

Materials for this course will release 10/19/2022

Pharmacotherapy Specialty Recertification Literature Study: Module 2A-C (Cert # L229105)

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; Pharmacotherapy



ACPE Numbers: Various – see listing below

Pre-Sale Date: 09/21/2022

Content Release Date: 10/19/2022

Expiration Dates: 04/18/2023

Activity Type: Application-based

CE Credits: 15 contact hours

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 contact 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 3 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 2A -- Critical Care and Cardiology: This module focuses on critical care and cardiology issues including sepsis, heart failure, and diuretic use.

Module 2B -- New Drug Therapy and Guideline Updates: This module focuses on new drug therapy and guideline updates. Topics include heart failure, obstructive cardiomyopathy, chronic kidney disease, diabetic neuropathy, and cirrhosis.

Module 2C -- Allergy, Asthma and Immunology: This module focuses on allergy, asthma, and immunology issues including asthma guidelines, long-acting antiretroviral therapy, and various topics related to adverse drug reactions and allergies.

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

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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 BCPS recertification approved by the BPS.

Recertification Credit

Board certified pharmacists are eligible to receive up to 15 contact 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	Contact Hours	Assessment Pass Point
Pharmacotherapy Literature Study Module 2A: Critical Care and Cardiology	0204-0000-22-935-H01-P	5.0	TBD
Pharmacotherapy Literature Study Module 2B: New Drug Therapy and Guideline Updates	0204-0000-22-936-H01-P	5.0	TBD
Pharmacotherapy Literature Study Module 2C: Allergy, Asthma and Immunology	0204-0000-22-937-H01-P	5.0	TBD
		15.0 BPS	

Articles and Learning Objectives

Module 2A: Critical Care and Cardiology

ACPE #: 0204-0000-22-935-H01-P

This module focuses on critical care and cardiology issues including sepsis, heart failure, and diuretic use.

Evans L, Rhodes A, Alhazzani W et al. Surviving Sepsis Campaign: international guidelines for management of sepsis and septic shock 2021. *Crit Care Med.* 2021; 49:e1063-e1143.

Learning Objectives:

- Describe the 2021 Surviving Sepsis Campaign guidelines for management of sepsis and septic shock.
- Develop recommendations for the management of patients with sepsis or septic shock.

Rech MA, Gurnani PK, Peppard WJ et al. PHarmacist Avoidance or Reductions on Medical Costs in CRITically Ill Adults: PHARM-CRIT study. *Crit Care Explor.* 2021; 3(12): e0594.

Learning Objectives:

- Describe the PHARM-CRIT study of the role of pharmacists in reducing medical costs for critically ill adults.
- Develop recommendations for pharmacists to use to minimize medical costs in critically ill adults.

Mathew R, Di Santo P, Jung RG, et al. Milrinone as compared with dobutamine in the treatment of cardiogenic shock. *N Engl J Med.* 2021;385:516-25.

Learning Objectives:

- Describe the Dobutamine Compared with Milrinone (DOREMI) trial.
- Develop recommendations for the use of inotropic therapy in patients with cardiogenic shock.

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Felker GM, Ellison DH, Mullens W, et al. Diuretic therapy for patients with heart failure. *J Am Coll Cardiol.* 2020;75:1178–95.

Learning Objectives:

- Describe renal physiology and response to diuretics, the pharmacology and pharmacodynamics of diuretics, mechanisms and strategies for overcoming diuretic resistance, and loop diuretic use in patients with acute or chronic heart failure.
- Develop recommendations for the use of diuretic therapy in patients with heart failure.

Agarwal R, Sinha AD, Cramer AE et al. Chlorthalidone for Hypertension in Advanced Chronic Kidney Disease. *N Engl J Med.* 2021; 385:2507-19.

Learning Objectives:

- Describe the Chlorthalidone in Chronic Kidney Disease (CLICK) study by Agarwal and colleagues of patients with advanced chronic kidney disease (CKD) and poorly controlled hypertension.
- Develop recommendations for the use of the thiazide-like diuretic chlorthalidone in patients with advanced chronic kidney disease (CKD) and poorly controlled hypertension despite antihypertensive drug therapy.

Module 2B: New Drug Therapy and Guideline Updates

ACPE #: 0204-0000-22-936-H01-P

This module focuses on new drug therapy and guideline updates. Topics include heart failure, obstructive cardiomyopathy, chronic kidney disease, diabetic neuropathy, and cirrhosis.

Olivotto I, Oreziak A, Barriaes-Villa R et al. Mavacamten for treatment of symptomatic obstructive hypertrophic cardiomyopathy (EXPLORER-HCM): a randomised, double-blind, placebo-controlled, phase 3 trial. *Lancet.* 2020; 396:759-69.

Learning Objectives:

- Describe the EXPLORER-HCM trial by Olivotto and colleagues of mavacamten for treating patients with symptomatic obstructive hypertrophic cardiomyopathy.
- Develop recommendations for the use of mavacamten in patients with symptomatic obstructive hypertrophic cardiomyopathy.

Teerlink JR, Diaz R, Felker GM et al. Cardiac myosin activation with omecamtiv mecarbil in systolic heart failure. *N Engl J Med.* 2021; 384:105-16.

Learning Objectives:

- Describe the Global Approach to Lowering Adverse Cardiac Outcomes through Improving Contractility in Heart Failure (GALACTIC-HF) study by Teerlink and colleagues of omecamtiv mecarbil for heart failure with reduced ejection fraction.
- Develop recommendations for the use of omecamtiv mecarbil in patients with heart failure and reduced ejection fraction.

Felker GM, Solomon SD, Claggett B et al. Assessment of omecamtiv mecarbil for the treatment of patients with severe heart failure: a post hoc analysis of data from the GALACTIC-HF randomized clinical trial. *JAMA Cardiol.* 2022; 7:26-34.

Learning Objectives:

- Describe the post-hoc analysis by Felker and colleagues of data from the Global Approach to Lowering Adverse Cardiac Outcomes Through Improving Contractility in Heart Failure (GALACTIC-HF) trial.
- Develop recommendations for the use of omecamtiv mecarbil in patients with severe heart failure.

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Filippatos G, Anker SD, Agarwal R et al. Finerenone and cardiovascular outcomes in patients with chronic kidney disease and type 2 diabetes. *Circulation*. 2020; 143:540-52.

Learning Objectives:

- Describe the prespecified subgroup analysis of the Finerenone in Reducing Kidney Failure and Disease Progression in Diabetic Kidney Disease (FIDELIO-DKD) study of patients with chronic kidney disease (CKD) and type 2 diabetes mellitus.
- Develop recommendations for the use of finerenone in patients with chronic kidney disease (CKD) and type 2 diabetes mellitus.

Pitt B, Filippatos G, Agarwal R et al for the FIGARO-DKD investigators. Cardiovascular events with finerenone in kidney disease and type 2 diabetes. *N Engl J Med*. 2021; 185:2252-63.

Learning Objectives:

- Describe the Finerenone in Reducing Cardiovascular Mortality and Morbidity in Diabetic Kidney Disease (FIGARO-DKD) trial.
- Develop recommendations for the use of finerenone in patients with chronic kidney disease (CKD) and type 2 diabetes mellitus.

Wong F, Pappas SC, Curry MP et al. Terlipressin plus albumin for the treatment of type 1 hepatorenal syndrome. *N Engl J Med*. 2021; 384:818-28.

Learning Objectives:

- Describe the CONFIRM study of terlipressin plus albumin for the treatment of type 1 hepatorenal syndrome (HRS-1).
- Develop recommendations for the use of terlipressin plus albumin for the treatment of patients with type 1 hepatorenal syndrome (HRS-1).

Price R, Smith D, Franklin G et al. Oral and topical treatment of painful diabetic polyneuropathy: practice guideline update summary. Report of the AAN Guideline Subcommittee. *Neurology*. 2022; 98:31-43.

Learning Objectives:

- Describe the American Academy of Neurology practice guideline update summary on the oral and topical treatment of painful diabetic polyneuropathy.
- Develop recommendations for the use of oral and topical treatments for painful diabetic polyneuropathy.

O'Shea RS, Davitkov P, Ko CW, et al. AGA clinical practice guideline on the management of coagulation disorders in patients with cirrhosis. *Gastroenterology*. 2021; 161:1615-27.

Learning Objectives:

- Describe the clinical practice guideline from the American Gastroenterological Association (AGA) Institute for the management of coagulation disorders in patients with cirrhosis.
- Develop recommendations for the management of coagulation disorders in patients with cirrhosis.

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Module 2C: Allergy, Asthma and Immunology

ACPE #: 0204-0000-22-937-H01-P

This module focuses on allergy, asthma, and immunology issues including asthma guidelines, long-acting antiretroviral therapy, and various topics related to adverse drug reactions and allergies.

Expert Panel Working Group of the National Heart, Lung, and Blood Institute (NHLBI) administered and coordinated National Asthma Education and Prevention Program Coordinating Committee (NAEPCC). 2020 focused updates to the asthma management guidelines: a report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group. *J Allergy Clin Immunol.* 2020; 146:1217-70. **Select readings only: Sections IV and V (pgs 1247 - 1258)**

Learning Objectives:

- Describe the 2020 focused updates to the asthma management guidelines from the National Asthma Education and Prevention Program Coordinating Committee (NAEPCC).
- Develop recommendations for the management of patients with asthma.

Menzies-Gow A, Corren J, Bourdin A, et al. Tezepelumab in adults and adolescents with severe, uncontrolled asthma. *N Engl J Med.* 2021; 384:1800-9.

Learning Objectives:

- Describe the NAVIGATOR trial of tezepelumab for the treatment of severe, uncontrolled asthma.
- Develop recommendations for the use of tezepelumab in patients with severe uncontrolled asthma.

Lee LM, Carias DC, Gosser R et al. ASHP guidelines on adverse drug reaction monitoring and reporting. *Am J Health-Syst Pharm.* 2022; 79:e83-e89.

Learning Objectives:

- Describe the ASHP guidelines on adverse drug reaction (ADR) monitoring and reporting.
- Develop recommendations for a comprehensive adverse drug reaction (ADR) monitoring and reporting program.

Alvarez-Arango S, Ogunwole SM, Sequist TD et al. Vancomycin infusion reaction—moving beyond "Red Man Syndrome." *N Engl J Med.* 2021; 384:1283-6.

Learning Objectives:

- Describe the rationale for the changes proposed by Alvarez-Arango and colleagues to the terminology and best practices used by healthcare providers to describe and document vancomycin infusion reaction.
- Develop recommendations for systemwide improvements in drug-allergy recognition and documentation that ensure the equitable delivery of health care to diverse patient populations.

Wulf NR, Schmitz J, Choi A, Kapusnik-Uner J. Iodine allergy: common misperceptions. *Am J Health-Syst Pharm.* 2021; 78:781-93.

Learning Objectives:

- Describe the analysis by Wulf and colleagues of evidence of allergy to medications that contain iodine or seafood.
- Develop recommendations for the use of iodine-containing medications in patients reporting an allergy to iodine or seafood and for documenting reactions to these substances.

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Johnson JL, Hawthorne A, Bounds M, Weldon DJ. New perspectives on propofol allergy. *Am J Health-Syst Pharm*. 2021; 78:2195-203.

Learning Objectives:

- Describe the available evidence of cross-reactivity to propofol in patients reporting an allergy to products containing egg, soy, or peanut; methods for screening for such allergies and determining whether to use propofol in these patients; and the evaluation and management of patients experiencing an anaphylactic reaction to propofol.
- Develop recommendations for the screening of adults for allergy to products containing egg, soy, or peanut; use of propofol or alternative strategies for sedation in these patients; and evaluation and management of patients experiencing an anaphylactic reaction to propofol.

Howe ZW, Norman S, Lueken AF et al. Therapeutic review of cabotegravir/rilpivirine long-acting antiretroviral injectable and implementation considerations at an HIV specialty clinic. *Pharmacotherapy*. 2021; 41:686-99.

Learning Objectives:

- Describe the long-acting injectable antiretroviral agent cabotegravir/rilpivirine and considerations in implementing its use in an HIV specialty clinic setting.
- Develop recommendations for implementing the use of the long-acting injectable antiretroviral agent cabotegravir/rilpivirine in an HIV specialty clinic setting.

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Field Testers

In progress

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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.

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.