

Upstate University Hospital – PGY1 Pharmacy Residency Program

Board Certified Pharmacotherapy Specialist Preparatory Program Curriculum

Purpose of BCPS Preparatory Program:

The Board-Certified Pharmacotherapy Specialist (BCPS) preparatory program at Upstate University Hospital is designed to help prepare PGY1 Pharmacy residents to take the BCPS examination after graduation with minimum difficulty. This program will augment the residency training by serving as disease state presentations/discussions sessions for the internal medicine learning experience.

We hope the program would provide a comprehensive review of the three knowledge domains evaluated on the exam including:

1. Patient-centered pharmacotherapy
2. Application of evidence to practice and education
3. Healthcare Systems and Population health

Purpose of BCPS Examination¹:

The purpose of the BCPS exam is to validate that the pharmacist has the advanced knowledge and experience to improve patient outcomes through:

- Evaluation, implementation, monitoring, and optimization of pharmacologic and nonpharmacologic therapy
- Provision of patient-centered, evidence-based therapeutic interventions and information.
- Functioning as a member of an interprofessional team providing direct patient care
- Collaboration within an interprofessional team to improve quality and safety, in addition to optimization of medication use systems.

¹Reference: https://www.accp.com/docs/education/BPS_BCPS_Outline.pdf

Knowledge Assessments:

1. All candidates will be required to take a preprogram and an end of program knowledge and aptitude test to help assess the impact of the learning experience
2. Periodic assessments will occur with each learning module using the assessment questions provided in the Pharmacotherapy Re-assessment Programs (PSAP) or its equivalent to help focused on the specific topic covered, followed by group discussions.

Faculty:

Table 1. BCPS Preparatory Program Faculty

Name	Affiliation
William Darko, BPharm, PharmD, BCCCP	PGY1 Pharmacy Residency Program Director Director, Pharmacy Residency Clinical Research Microcredential

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	darkow@upstate.edu
Christopher Miller, PharmD, BCPS	Associate Director, Clinical Pharmacy and Research Chair, Pharmacy Residency Research Committee millerchr@upstate.edu
Gregory Cwikla, PharmD, BCCCP	PGY1 Pharmacy Residency Program Coordinator cwiklag@usptate.edu
Eric Sidman, PharmD, BCPS, AAHIVP	PGY1 Pharmacy Residency Preceptor Clinical Pharmacist, Ambulatory Care Services sidmane@upstate.edu
Katie Parsels, PharmD, BCIDP, AAHIVP	Clinical Pharmacist, Upstate University Hospital parselsk@upstate.edu
Courtney Kelly, PharmD, BCPS	Clinical Pharmacist, Upstate University Hospital kellycou@upstate.edu
Kaitlyn Agedal, PharmD, BCPS	Clinical Pharmacist, Upstate University Hospital agedalk@upstate.edu

American Society of Health System Pharmacists Goals and Objectives:

The Goals and Objectives of the BCPS Preparatory Program (Adapted with modification from American Society of Health-System Pharmacists (ASHP) Residency Program Goals and Objectives)

Table 2. ASHP Goals and Objectives

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Goal	Objective	Description
R1.1	R1.1.3	<p>Collect information on which to base safe and effective medication therapy.</p> <p>Criteria:</p> <ul style="list-style-type: none"> ● Collection/organization methods are efficient and effective ● Collects relevant information about medication therapy ● Sources of information are the most reliable ● Clarifies information as needed

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R1.1	R1.1.4	Analyze and assess information on which to base safe and effective medication therapy. Criteria: <ul style="list-style-type: none"> • Includes accurate assessment of patients • Identifies medication therapy problems
R1.1	R1.1.5	Design or redesign safe and effective patient-centered therapeutic regimens and monitoring plans. Criteria: <ul style="list-style-type: none"> • Specifies evidence-based, measurable, and achievable therapeutic goals that include consideration of relevant patient-specific information • Design regimens that are appropriate for the disease states being treated, reflex therapeutic goals established for the patient, and consider any other pertinent patient-specific factors • Design regimen monitoring plans that effectively evaluation achievement of therapeutic goals
R3.2	R3.2.2	Explain the elements of the pharmacy enterprise and their relationship to the health care system. Criteria: <ul style="list-style-type: none"> • Identifies appropriate resources to keep updated on changes within pharmacy and health care • Explains changes to laws and regulations related to medication use • Explains external quality metrics
R4.1	R4.1.4	Appropriately assess effectiveness of education. Criteria: <ul style="list-style-type: none"> • Provides timely, constructive, and criteria-based feedback • Determines how well learning objectives were met

Program Design:

The BCPS preparatory program consists of 25.5 hours of live/virtual didactic lectures and 15.5 hours of discussion-based question and answer sessions. Participants of the program will be assigned topics and faculty preceptors for each topic prior to the start of the program. The assigned topics will be researched and taught to the other members of the program via a presentation or a discussion-based question and answer session (see Table 3). Each lecture or session will contain practice questions, similar to those that are seen on the BCPS exam. The PSAP module or it equivalent will be used to help deign the program.

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The BCPS preparatory program is a longitudinal didactic course comprised of live and online sessions. It will serve as a diseases state topic presentations/discussion session for the internal medicine learning experience. Presentations/discussions will be about 1 to 2-hour sessions. It will start in August and ends in June of the pharmacy residency training academic year. The lecture schedule will be communicated to participants, pharmacy residents and faculty at least 14 days prior to the start of the program.

Evaluations:

- 1) Participants are required to complete evaluations of each presenter at the end of the lecture/presentation/discussion session
- 2) Participants are encouraged to equally provide verbal feedback to faculty members throughout the course of the program
- 3) Feedback from participants, residents and faculty would be used to help improve on the quality of the program

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Topics and Schedule:

Table 3. BCPS Preparatory Program Topics and Schedule

Topic	Objectives*	Hours	Schedule	Preceptors
Pulmonary Disorders and Adult Immunizations	<ol style="list-style-type: none"> 1. Design a patient-centered pharmacotherapy plan for initial treatment of asthma and chronic obstructive pulmonary disease according to evidence-based guidelines. 2. Assess the severity of a patient’s asthma and chronic obstructive pulmonary disease on the basis of clinical presentation. 3. Adjust a patient’s medication therapy for asthma and chronic obstructive pulmonary disease on the basis of symptom severity and clinical presentation. 4. Determine appropriate immunizations for an adult on the basis of patient-specific considerations, including age, medical conditions, contraindications, and immunization status. 	<p>1 hour Presentation</p> <p>1 hour Q&A</p>	<p>August 3</p> <p>August 4</p>	Eric Sidman Sara Farooqi
Psychiatry	<ol style="list-style-type: none"> 1. Examine pharmacotherapeutic options for managing schizophrenia, major depressive disorder (MDD), bipolar disorder, anxiety and anxiety-like disorders, insomnia, and substance use disorders (SUDs). 2. Select a drug used to treat these disorders on the basis of its unique pharmacologic properties, therapeutic efficacy, adverse effects, and cognitive and behavioral effects. 3. Formulate a pharmacotherapeutic 	<p>1 hour presentation</p> <p>1 hour Q&A</p>	<p>August 24</p> <p>August 25</p>	Eric Sidman Ally Hitchcock

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	treatment plan for a patient with a diagnosis of schizophrenia, MDD, bipolar disorder, anxiety and anxiety-like disorders, insomnia, or SUD.			
Men's and Women's Health	<ol style="list-style-type: none"> 1. Recommend appropriate treatment options for patients with menopausal symptoms and osteoporosis. 2. Identify drugs that are considered safe and unsafe during pregnancy and lactation, and differentiate between information resources for pregnancy and lactation. 3. Select the appropriate treatment for infertility or sexual dysfunction on the basis of patientspecific factors. 4. Devise a pharmacotherapeutic plan for appropriate contraceptive use, including assessment of estrogen-and progestin-related adverse effects or drug interactions, contraceptive method mishaps, and use of emergency contraception. 5. Identify common menstrual disorders and sexually transmitted diseases and recommend appropriate pharmacotherapy. 	<p>1 hour presentation</p> <p>1 hour Q&A</p>	<p>August 31</p> <p>September 1</p>	<p>Katie Parsels</p> <p>Courtney Kelly</p> <p>Lara Horvath</p>
Anticoagulation	<ol style="list-style-type: none"> 1. Recommend a patient-specific pharmacotherapy plan to reduce the risk of stroke in patients with atrial fibrillation. 2. Develop a feasible pharmacologic management plan to reduce thrombotic events in patients receiving aortic or mitral valve replacement. 3. Devise an evidence-based 	<p>1 hour presentation</p> <p>1 hour Q&A</p>	<p>September 13</p> <p>September 14</p>	<p>Katie Parsels</p> <p>Lara Horvath</p>

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	<p>pharmacotherapy plan for preventing and treating venous thromboembolism (VTE).</p> <ol style="list-style-type: none"> Analyze the need for anticoagulant therapy in patients with atrial fibrillation 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. 			
Geriatrics	<ol style="list-style-type: none"> Evaluate the impact of pharmacokinetic and pharmacodynamic changes in older adults on risk and benefit of medications. Assess inappropriate medication prescribing in older adults using accepted tools. Recommend appropriate pharmacotherapy for patients with dementia, including appropriate interventions for patients with behavioral and psychological symptoms of dementia (BPSD). Recommend appropriate treatment for urinary incontinence and benign prostatic hyperplasia (BPH). Evaluate the risks, benefits, safety, and efficacy of medication classes used in the treatment of osteoarthritis, rheumatoid arthritis, and gout. 	<p>1 hour presentation</p> <p>1 hour Q&A</p>	<p>September 27</p> <p>September 28</p>	<p>Geriatric PGY2</p> <p>Elizabeth Feldman</p> <p>Kaitlyn Agedal</p>
Infectious Diseases I	<ol style="list-style-type: none"> Identify the presenting signs and symptoms, etiology, and risk factors of 	2.5 hours of	October 10-11	Katie Parsels Ally Hitchcock

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	<p>respiratory tract infections, urinary tract infections, skin and soft tissue infections, osteomyelitis, central nervous system (CNS) infections, intra-abdominal infections, Clostridioides difficile infections, and endocarditis.</p> <p>2. Recommend appropriate treatment for patients with respiratory tract infections, urinary tract infections, skin and soft tissue infections, osteomyelitis, CNS infections, intra-abdominal infections, C. difficile infections, and endocarditis.</p> <p>3. Select appropriate preventive therapy for urinary tract infections, CNS infections, endocarditis, and surgical wound infections.</p>	<p>presentation</p> <p>1 hour Q&A</p>	<p>October 12</p>	
<p>Infectious Diseases II</p>	<p>1. Formulate an appropriate regimen to prevent or treat HIV infections, including initiating and monitoring therapy.</p> <p>2. Discuss appropriate treatment of the various acquired immunodeficiency syndrome opportunistic infections, including primary and secondary prophylaxis.</p> <p>3. Describe appropriate treatment and preventive therapy for tuberculosis, including infections with drug-resistant organisms.</p> <p>4. Design appropriate therapeutic regimens for treating systemic and superficial fungal infections and classify the various antifungal agents.</p>	<p>1 hour presentation</p> <p>1 hour Q&A</p>	<p>October 25</p> <p>October 26</p>	<p>Katie Parsels Ally Hitchcock Eric Sidman</p>
<p>Oncology Supportive</p>	<p>1. Identify, assess, and recommend appropriate pharmacotherapy for</p>	<p>1 hour presentation</p>	<p>November 2</p>	<p>Katie Parsels Kaitlyn Agedal</p>

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Care	<p>managing common complications of cancer chemotherapy, including nausea and vomiting, myelosuppression and the appropriate use of growth factors, infection, anemia and fatigue, cardiotoxicity, and extravasation injury.</p> <ol style="list-style-type: none"> 2. Assess and recommend appropriate pharmacotherapy for managing cancer-related pain. 3. Assess and recommend appropriate pharmacotherapy for managing oncologic emergencies, including hypercalcemia, tumor lysis syndrome, and spinal cord compression. 	n 1 hour Q&A	November 3	Irina Pustovalova Andrew Burgdorf
Gastrointestinal Disorders	<ol style="list-style-type: none"> 1. Review national guideline treatment strategies for the following gastrointestinal (GI) disorders: gastroesophageal reflux disease (GERD); peptic ulcer disease (PUD); ulcerative colitis (UC); Crohn disease (CD); chronic liver disease, including viral hepatitis and cirrhosis; constipation; diarrhea; irritable bowel syndrome (IBS); nausea; vomiting; pancreatitis; and upper GI bleeding, including prevention of stress-related mucosal disease (SRMD). 2. Recommend appropriate pharmacologic and nonpharmacologic interventions given a specific patient with one or more GI disorders. 3. Recognize pertinent information for educating patients and prescribers regarding the appropriate use of pharmacologic agents for various GI 	1 hour Q&A	November 16	Eric Sidman Ally Hitchcock

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	<p>disorders.</p> <ol style="list-style-type: none"> Evaluate and apply evidence related to GI disorders for patient care, including appropriate interpretation or use of study designs and statistical tests. 			
Nephrology	<ol style="list-style-type: none"> Categorize acute kidney injury (AKI) and chronic kidney disease (CKD) on the basis of patient history, physical examination, laboratory values, and risk factors. Formulate therapeutic plans to slow progression of CKD or decrease the risk of AKI. Develop a care plan to manage common complications observed in patients with CKD (e.g.- anemia, hyperphosphatemia, secondary hyperparathyroidism). Interpret results of clinical trials related to the treatment of patients with kidney disease or complications. 	<p>1 hour presentation</p> <p>1 hour Q&A</p>	<p>December 20</p> <p>December 21</p>	<p>Kaitlyn Agedal</p> <p>Chris Miller</p>
Endocrine and Metabolic Disorders	<ol style="list-style-type: none"> Differentiate between the diagnostic and classification criteria for various endocrine and metabolic disorders, including type 1 and type 2 diabetes, diabetes insipidus, polycystic ovary syndrome, obesity, and disorders of the thyroid, adrenal, and pituitary glands. Discriminate between the various therapeutic agents used in treating endocrine and metabolic disorders. Select appropriate treatment and monitoring options for a given patient presenting with one of the previously mentioned endocrine or metabolic disorders. 	<p>1.5 hour presentation</p> <p>1 hour Q&A</p>	<p>January 10</p> <p>January 11</p>	<p>Courtney Kelly</p> <p>Ashley Shtoyko</p>

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	<ol style="list-style-type: none"> 4. Recommend appropriate therapeutic management for secondary complications from diabetes or thyroid disorders. 			
Pediatrics	<ol style="list-style-type: none"> 1. Recommend therapeutic options to target the most common organisms in neonatal and pediatric sepsis and meningitis. 2. Identify the drugs available for preventing and treating respiratory syncytial virus and indications for use. 3. Explain the most common causative organisms of otitis media and potential treatment options. 4. Apply the recommended pediatric immunization schedule and discuss barriers to routine immunization. 5. Examine the differences in anticonvulsants, including pharmacokinetics and adverse effects, between children and adults. 6. Implement an appropriate treatment regimen for patients with attention-deficit/hyperactivity disorder. 	<p>1 hour presentation</p> <p>1 hour Q&A</p>	<p>January 24</p> <p>January 25</p>	<p>Kaitlyn Agedal</p> <p>Erin Beitz</p> <p>Lauren Deck</p>
Acute and Chronic care in Cardiology	<ol style="list-style-type: none"> 1. Distinguish between the treatments for acute coronary syndrome: ST-segment elevation myocardial infarction and non-ST-segment elevation acute coronary syndrome. 2. Formulate evidence-based treatment strategies for patients with acute decompensated heart failure. 3. Devise a treatment plan for patients presenting with ventricular or life-threatening arrhythmias. 4. Differentiate between goals and treatment 	<p>3 hours of presentations</p> <p>1 hour Q&A</p>	<p>March 1, March 2, March 8</p> <p>March 9</p>	<p>William Darko</p> <p>Jenna Harris</p> <p>Sara Farooqi</p>

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	<p>for hypertensive emergencies and hypertension without progressive organ damage.</p> <ol style="list-style-type: none"> 5. Recommend patient-specific pharmacologic therapy for the management of chronic heart failure, with an emphasis on mortality-reducing agents and their target doses. 6. Develop an evidence-based pharmacologic regimen and monitoring plan for patients with atrial fibrillation. 7. Develop an optimal pharmacologic management plan for a patient with hypertension according to practice guidelines and clinical trial evidence. 8. Design an appropriate dyslipidemia regimen based on a patient’s atherosclerotic cardiovascular disease (ASCVD) risk. 9. Determine the appropriate pharmacologic therapy for patients with stable coronary heart disease. 			
Fluids, Electrolytes and Nutrition	<ol style="list-style-type: none"> 1. Recommend an appropriate intravenous fluid regimen and monitoring parameters given a patient clinical scenario. 2. Discuss the appropriate roles and risks of hypertonic and hypotonic saline, recommend treatment regimens, and discuss appropriate monitoring parameters to ensure safe and effective use of these intravenous fluids. 3. Assess electrolyte abnormalities and recommend an appropriate pharmacologic treatment plan based on individual patient 	4 hours of presentation	April 17, April 19, April 26, April 27	William Darko Greg Cwikla

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	<p>signs and symptoms.</p> <p>4. Recommend a patient-specific enteral nutrition (EN) or parenteral nutrition (PN) formula, infusion rate, and monitoring parameters based on nutritional needs, comorbidities, and clinical condition.</p>			
Critical Care	<p>1. Interpret hemodynamic parameters and acid-base status in critically ill patients.</p> <p>2. Differentiate between presentation of and treatment strategies for hypovolemic, obstructive, cardiogenic, and distributive shock.</p> <p>3. Employ the appropriate use of fluids, vasopressors, antibiotics, and corticosteroids in patients with sepsis or septic shock.</p> <p>4. Recommend strategies to optimize care for targeted temperature management after cardiac arrest and for acute intracranial hemorrhage.</p> <p>5. Manage therapeutic options to minimize delirium and provide optimal analgesia, sedation, neuromuscular blockade, and nutritional support in critically ill patients.</p> <p>1. Select therapeutic options to prevent stress ulcers, venous thromboembolism, hyperglycemia, and ventilator-associated pneumonia in critically ill patients.</p>	<p>3 hours presentation</p> <p>1.5 hours Q&A</p> <p>1.5 hour preceptor taught session</p>	<p>May 16, May 17 (half presentation/half Q&A), May 22</p> <p>May 17 (half presentation/half Q&A), May 24</p> <p>May 25</p>	<p>William Darko</p> <p>Greg Cwikla</p>
Neurology	<p>1. Determine seizure type and appropriate use of antiepileptic drugs on the basis of their activity, adverse effects, and drug interactions for epilepsy and status epilepticus.</p> <p>2. Establish appropriate interventions for</p>	<p>1 hour presentation</p> <p>1 hour</p>	<p>June 6</p> <p>June 7</p>	<p>Eric Sidman</p> <p>Courtney Kelly</p>

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	<p>primary and secondary prevention of stroke and appropriate treatment for acute stroke.</p> <ol style="list-style-type: none"> 3. Initiate and monitor pharmacotherapy for Parkinson disease. 4. Differentiate between regimens for acute and prophylactic treatment of migraine, tension, and cluster headaches. 5. Identify appropriate therapies for individuals with multiple sclerosis. 6. Establish appropriate treatment for peripheral neuropathy. 	Q&A		
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*Objectives obtained from 2022 Updates In Therapeutics Pharmacotherapy Preparatory Review