

**Materials for this course will release 06/22/2022**

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**Cardiology Pharmacy Specialty Review Course for Recertification + RECERT EXAM Package (Cert # L229236)**

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

**Tag:** Certifications; Cardiology

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

**Pre-Sale Date:** 05/25/2022

**Content Release Date:** 06/22/2022

**Expiration Date:** 06/20/2023

**Activity Type:** Application-based

**CE Credits:** 23.75 (BPS and ACPE)

**Activity Fee:** \$475 (ASHP member); \$675 (non-member)

**Accreditation for Pharmacists**



The American Society of Health-System Pharmacists (ASHP) and American College of Clinical Pharmacy (ACCP) 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 cardiology pharmacy.

**Activity Overview**

This course is intended for BCCPs 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 16 activities (see table below) and provides up to 23.75 contact hours of continuing pharmacy education credit and/or recertification credit.

**Recertification Credit\***

Board certified pharmacists are eligible to receive up to 23.75 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.

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

These activities are part of the ASHP and ACCP professional development program for BCCP 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
Primary Prevention of Cardiovascular Disease and Public Health	0217-9999-22-094-H01-P	1.5 ACPE
Dyslipidemia	0217-9999-22-095-H01-P	1.5 ACPE
Blood Pressure Management in Adult Patients	0217-9999-22-096-H01-P	1.5 ACPE
<b>Recertification Assessment Group 1 (TBD % passing score required)</b>		4.5 BPS
Stable Atherosclerotic Disease	0217-9999-22-097-H01-P	1.5 ACPE
Anticoagulation	0217-9999-22-098-H01-P	1.5 ACPE
<b>Recertification Assessment Group 2 (TBD % passing score required)</b>		3.0 BPS
Arrhythmias	0217-9999-22-099-H01-P	1.5 ACPE
Drug-Induced Cardiovascular Disease and Drugs to Avoid in Cardiovascular Disease	0217-9999-22-100-H01-P	1.5 ACPE
<b>Recertification Assessment Group 3 (TBD % passing score required)</b>		3.0 BPS
Chronic Heart Failure	0217-9999-22-101-H01-P	1.5 ACPE
Acute Decompensated Heart Failure	0217-9999-22-102-H01-P	1.5 ACPE
Heart Transplant and Mechanical Circulatory Support	0217-9999-22-103-H01-P	1.5 ACPE
<b>Recertification Assessment Group 4 (TBD % passing score required)</b>		4.5 BPS
Acute Coronary Syndrome	0217-9999-22-104-H01-P	1.5 ACPE
Cardiovascular Emergencies	0217-9999-22-105-H01-P	1.5 ACPE
<b>Recertification Assessment Group 5 (TBD % passing score required)</b>		3.0 BPS
Pulmonary Arterial Hypertension	0217-9999-22-106-H01-P	1.25 ACPE
Specialized Topics in Cardiovascular Disease	0217-9999-22-107-H01-P	1.5 ACPE
<b>Recertification Assessment Group 6 (TBD % passing score required)</b>		2.75 BPS
Translation of Evidence into Practice	0217-9999-22-108-H99-P	1.5 ACPE
Principles of Cardiology Pharmacy Practice Administration	0217-9999-22-109-H04-P	1.5 ACPE
<b>Recertification Assessment Group 7 (TBD% passing score required)</b>		3.0 BPS

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### Learning Objectives

At the end of this activity, you will be able to:

#### Primary Prevention of Cardiovascular Disease and Public Health

ACPE #: 0217-9999-22-094-H01-P

- Identify pharmacotherapeutic agents that reduce the risk of developing cardiovascular disease (CVD).
- Develop a treatment plan that incorporates lifestyle modifications and evidence-based pharmacotherapy to reduce the risk of an index cardiovascular event for a given patient scenario.
- Develop a tobacco cessation treatment plan for a patient who requests assistance for a quit attempt.
- Evaluate a given patient scenario to determine CVD risk and recommend appropriate lipid therapy.
- Determine appropriate patients to recommend initiation of aspirin therapy for the primary prevention of CVD.
- Counsel a patient on appropriate complementary and alternative pharmacotherapeutic agents to optimize CVD risk reduction, including vitamin D and omega-3 fatty acids.

#### Dyslipidemia

ACPE #: 0217-9999-22-095-H01-P

- Describe the role of cholesterol and lipoproteins in the development of atherosclerotic cardiovascular disease (ASCVD).
- Evaluate a patient's ASCVD risk by appropriately using the 10-year ASCVD Risk Pooled Cohort Equations and optional risk enhancers.
- Establish goals of therapy for the management of blood cholesterol, including statin intensity, and create a monitoring plan for patients receiving lipid-lowering therapies.
- Develop an appropriate treatment regimen for patients who are statin intolerant or unable to achieve goals of therapy on maximally tolerated statin therapy, according to the 2018 Guideline on the Management of Blood Cholesterol.
- Identify appropriate indications for the use of triglyceride-lowering therapies to manage hypertriglyceridemia.
- Evaluate the needs of special populations (e.g., those with diabetes, older adults, those with kidney disease), and adapt treatment strategies to optimize outcomes.

#### Blood Pressure Management in Adult Patients

ACPE #: 0217-9999-22-096-H01-P

- Develop an optimal pharmacologic treatment plan for a patient with hypertension (HTN) according to practice guidelines and clinical trial evidence.
- Demonstrate appropriate drug selection and blood pressure goals for the treatment of HTN according to concomitant conditions and compelling indications.
- Devise an evidence-based treatment strategy for resistant HTN to achieve blood pressure goals.
- Construct appropriate drug therapy plans for the treatment of hypotension and/or antihypertensive drug related adverse events.

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### **Stable Atherosclerotic Disease**

ACPE #: 0217-9999-22-097-H01-P

- Recommend patient-specific pharmacologic therapy for the management of stable ischemic heart disease (SIHD).
- Differentiate between the antianginal options for a patient with refractory angina.
- Develop an optimal pharmacologic regimen and monitoring plan for patients with peripheral arterial disease (PAD) considering individual patient symptomatology and characteristics.
- Develop an evidence-based pharmacologic regimen for secondary prevention of ischemic stroke and transient ischemic attack (TIA).
- Recommend risk factor modification strategies to prevent a recurrent event for patients with SIHD, PAD, and ischemic stroke/TIA.

### **Anticoagulation**

ACPE #: 0217-9999-22-098-H01-P

- Recommend a patient-specific pharmacotherapy plan to reduce the risk of stroke in patients with atrial fibrillation (AF).
- Devise an evidence-based pharmacotherapy plan for preventing and treating venous thromboembolism (VTE).
- Analyze the need for anticoagulation in patients with AF or VTE.
- Determine appropriate reversal strategies for patients at risk of bleeding, or actively bleeding while receiving anticoagulation therapy.
- Determine appropriate selection and dosing of anticoagulant therapy on the basis of patient-specific factors and drug interactions.
- Evaluate literature and clinical implications of data for patients receiving anticoagulant agents.

### **Arrhythmias**

ACPE #: 0217-9999-22-099-H01-P

- Describe the principles of basic electrocardiogram (ECG) interpretation.
- Distinguish risk factors and etiologies, clinical features, signs and symptoms, and goals of therapy of sinus bradycardia, atrial fibrillation (AF), supraventricular tachycardia (SVT) (including Wolff-Parkinson-White syndrome [WPW]), premature ventricular complexes (PVCs), and ventricular tachycardia (VT).
- Compare and contrast appropriate pharmacologic and nonpharmacologic treatment options for the management of sinus bradycardia, AF, SVT, PVCs, and VT.
- Compare and contrast the mechanisms of action of drugs used for ventricular rate control and conversion to and maintenance of sinus rhythm in patients with AF.
- Recommend strategies to improve transitions of care between inpatient and outpatient settings for patients on antiarrhythmic drugs.
- Develop evidence-based patient-specific pharmacotherapy plans for patients with symptomatic sinus bradycardia, AF, SVT (including WPW), PVCs, and VT.
- Assess common and important drug-drug interactions and adverse effects associated with drugs used for the management of arrhythmias and their complications.

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### **Drug-Induced Cardiovascular Disease and Drugs to Avoid in Cardiovascular Disease**

ACPE #: 0217-9999-22-100-H01-P

- Identify potential drug-induced cardiovascular diseases.
- Analyze a medication list to determine causative agents for common drug-induced cardiovascular diseases.
- Evaluate potential medications that can contribute to the development of torsades de pointes.
- Review anticancer therapies that cause cardiovascular toxicities.
- Evaluate patient characteristics and laboratory values to assess the risk of heparin-induced thrombocytopenia and develop an appropriate treatment plan.

### **Chronic Heart Failure**

ACPE #: 0217-9999-22-101-H01-P

- Given a patient with heart failure (HF), describe the classifications, staging, clinical presentation, etiologies, and diagnostic considerations.
- Describe the pathophysiology of HF, focusing on the role that neurohormonal and other vasoactive agents play in HF progression.
- Given a patient with chronic HF, devise an appropriate pharmacologic and nonpharmacologic therapeutic plan, with an emphasis on guideline-directed therapy and management.
- Given a patient with chronic HF and several comorbidities, devise an appropriate evidence-based pharmacotherapy plan addressing specific comorbidities related to HF.

### **Acute Decompensated Heart Failure**

ACPE #: 0217-9999-22-102-H01-P

- Classify a patient with acute decompensated heart failure (ADHF) into a hemodynamic subset based on signs/symptoms, laboratory values, and hemodynamic measures obtained via pulmonary artery catheter (PAC) monitoring.
- Design an initial pharmacotherapeutic treatment and monitoring plan for a patient with ADHF based on hemodynamic subset.
- Devise a modified treatment and monitoring plan in a patient with ADHF and diuretic resistance.
- Compare and contrast the use of intravenous (IV) vasodilators and positive inotropes in the treatment of ADHF, and among the agents within each drug class.
- List strategies for reducing the risk of heart failure (HF) readmission among patients recovering from ADHF.

### **Heart Transplant and Mechanical Circulatory Support**

ACPE #: 0217-9999-22-103-H01-P

- Evaluate levels of risk in the heart transplant candidate.
- Derive rational peri- and postoperative rejection mitigation strategies in heart transplant recipients.
- Devise effective thromboprophylactic strategies for patients receiving percutaneous ventricular assist device support.
- Construct safe and effective drug therapy regimens for patients receiving extracorporeal membrane oxygenation support.
- Design effective treatment plans for patients with complications of durable left ventricular assist device therapy.

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### **Acute Coronary Syndrome**

ACPE #: 0217-9999-22-104-H01-P

- Distinguish between reperfusion strategies for acute coronary syndrome (ACS): ST-segment elevation myocardial infarction (STEMI) and non-ST-segment elevation (NSTEMI) ACS.
- Devise a pharmacotherapeutic treatment plan for a patient with STEMI undergoing primary percutaneous coronary intervention (PCI) and for a patient with NSTEMI-ACS undergoing an early invasive or ischemia-guided approach.
- Differentiate between the best possible pharmacologic options for preventing thrombotic events in the acute management of ACS.
- Analyze differences in evidence, pharmacology, pharmacokinetics, drug-drug interactions, monitoring, and adverse events between the P2Y<sub>12</sub> inhibitors and anticoagulants used in ACS management.
- Devise an individualized evidence-based treatment plan for patients in need of secondary prevention post-ACS, including mortality-reducing therapies.

### **Cardiovascular Emergencies**

ACPE #: 0217-9999-22-105-H01-P

- Choose appropriate management pathways/treatment for a patient with cardiac arrest according to patient presentation.
- Differentiate between the various categories of shock.
- Select the optimal management strategies for the various types of shock.
- Construct a pharmacotherapy regimen for the various hypertensive crises.
- Select an appropriate management plan for a patient presenting with acute aortic syndrome.
- Design a pharmacotherapy plan for the management of acute ischemic stroke.

### **Pulmonary Arterial Hypertension**

ACPE #: 0217-9999-22-106-H01-P

- Describe the classification of pulmonary hypertension and implications for treatment.
- Discuss the importance of pulmonary arterial hypertension (PAH) pathobiology and the role of various pathways as treatment targets in the development of PAH-specific treatment.
- Define treatment goals for the management of PAH.
- Outline targeted medications for PAH, including indications, dosing, monitoring, and their place within current treatment algorithms.
- Identify common adverse effects and drug interactions associated with PAH medications.
- Highlight appropriate treatment approaches for the management of decompensated PAH.
- Design a treatment plan for a patient with PAH.

### **Specialized Topics in Cardiovascular Disease**

ACPE #: 0217-9999-22-107-H01-P

- Recommend empiric antibiotic therapy for patients with suspected infective endocarditis (IE).
- Develop a therapeutic plan regarding medication therapy for patients with IE or patients requiring prophylactic therapy for IE prevention.
- Identify patients who require IE prophylactic therapy.
- Develop a treatment plan for patients with pericarditis.
- Recommend appropriate therapy for patients with myocarditis.
- Plan a medication therapy regimen for patients with valvular heart disease.

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### Translation of Evidence into Practice

ACPE #: 0217-9999-22-108-H99-P

- Identify different types of data (nominal, ordinal, continuous) to determine the appropriate type of statistical test (parametric vs. nonparametric).
- Select appropriate statistical tests based on the anticipated sample distribution, data type, and study design.
- Identify the most appropriate study design to answer a given research question.
- Describe the key tenets of internal and external validity of cardiovascular-related trials.
- Describe the advantages and disadvantages of surrogate and composite outcomes in cardiovascular studies.

### Principles of Cardiology Pharmacy Practice Administration

ACPE #: 0217-9999-22-109-H04-P

- Develop policies, procedures, and clinical protocols related to the medication use process.
- Identify formulary management activities to improve the prescribing of safe, effective, and affordable treatments in an organization.
- Describe strategies to plan for and respond safely and efficiently to drug product shortages.
- List high-risk medications and medication-related processes that are suited for a medication use evaluation (MUE) and be capable of managing the MUE process.
- Describe national quality initiatives and regulatory requirements aimed at improving health care delivery and patient health outcomes.
- Review pharmacoeconomic principles and their application to patient care.
- Compare a medication error, adverse drug event (ADE), adverse drug reaction (ADR), and preventable ADE.
- Design an ADE reporting program, including committee structure, committee reporting mechanisms, and methods of detecting, reporting, and managing ADEs.

**Faculty** (<https://www.rxcertifications.org/Cardiology/Course-Faculty>)

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*\*Content Matter Experts*

**Reviewers**

TBD

**Field Testers**

TBD

**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.

TBD



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**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**

ACCP and ASHP collaborate on cardiology pharmacy activities.