

Materials for this course will release 09/21/2022

Pediatric Pharmacy Review Course, Pract Exam, and Core Therapeutic Modules Package (Cert # L229267)

Teaser: This online Specialty Review Course, Practice Exam, and Core Therapeutic Modules package will help you prepare for the Board of Pharmacy Specialty (BPS) examination. With this course, get comprehensive, practical guidance, with a variety of complex cases, including references for further study.

Tag: Certifications; Pediatrics



ACPE Numbers: Various – see listing below

Pre-Sale Date: 08/31/2022

Content Release Date: 09/21/2022

Expiration Date: 08/22/2023

Activity Type: Application-based

CE Credits: 25 contact hours (ACPE only)

Activity Fee: \$425 (ASHP member); \$625 (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 activities are intended for pharmacists who are seeking to update their knowledge and skills commensurate with a board certification examination in the areas listed below.

Activity Overview

This online course provides a robust preparatory curriculum for the pharmacy professional preparing for the Board of Pharmacy Specialties (BPS) Pediatric Specialty Certification Examination. Designed based on the domains, tasks, and knowledge statements developed by the BPS for the certification examination, this course will help you prepare for the exam by identifying areas needed for in-depth review of pediatric issues by:

- Reviewing pertinent clinical topics and practice skills
- Providing exam practice questions
- Listing valuable references for further study

This course is **NOT** intended for those obtaining recertification credit. To earn recertification credit, please see courses here: <http://elearning.ashp.org/catalog/pediatric-recert>

These activities are part of the ASHP professional development program.

REVIEW COURSE

This course consists of 21 activities (see table below) and provides up to 25 contact hours of continuing pharmacy education credit. The Review Course includes case-based presentations for application to real-life scenarios, a practice exam along with correct answers, and links to the reference sources, and domains, tasks, and knowledge statements. To help you further prepare, this package includes a compilation of practice questions in the same format and rigor to help you prepare for the BPS Specialty Examination.

Materials for this course will release 09/21/2022

| Learning Activity | ACPE Number | Contact Hours | ACPE Expiration Date |
|--|------------------------|---------------|----------------------|
| Complex Case: Deep Vein Thrombosis and Metabolic Syndrome | 0204-0000-22-620-H01-P | 1.50 ACPE | 09/22/2024 |
| Complex Case: Diabetic Ketoacidosis | 0204-0000-22-621-H01-P | 1.50 ACPE | |
| Complex Case: Acute Asthma | 0204-0000-22-622-H01-P | 1.50 ACPE | |
| Complex Case: Pneumonia and Septic Shock | 0204-0000-22-623-H01-P | 1.50 ACPE | |
| Complex Case: Acute Lymphoblastic Leukemia with Tumor Lysis Syndrome | 0204-0000-22-624-H01-P | 1.50 ACPE | |
| Regulatory and IRB Considerations | 0204-0000-22-625-H03-P | 0.50 ACPE | |
| Complex Case: Sickle Cell Disease with Vaso-Occlusive Crisis | 0204-0000-22-626-H01-P | 1.50 ACPE | |
| Medication Error and Practice Management | 0204-0000-22-627-H05-P | 1.50 ACPE | |
| Complex Case: Neonatal Sepsis | 0204-0000-22-628-H01-P | 1.50 ACPE | |
| Complex Case: Status Epilepticus and Cardiopulmonary Resuscitation | 0204-0000-22-629-H01-P | 1.50 ACPE | |
| Statistics, Evidence-Based Medicine, and Clinical Trial Design | 0204-0000-21-985-H04-P | 2.00 ACPE | 05/16/2024 |

Learning Objectives

After participating in these CPE activities, learners should be able to:

Complex Case: Deep Vein Thrombosis and Metabolic Syndrome

ACPE #: 0204-0000-22-620-H01-P

- Develop appropriate treatment and monitoring plans for a complex pediatric patient with multiple conditions, including deep vein thrombosis, type 2 diabetes mellitus, dyslipidemia, and hypertension.
- Identify resources and treatment options for sexually transmitted infections.
- Select appropriate monitoring considerations of anticoagulation medications.
- Recognize the impact of pharmacogenomic differences on warfarin therapy.

Complex Case: Diabetic Ketoacidosis

ACPE #: 0204-0000-22-621-H01-P

- Develop appropriate treatment and monitoring plans for a complex pediatric patient with multiple conditions, including diabetic ketoacidosis, type 1 diabetes mellitus, and urinary tract infection.
- Calculate maintenance and replacement fluid requirements and urine output.
- Identify factors affecting medication adherence.
- Recommend appropriate dosing of insulin based on patient age and weight.
- Select an effective method of delivery for insulin.

Materials for this course will release 09/21/2022

Complex Case: Acute Asthma

ACPE #: 0204-0000-22-622-H01-P

- Develop appropriate treatment and monitoring plans for a complex pediatric patient with multiple conditions, including acute and chronic asthma, ADHD, acne and GERD.
- Evaluate essential components of social history, including smoke exposure and home environment.
- Formulate a plan to address barriers to patient education and adherence, including age, language, cultural considerations, and inhaler technique.
- Describe the impact of age on classification and management of asthma.
- Assess available resources to improve access to medications, including patient assistance programs.

Complex Case: Pneumonia and Septic Shock

ACPE #: 0204-0000-22-623-H01-P

- Develop appropriate treatment and monitoring plans for a complex pediatric patient with multiple conditions, including pneumonia, septic shock, and acute kidney injury.
- Calculate creatinine clearance, fluid requirements, and urine output in pediatric patients.
- Apply scoring systems to assess pediatric patients.
- Select appropriate dosing for medications based on renal dysfunction and/or replacement modalities.
- Differentiate vital signs between stable and critically-ill pediatric patients.

Complex Case: Acute Lymphoblastic Leukemia with Tumor Lysis Syndrome

ACPE #: 0204-0000-22-624-H01-P

- Develop appropriate treatment and monitoring plans for a complex pediatric patient with multiple conditions, including acute lymphoblastic leukemia (ALL), tumor lysis syndrome, febrile neutropenia, invasive aspergillosis infection, and Clostridium difficile infection.
- Select appropriate medication dose modifications related to hepatic impairment.

Regulatory and IRB Considerations

ACPE #: 0204-0000-22-625-H03-P

- Identify appropriate off-label use of medications in the pediatric population.
- Recognize IRB requirements for documentation of clinical studies
- List characteristics of patients who require informed assent/consent.
- Recognize federal legislation relevant to the use of medications in pediatric patients.

Complex Case: Sickle Cell Disease with Vaso-Occlusive Crisis

ACPE #: 0204-0000-22-626-H01-P

- Develop appropriate treatment and monitoring plans for a complex pediatric patient with multiple conditions, including a vaso-occlusive crisis, cellulitis, constipation, and need for immunizations.
- Select most appropriate patient controlled analgesia regimen based on vaso-occlusive crisis severity.
- Apply pharmacodynamic principles when selecting appropriate antibiotic regimens.
- Identify required immunizations for adolescents, including patients with risk factors for vaccine-preventable diseases.

Materials for this course will release 09/21/2022

Medication Error and Practice Management

ACPE #: 0204-0000-22-627-H05-P

- Incorporate position statements, white papers, national guidelines from recognized regulatory organizations into institutional policies and procedures related to:
- Medication reconciliation
- Appropriate drug preparation and delivery (e.g., extemporaneous compounding and standardized concentrations)
- Selection of appropriate equipment/technology and decision support.
- Adverse drug event monitoring and reporting, or
- Metrics for evaluating quality of pediatric pharmacy services.

Complex Case: Neonatal Sepsis

ACPE #: 0204-0000-22-628-H01-P

- Develop appropriate treatment and monitoring plans for a complex neonatal patient with multiple conditions, including patent ductus arteriosus, apnea of prematurity, early and late onset sepsis, and necrotizing enterocolitis.
- Evaluate the clinical and therapeutic implications of placental transfer of medications.
- Identify age-specific pharmacokinetic differences among neonates, infants, children, and adolescents.
- Apply FDA alerts for adverse drug events and drug-drug interactions into clinical practice.
- Identify characteristics that facilitate transfer of medications into the breast milk.

Complex Case: Status Epilepticus and Cardiopulmonary Resuscitation

ACPE #: 0204-0000-22-629-H01-P

- Develop appropriate treatment and monitoring plans for a complex pediatric patient with multiple conditions and needs, including status epilepticus, cardiopulmonary resuscitation, and sedation/analgesia.
- Differentiate treatment options in cardiopulmonary arrest based upon patient presentation.
- Select the appropriate dose and route of administration for medications.
- Assess the need and processes for reporting adverse drug events.
- Identify cultural considerations related to treatment and counseling of the pediatric population.
- Distinguish between the four preceptor roles.

Statistics, Evidence-Based Medicine, and Clinical Trial Design

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

- Interpret biomedical literature with regard to study design, methodology, statistical analysis, and significance and applicability of reported data and conclusions.
- Explain the use of evidence-based treatment guidelines and protocols.
- Summarize key points from the most current pharmacy practice literature.

Materials for this course will release 09/21/2022

CORE THERAPEUTIC MODULES

The Core Therapeutic Modules Review Package consists of 9 activities in which faculty review clinical topics and practice skills using a case-based approach. The activities are designed to assist the learner in identifying knowledge gaps in preparation for a pharmacy specialty board examination. In addition to a recorded presentation, each activity includes links to resources for further self-study and a practice test developed in the same format and rigor as the specialty exam.

| Learning Activity | ACPE Number | Contact Hours | ACPE Expiration Date |
|--|------------------------|---------------|----------------------|
| Select Topics in Pediatric Critical and Emergency Care | 0204-0000-21-607-H01-P | 1.00 ACPE | 09/12/21 |
| Select Topics in Pediatric Cardiovascular Disease | 0204-0000-22-630-H01-P | 1.00 ACPE | 09/21/25 |
| Select Topics in Pediatric Hematology Oncology | 0204-0000-21-608-H01-P | 1.00 ACPE | 05/30/23 |
| Select Topics in Pediatric Infectious Diseases Part 1 | 0204-0000-22-631-H01-P | 1.00 ACPE | 09/25/22 |
| Select Topics in Pediatric Infectious Diseases Part 2 | 0204-0000-20-604-H01-P | 1.00 ACPE | 09/22/23 |
| Select Topics in Pediatric Neurology and Psychiatry Part 1 | 0204-0000-21-609-H01-P | 1.00 ACPE | 09/12/21 |
| Select Topics in Pediatric Neurology Part 2 - Focus on Seizures | 0204-0000-22-632-H01-P | 1.00 ACPE | 09/25/22 |
| Select Topics in Pediatric Nutrition | 0204-0000-20-605-H01-P | 1.00 ACPE | 09/22/23 |
| Select Topics in Pediatric Pulmonary Disease: Cystic Fibrosis and Chronic Asthma | 0204-0000-20-606-H01-P | 1.00 ACPE | 09/22/23 |

Learning Objectives

After participating in these CPE activities, learners should be able to:

Select Topics in Pediatric Critical and Emergency Care

ACPE #: 0204-0000-21-607-H01-P

- Interpret diagnostic and/or laboratory tests, vital signs, and clinical presentation of a pediatric patient with traumatic brain injury or select toxicological emergencies (e.g., acetaminophen, ethylene glycol).
- Develop the most appropriate therapy and monitoring plans based on patient-specific information and the most current guidelines.
- Develop appropriate medication dosing plans for a pediatric patient on ECMO.
- Develop plans to manage underlying disorders.

Select Topics in Pediatric Cardiovascular Disease

ACPE #: 0204-0000-22-630-H01-P

- Interpret signs, symptoms and diagnostic tests in a pediatric patient with congenital heart disease (specifically VSD, ASD, TOF, coarctation of aorta, and hypoplastic left heart) or Kawasaki disease
- Identify drug-related problems, including drug interactions.
- Develop the most appropriate therapy and monitoring plans based on patient-specific information and the most current guidelines.
- Use PALS to determine appropriate therapy for bradycardia and tachycardia.

Materials for this course will release 09/21/2022

Select Topics in Pediatric Hematology and Oncology

ACPE #: 0204-0000-21-608-H01-P

- Interpret signs, symptoms and diagnostic tests for chemotherapy-induced nausea and vomiting, mucositis, immune thrombocytopenia, infantile hemangioma, and palliative care in pediatric cancer patients
- Evaluate patient information to identify drug-related problems and response to therapy.
- Identify appropriate modifications and supportive care plans based on patient-specific follow up assessment.

Select Topics in Pediatric Infectious Diseases Part 1

ACPE #: 0204-0000-22-631-H01-P

- Develop treatment and monitoring plans based on patient-specific information and the most current guidelines for a well-appearing febrile infant.
- Develop treatment and monitoring plans based on patient-specific information and the most current guidelines for a pediatric patient with otitis media
- Develop treatment and monitoring plans based on patient-specific information and the most current guidelines for a pediatric patient with bronchiolitis
- Develop treatment and monitoring plans based on patient-specific information and the most current guidelines for a pediatric patient with tuberculosis
- Develop treatment and monitoring plans based on patient-specific information and the most current guidelines for a pediatric patient with meningitis
- Develop treatment and monitoring plans based on patient-specific information and the most current guidelines for a pediatric patient with pneumonia

Select Topics in Pediatric Infectious Diseases Part 2

ACPE #: 0204-0000-20-604-H01-P

- Develop treatment and monitoring plans based on patient-specific information and the most current guidelines for a pediatric patient with HIV, Herpes Simplex Virus Types 1 and 2, or systemic fungal infections.

Select Topics in Pediatric Neurology and Psychiatry Part 1

ACPE #: 0204-0000-21-609-H01-P

- Develop treatment and monitoring plans based on patient-specific information and the most current guidelines for a pediatric patient with migraines, autism, cerebral palsy, depression or anxiety.
- Evaluate patients for drug-related problems and response to therapy.
- Identify appropriate modifications of patient-specific treatment plans based on follow up assessment.

Select Topics in Pediatric Neurology Part 2 - Focus on Seizures

ACPE #: 0204-0000-22-632-H01-P

- Develop treatment and monitoring plans based on patient-specific information and the most current guidelines for a pediatric patient with febrile seizures, neonatal seizures, infantile spasms, absence seizures, and Lennox-Gastaut syndrome.
- Evaluate patients for drug-related problems.
- Identify appropriate modifications of patient-specific treatment plans based on follow up assessment.

Select Topics in Pediatric Nutrition

ACPE #: 0204-0000-20-605-H01-P

- Evaluate if nutrition needs of a pediatric patient are being met based on assessment of appropriate growth and development.
- Develop treatment and monitoring plans based on patient-specific information and the most current guidelines for a pediatric patient with parenteral or enteral nutrition needs.
- Evaluate patients for weight (overweight or obese) based on current guidelines.

Materials for this course will release 09/21/2022

Select Topics in Pediatric Pulmonary Disease: Cystic Fibrosis and Chronic Asthma

ACPE #: 0204-0000-20-606-H01-P

- Interpret relevant clinical and laboratory data and results of diagnostic procedures in a pediatric patient with an exacerbation of cystic fibrosis or chronic asthma.
- Identify relevant differences in laboratory sampling for pediatric patients (e.g., blood volume; method, frequency and timing of sampling).
- Develop the most appropriate therapy and monitoring plans based on patient-specific information and the most current guidelines.

Faculty

Teia Brandenburg, PharmD, BCPPS
Clinical Pharmacist – Child Neurology
University of Kentucky Healthcare
Lexington, Kentucky

Kaitlin Hughes, PharmD, BCPPS
Clinical Pharmacist Pediatric Critical Care
Riley Hospital for Children at IU Health
Indianapolis, Indiana

Peter N. Johnson, PharmD, BCPPS, BCPS, FCCM, FPPAG
Professor of Pharmacy Practice
University of Oklahoma College of Pharmacy
Oklahoma City, Oklahoma

Michelle Kussin, PharmD, BCOP
Clinical Pharmacist, Pediatric Infectious Diseases
Riley Hospital for Children at Indiana University Health
Indianapolis, Indiana

Kevin Lonabaugh, PharmD, BCACP, AAHIVP, AE-C
Clinical Pharmacist - Pediatric Ambulatory Care
University of Virginia Children’s Hospital
Charlottesville, Virginia

Mya Merrow, PharmD, BCOP
Pediatric Oncology Clinical Pharmacist
Children’s Hospital Colorado
Aurora, Colorado

Rachel S. Meyers, PharmD, BCPPS, BCPS, FPPAG
Clinical Associate Professor

Ernest Mario School of Pharmacy Rutgers, The State
University of New Jersey
Piscataway, New Jersey
Pediatric Pharmacist
Saint Barnabas Medical Center
Livingston, New Jersey

Jamie L. Miller, PharmD, BCPPS, BCPS, FPPAG*
Professor
University of Oklahoma College of Pharmacy
Oklahoma City, Oklahoma

Jill Morgan, PharmD, BCPPS, BCPS
Professor and Chair
University of Maryland School of Pharmacy
Baltimore, Maryland

Ashley Nebbia, PharmD, BCCPS
Emergency Medicine Clinical Pharmacist
Golisano Children’s Hospital of SW Florida
Fort Myers, Florida

Jennifer Thackray, PharmD, BCPPS, BCPS*
Pediatric Oncology Clinical Pharmacy Specialist
Memorial Sloan Kettering Cancer Center
New York

Lisa Thames, PharmD, BCPS
Assistant Director, Inpatient Pharmacy Services
UF Health Shands Hospital
Gainesville, Florida

*Content matter experts

Reviewers

Michelle Abalos, PharmD
Susan R. Dombrowski, M.S., R.Ph.
Kristi Hofer, PharmD

Materials for this course will release 09/21/2022

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 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.

To maintain its strict, independent standards for certification, BPS does NOT endorse or provide review information, preparatory courses, or study guides for Board Certification Examinations.