

Cardiology Self-Assessment Program (CardSAP) Book 2: Special Populations (Cert #L199354)

Teaser: This Self-Assessment Program series provides Cardiology pharmacists with pertinent therapeutic updates to enhance their practice skills and improve patient outcomes.

Tag: Certifications; Cardiology

ACPE Numbers: Various – see listing below

Pre-sale Date: 10/23/2019

Content Release Date: 11/15/2019

Product sale end date: 05/15/2020

Activity Type: Application-based

CE Credits: 15.0 hours (BPS and ACPE)

Activity Fee: \$75 (ASHP member); \$110 (non-member)

Accreditation for Pharmacists



The American College of Clinical Pharmacy and American Society of Health-System Pharmacists are accredited by the Accreditation Council for Pharmacy Education as providers of continuing pharmacy education.

Target Audience

The target audience for CardSAP 2019 Book 2 (Special Populations) is board-certified cardiology pharmacy specialists caring for patients with or at risk of cardiovascular disease.

Activity Overview

This course 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). The course consists of 4 learning modules (see table below) and provides up to 15.0 hours of continuing pharmacy education and/or recertification credit.

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 course, “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 ACCP and ASHP professional development program for BCCP recertification approved by the BPS.

Recertification Credit*

Board certified pharmacists are eligible to receive up to 15.0 hours of recertification credit for completing this course. 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
CARDSAP 2019 Book 2 (Special Populations I)	0217-9999-19-036-H01-P	4.0	66%
CARDSAP 2019 Book 2 (Special Populations II)	0217-9999-19-044-H01-P	3.5	73%
CARDSAP 2019 Book 2 (Special Populations III)	0217-9999-19-045-H01-P	3.5	73%
CARDSAP 2019 Book 2 (Special Populations VI)	0217-9999-19-046-H01-P	4.0	66%

LEARNING OBJECTIVES

CARDSAP 2019 Book 2 (Special Populations I)

ACPE Number: 0217-9999-19-036-H01-P

Cardiovascular Disease in Older Adults

- Design a pharmacotherapy regimen for older adult patients with risk factors for cardiovascular disease such as hypertension, hyperlipidemia, and diabetes.
- Evaluate the risk-benefit of antiplatelet therapy for primary and secondary prevention of cardiovascular events in older adults.
- Assess for the severity of valvular heart disease and the risks of medication therapy in older adult patients.
- Develop a pharmacotherapy regimen for older adult patients with atrial fibrillation.

Mental Illness and Cardiovascular Disease

- Apply available psychotropic drug effectiveness data to treatment recommendations for patients with mental illness and comorbid cardiovascular disease (CVD).
- Apply available psychotropic drug safety data to treatment recommendations for patients with mental illness and comorbid CVD.
- Assess drug-drug interactions in patients with mental illness and CVD.
- Describe screening and care models for patients with mental illness and comorbid CVD, and explore how further pharmacist integration can improve care outcomes.

CARDSAP 2019 Book 2 (Special Populations II)

ACPE Number: 0217-9999-19-044-H01-P

High-Cost Drugs and Cardiovascular Disease

- Identify contributors to drug costs in the United States, and distinguish between types of drug prices, payers, and reimbursement methods.
- Identify government-sponsored and other strategies intended to lower the cost of health care, including drug therapy.
- Evaluate the impact of high-cost drugs on patient outcomes, and discover methods to increase access to prescription medications.
- Apply pharmacoeconomic principles to evaluate high-cost cardiovascular drugs.
- Develop clinical pharmacy strategies to minimize the impact of high-cost drugs.

Cardiovascular Disease in Women

- Evaluate the effect of sex-based risk factors for cardiovascular disease (CVD) on prevention, diagnosis, and treatment, and distinguish among CVD subsets more prevalent or debilitating in women.
- Detect sex-related and racial disparities with respect to evidence-based CVD treatments.
- Analyze pregnancy-related risks and their impact on future CVD events, and develop a strategy for managing CVDs in pregnant patients.
- Justify the pharmacist's role in addressing sex and racial disparities in preventing and treating CVD in women.

CARDSAP 2019 Book 2 (Special Populations III)

ACPE Number: 0217-9999-19-045-H01-P

Medication Adherence and Cardiovascular Disease

- Evaluate the barriers or predictors of medication nonadherence.
- Assess the risks associated with medication nonadherence in the treatment of cardiovascular diseases (CVDs).
- Evaluate strategies aimed at improving medication adherence in patients receiving chronic medications for CVD.
- Design a plan to improve medication adherence in a patient with CVD.
- Justify a CV medication regimen to appropriately treat and minimize risk of nonadherence.

Drug Shortages and Medication Safety

- Account for key causes of drug shortages in the United States.
- Delineate the role of alternative sources in drug supply and the concerns surrounding them.
- Evaluate patient safety issues associated with drug shortages.
- Design drug shortage management strategies to minimize patient safety concerns.
- Evaluate available sources of information about drug shortages.

CARDSAP 2019 Book 2 (Special Populations IV)

ACPE Number: 0217-9999-19-046-H01-P

Recorded Webcast: Cancer Chemotherapy-Associated Cardiomyopathy

Learning Objectives

- Account for the pathophysiology of chemotherapy-associated cardiomyopathy, including identification of risk factors.
- Evaluate the risk of developing chemotherapy-associated cardiomyopathy in patients receiving various types of chemotherapies.
- Justify the use of various diagnostic tools for identifying and monitoring chemotherapy-associated cardiomyopathy.
- Design strategies to minimize the risk of chemotherapy-associated cardiomyopathy, including the use of pharmacotherapy in primary and secondary prevention.
- Evaluate guidelines and statements from various national organizations, including the role of the multidisciplinary team in treating the patient with chemotherapy-associated cardiomyopathy.

Recorded Webcast: Precision Medicine

Learning Objectives

- Evaluate the analytic validity, clinical validity, and clinical usefulness of pharmacogenomic (PGx) testing in patients treated with medications to manage cardiovascular diseases.
- Interpret and apply a *CYP2C19* genotype to individualize antiplatelet therapy selection for patients undergoing percutaneous coronary interventions.
- Interpret and apply *CYP2C9*, *VKORC1*, and *CYP4F2* genotypes to establish an anticoagulation regimen for patients taking warfarin.
- Understand the usefulness of *SLCO1B1* genotyping, and apply it to statin therapy for hyperlipidemia.
- Assess the role of PGx testing in hypertension, heart failure, and arrhythmia and with direct oral anticoagulants.

Faculty Panel Chair

Karen J. McConnell, Pharm.D., FCCP, FASHP, BCPS-AQ Cardiology, AHSCP-CHC
System Director, Clinical Pharmacy Services
CommonSpirit Health
Englewood, Colorado
Clinical Associate Professor
University of Colorado Skaggs School of Pharmacy
Aurora, Colorado

Series Editors

Cynthia A. Jackevicius, Pharm.D., M.Sc., FCCP, FCSHP, FAHA, FCCS, FACC, BCPS-AQ Cardiology, BCCP
Professor, Pharmacy Practice
College of Pharmacy
Western University of Health Sciences
Clinical Pharmacy Specialist, Cardiology
VA Greater Los Angeles Healthcare System
Los Angeles, California

J. Herbert Patterson, Pharm.D., FCCP, FHFSa
Professor of Pharmacy
Research Professor of Medicine
Executive Vice Chair, Division of Pharmacotherapy and Experimental Therapeutics
UNC Eshelman School of Pharmacy
University of North Carolina at Chapel Hill
Chapel Hill, North Carolina

Reviewers

Ohoud Almalki, Pharm.D., BCPS, ASH-CHC, CLS
Assistant Professor
Clinical Pharmacy Department
Taif University
Taif, Saudi Arabia

Bassam Atallah, Pharm.D., MS, FHFSA, BCPS-AQ Cardiology
Pharmacotherapy Specialist
Department of Pharmacy
Cleveland Clinic Abu Dhabi
Abu Dhabi, United Arab Emirates

Michael B. Bottorff, Pharm.D., FCCP, FNLA, CLS
Professor and Chair
Department of Pharmacy Practice
Manchester University
Fort Wayne, Indiana

James C. Coons, Pharm.D., FCCP, BCCP
Associate Professor
Department of Pharmacy and Therapeutics
University of Pittsburgh School of Pharmacy
Pittsburgh, Pennsylvania

Estella M. Davis, Pharm.D., BCPS
Associate Professor
Creighton University School of Pharmacy and Health Professions
Omaha, Nebraska

Katherine E. Di Palo, Pharm.D., FAHA, BCACP, BCGP
Clinical Program Manager
Office of the Medical Director
Montefiore Medical Center
Bronx, New York

Mona Fiuzat, Pharm.D.
Associate Professor of Medicine
Duke University
Durham, North Carolina

Kristen N. Gardner, Pharm.D., BCPP
Clinical Pharmacy Specialist, Behavioral Health
Department of Pharmacy
Kaiser Permanente Colorado
Denver, Colorado

Gregory S. King, Pharm.D., BCPS
Clinical Pharmacy Specialist – Cardiology Department of Pharmacy
Saint Joseph Hospital
Lexington, Kentucky

Ellen Yin Mahood, Pharm.D., BCPS, BCCP
Hemostasis and Thrombosis Management/Cardiology Clinical Pharmacist II
Department of Pharmacy
CHI Baylor St. Luke's Health
Houston, Texas

Carrie S. Oliphant, Pharm.D., FCCP, BCPS, BCCP, AACC
Global Medical Information Specialist
Med Communications, Inc.
Memphis, Tennessee

Mary Parker, Pharm.D., FCCP, FASHP, BCPS, BCCP
Clinical Pharmacy Specialist/Clinic
Coordinator – Ambulatory Care
Durham VA HealthCare System
Durham, North Carolina

Manish Patel, Pharm.D., BCPS
Clinical Pharmacist
Department of Pharmacy
Summerlin Hospital Medical Center
Las Vegas, Nevada

Cynthia A. Sanoski, Pharm.D., FCCP, BCPS
Department Chair and Associate Professor
Jefferson University College of Pharmacy
Philadelphia, Pennsylvania

Rebecca JC Tran, Pharm.D., BCPS, BCACP, BCCP, CLS
Assistant Professor
Loma Linda University School of Pharmacy
Redlands, California

Elizabeth Van Dril, Pharm.D., BCPS
Clinical Assistant Professor
Department of Pharmacy Practice
College of Pharmacy
University of Illinois at Chicago
Chicago, Illinois

Benjamin W. Van Tassell, Pharm.D., FCCP, FAHA, BCPS, ASH-CHC
Professor and Vice Chair for Clinical Research
Pharmacotherapy and Outcome Sciences Department
Virginia Commonwealth University
Richmond, Virginia

Laura Tsu, Pharm.D., BCPS, BCGP
Associate Professor of Pharmacy Practice
Chapman University School of Pharmacy
Irvine, California

Monty Yoder, Pharm.D., BCCP
Clinical Specialist, Cardiology
Acute Care Pharmacy Department
Wake Forest Baptist Health
Winston-Salem, North Carolina

Eman El Sayed Younis, Pharm.D., BCPS-AQ Cardiology
Senior Clinical Pharmacist
Pharmaceutical Care Department
Saudi German Hospital
Madinah, Saudi Arabia

The American College of Clinical Pharmacy and the authors thank the following individuals for their careful review of the Special Populations I chapters:

Jennifer Le, Pharm.D., MAS, FCCP, FCSHP, FIDSA, BCPS-ID
Professor of Clinical Pharmacy
Skaggs School of Pharmacy and Pharmaceutical Sciences
University of California, San Diego
La Jolla, California

Mary Wun-Len Lee, Pharm.D., FCCP, BCPS
Vice President and Special Assistant to the President
Midwestern University
Professor of Pharmacy Practice
Chicago College of Pharmacy
Downers Grove, Illinois

The American College of Clinical Pharmacy and the authors thank the following individuals for their careful review of the Special Populations II chapters:

Emilie L. Karpiuk, Pharm.D., BCPS
Oncology Pharmacist
Department of Pharmacy
Froedtert Hospital
Milwaukee, Wisconsin

Ralph H. Raasch, Pharm.D., FCCP, BCPS
Associate Professor of Pharmacy (retired)
Division of Practice Advancement and Clinical Education
Eshelman School of Pharmacy
The University of North Carolina at Chapel Hill
Chapel Hill, North Carolina

The American College of Clinical Pharmacy and the authors thank the following individuals for their careful review of the Special Populations III chapters:

Shannon W. Finks, Pharm.D., FCCP, BCPS, BCCP, AHSCP-CHC
Professor
Department of Clinical Pharmacy and Translational Science
University of Tennessee College of Pharmacy
Memphis, Tennessee

Mary Wun-Len Lee, Pharm.D., FCCP, BCPS
Vice President and Special Assistant to the President
Midwestern University
Professor of Pharmacy Practice
Chicago College of Pharmacy
Downers Grove, Illinois

The American College of Clinical Pharmacy and the authors thank the following individuals for their careful review of the Special Populations IV features:

Judy Cheng, Pharm.D., MPH, BCPS-AQ Cardiology
Professor and Interim Chair of Pharmacy Practice
Department of Pharmacy Practice
MCPHS University
Clinical Pharmacy Specialist
Department of Pharmacy
Brigham and Women's Hospital
Boston, Massachusetts

Jennifer Le, Pharm.D., MAS, FCCP, FCSHP, FIDSA, BCPS-ID
Professor of Clinical Pharmacy
Skaggs School of Pharmacy and Pharmaceutical Sciences
University of California, San Diego
La Jolla, California

Authors

Snehal H. Bhatt, Pharm.D., FASHP, BCPS-AQ Cardiology, AACC
Professor of Pharmacy Practice
MCPHS University School of Pharmacy
Clinical Pharmacist
Department of Pharmacy
Beth Israel Deaconess Medical Center
Boston, Massachusetts

Michael Brenner, Pharm.D., BCPS, BCCP
Clinical Pharmacy Specialist, Cardiology
VA Ann Arbor Healthcare System
Ann Arbor, Michigan

Amber B. Cipriani, Pharm.D., BCOP
Clinical Oncology Specialist, Thoracic Oncology
UNC Healthcare
Clinical Assistant Professor Department of Pharmacotherapy and Experimental Therapeutics
Eshelman School of Pharmacy
University of North Carolina
Chapel Hill, North Carolina

Shannon W. Finks, Pharm.D., FCCP, BCPS, BCCP, AHSCP-CHC
Professor
Department of Clinical Pharmacy and Translational Science
University of Tennessee College of Pharmacy
Memphis, Tennessee

Erin R. Fox, Pharm.D., FASHP, BCPS
Senior Director, Drug Information and Support Services
Department of Pharmacy
University of Utah Health
Salt Lake City, Utah

James C. Lee, Pharm.D., BCACP
Clinical Assistant Professor
Department of Pharmacy Practice
University of Illinois at Chicago College of Pharmacy
Clinical Pharmacist & Co-Director, Personalized Medicine Program
Department of Ambulatory Pharmacy Services
University of Illinois Hospital & Health Sciences Program
Chicago, Illinois

Yee Ming Lee, Pharm.D., BCPS
Assistant Professor
Department of Clinical Pharmacy
Skaggs School of Pharmacy and Pharmaceutical Sciences
University of Colorado
Aurora, Colorado

Joel Marrs, Pharm.D., MPH, FCCP, FAHA, FASHP, FNLA, BCACP, BCCP, BCPS-AQ Cardiology, ASH-CHC, CLS
Associate Professor
Department of Clinical Pharmacy
University of Colorado Anschutz Medical Campus, Skaggs School of Pharmacy and Pharmaceutical Sciences
Aurora, Colorado
Clinical Pharmacy Specialist
Department of Pharmacy
Denver Health Medical Center
Denver, Colorado

Ian R. McGrane, Pharm.D., BCPS, BCCP
Assistant Professor
Department of Pharmacy Practice
University of Montana
Missoula, Montana

Natasha Nicol, Pharm.D., FASHP
Director of Global Patient Safety Affairs
Innovative Delivery Solutions
Cardinal Health, Inc.
Pawleys Island, South Carolina

Kathleen A. Packard, Pharm.D., FNAP, BCPS, AACC
Professor
Department of Pharmacy Practice
Creighton University
Omaha, Nebraska

Jo E. Rodgers, Pharm.D., FCCP, FHSA, FAHA, BCPS, BCCP, CPP
Associate Director, Clinical Fellowship Programs
Eshelman School of Pharmacy
University of North Carolina At Chapel Hill
Chapel Hill, North Carolina

Kelly C. Rogers, Pharm.D., FCCP, FACC, BCCP
Professor
Department of Clinical Pharmacy and Translational Science
University of Tennessee College of Pharmacy
Clinical Pharmacy Specialist, Cardiology
VA Medical Center
Memphis, Tennessee

Andrew J. Smith, Pharm.D., FCCP, BCPS, BCCP
Clinical Associate Professor
Division of Pharmacy Practice and Administration
UMKC School of Pharmacy
Kansas City, MO

Dustin D. Spencer, Pharm.D., MBA, BCPS, BCCP
Clinical Director, Cardiopulmonary Diseases
Cardinal Health
Martinsville, Indiana

Disclosures

In accordance with the Accreditation Council for Continuing Medical Education's Standards for Commercial Support and the Accreditation Council for Pharmacy Education's Standards for Commercial Support, ASHP and the American College of Clinical Pharmacy require that all individuals involved in the development of activity content disclose their relevant financial relationships. A person has a relevant financial relationship if the individual or his or her spouse/partner has a financial relationship (e.g. employee, consultant, research grant recipient, speakers bureau, or stockholder) in any amount occurring in the last 12 months with a commercial interest whose products or services may be discussed in the educational activity content over which the individual has control. The existence of these relationships is provided for the information of participants and should not be assumed to have an adverse impact on the content.

All faculty and planners for ASHP education activities are qualified and selected by ASHP and required to disclose any relevant financial relationships with commercial interests. ASHP identifies and resolves conflicts of interest prior to an individual's participation in development of content for an educational activity. Anyone who refuses to disclose relevant financial relationships must be disqualified from any involvement with a continuing pharmacy education activity.

Consultancies: Snehal Bhatt (Janssen Pharmaceuticals Inc.); Michael B. Bottorff (Esperion); James C. Coons (Medicare); Erin Fox (Civica Rx, Vizient); Kristen Gardner (Board of Pharmacy Specialties, biostrategies); Ian R. McGrane (Mountain Pacific Quality Health, Montana Mental Health Trust); Jo E. Rodgers (Novartis);

Royalties: Ian R. McGrane (Hogrefe Publishing);

Grants: James C. Coons (United Therapeutics); Jo E. Rodgers (Novartis); Elizabeth K. Van Dril (Midwestern University Chicago College of Pharmacy)

Honoraria: Snehal Bhatt (Portola Pharmaceuticals); Amber Cipriani (Amgen); Erin Fox (Mayo Clinic, European COST Project, ASHP, ACCP, FDA, Drug Information Association, Joint Commission of Pharmacy Practitioners, University of Illinois, National Academy of Sciences, Engineering, and Medicine, American Society of Anesthesiologists, Anesthesia Patient Safety Foundation, Massachusetts Society of Health System Pharmacists, Idaho Society of Health System Pharmacists); Ian R. McGrane (University of Montana Skaggs School of Pharmacy, Montana Pharmacy Association, Northwestern Pharmacy Conference); Amber Cipriani (Amgen)

All other 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 ACCP and ASHP.