643-H01-P	1.00 ACPE
Select Topics in Pulmonary Disorders	0204-0000-22-644-H01-P	1.00 ACPE
Fluid, Electrolytes, and Nutrition	0204-0000-22-617-H01-P	1.00 ACPE
<b>Recertification Assessment (TBD% passing score required)</b>		3.0 BPS

**Learning Objectives**

After participating in this CPE activity, learners should be able to:

Select Topics in Infectious Diseases in Critical Care Patients

ACPE #: 0204-0000-22-643-H01-P

For the following specific infectious disease topics: urinary tract infections, meningitis, catheter related infections, bacteremia, and infective endocarditis:

- Interpret laboratory and diagnostic tests.
- Recommend the most appropriate treatment and monitoring plans based on patient-specific information and current guidelines.

Select Topics in Pulmonary Disorders

ACPE #: 0204-0000-22-644-H01-P

For the following specific pulmonary disease topics: asthma exacerbation, acute exacerbation of chronic obstructive pulmonary disease, pulmonary embolism, and pulmonary arterial hypertension:

- Interpret laboratory and diagnostic tests.
- Recommend the most appropriate treatment and monitoring plans based on patient-specific information and current guidelines.

Fluid, Electrolytes, and Nutrition

ACPE #: 0204-0000-22-617-H01-P

- Interpret laboratory and diagnostic tests for fluid, electrolyte, and nutrition status.
- Recommend the most appropriate therapy and monitoring in patients with fluid, electrolyte, and nutritional disorders based on patient-specific information and current guidelines.
- Apply strategies to manage drug-related electrolyte interactions and nutrient interactions.

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### Faculty

<https://www.ashp.org/Professional-Development/Board-Certification-Resources/Critical-Care-Pharmacy/Critical-Care-Pharmacy-Review-Course-Faculty>

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### Field Testers

TBD

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#### **Disclosures**

In accordance with our accreditor's Standards of Integrity and Independence in Accredited Continuing Education, ASHP requires that all individuals in control of content disclose all financial relationships with ineligible companies. An individual has a relevant financial relationship if they have had a financial relationship with an ineligible company in any dollar amount in the past 24 months and the educational content that the individual controls is related to the business lines or products of the ineligible company.

An ineligible company is any entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients. The presence or absence of relevant financial relationships will be disclosed to the activity audience.

No one in control of the content of this activity has a relevant financial relationship (RFR) with an ineligible company.

As required by the Standards of Integrity and Independence in Accredited Continuing Education, all relevant financial relationships have been mitigated prior to the CPE activity.

#### **Methods and CE Requirements**

Activities can be completed in any order. Each activity consists of audio, video, and/or PDFs and evaluations. Learners must review all content and complete the evaluations to receive continuing pharmacy education credit for each activity.

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

#### **System Technical Requirements**

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.