

2017 Ambulatory Care Pharmacy Preparatory Review and Recertification Course

Learning Objectives

Practice Management Issues

Processes of Care/Organization Agreements/Special Issues in Pharmacy Practice

1. Define a pharmacist's scope of practice in ambulatory care pharmacy practice.
2. Construct a collaborative practice agreement, protocol, etc., that is in accordance with legal and regulatory requirements.
3. Compare and contrast the coding and billing for immunizations under Medicare Part B and Part D.
4. Describe different types of patient care services or practice models provided by a pharmacist within an ambulatory practice.
5. Apply tools and resources to detect, classify, report, analyze, and reduce preventable and non-preventable adverse drug events.
6. Formulate a plan to ensure patient access to medications by facilitating the use of prescription drug plans and other resources.
7. Use formulary management activities to improve the prescribing of safe, effective, and affordable treatments in an organization.
8. Describe the regulatory requirements applicable to pharmacy services using point-of-care testing.

Communication Strategies in Pharmacy Practice

1. Use strategies that develop patient rapport, foster trust, and effectively and efficiently obtain accurate, comprehensive histories, despite potential barriers in communication.
2. Use assessments of patients' knowledge, health literacy, self-management skills, health beliefs, and attitudes toward medications to tailor educational interventions that will improve adherence and self efficacy.
3. Communicate patient care activities and medication related information effectively to other health care professionals verbally and in writing through the medical record.
4. Discuss factors and methods used to assess and select appropriate written educational materials intended for the general public.
5. Serve as a patient advocate on medication-related issues within and outside the health care system.

Developing a Clinical Practice

1. Formulate an internal and external environmental scan for planning sustainable ambulatory clinical patient care service(s).
2. Create a formal service proposal or business plan with the key elements identified as important to your organization.
3. Develop a pro forma statement that financially supports your program within a business plan.
4. Incorporate the seven P's of marketing into a marketing plan for an ambulatory clinical service(s).
5. Identify and perform five clinic operational activities before opening a clinic, including developing an optimal workflow process for your services.
6. Develop and evaluate an effective set of clinic policies and procedures for an ambulatory clinic.

Managing a Clinical Practice

1. List three critical clinic functions to assess and review on an annual basis to sustain a top-level practice.
2. Develop a robust quality assessment program for your clinical service using the balanced scorecard.
3. Analyze sources of quality measures important to your organization, and select the measures important to your practice site or patient population.
4. Develop a credentialing and privileging process to ensure the competency of pharmacists providing direct patient care in the ambulatory setting.
5. Differentiate pharmacist billing opportunities between a hospital-based clinic, physician office, and community pharmacy.
6. Develop a proposal for pharmacists to participate in the range of current Medicare billing opportunities that will sustain the service for the next several years.
7. Describe how pharmacist services may be incorporated into the Merit-Based Incentive Payment System (MIPS) and advanced Alternative Payment Models (APMs) outlined in the Medicare Access and CHIP Reauthorization Act (MACRA) legislation.

Diabetes Mellitus, Endocrine Disorders, and Pulmonary Disorders

Diabetes Mellitus

1. Describe the normal regulation of blood glucose with respect to the actions of insulin, cortisol, growth hormone, glucagon, and incretins in glucose homeostasis.
2. Identify differences between prediabetes, type 1 diabetes mellitus (T1DM), type 2 diabetes mellitus (T2DM), and gestational diabetes mellitus, including differences in diagnostic criteria and clinical presentation.
3. Explain sick-day rules for a patient with diabetes mellitus (DM).
4. Compare agents used in the treatment of DM, including their mechanisms of action, adverse effects, contraindications, and overall effectiveness.
5. Select appropriate insulin regimens for patients on the basis of desired onset, peak, and duration of insulin effects.
6. Individualize a comprehensive glycemic treatment and monitoring plan for a patient with DM.
7. State appropriate lipid and blood pressure targets for patients with DM.

Endocrine Disorders

1. Identify the most vulnerable patient populations receiving thyroid hormone replacement and explain the importance of consistent levothyroxine replacement for these patients. In addition, identify appropriate thyroid hormone replacement therapy dosing strategies for all patients with hypothyroidism.
2. Discuss the pharmacotherapy of Graves disease, including the advantages and disadvantages of antithyroid drugs versus radioactive iodine and surgery.
3. Recommend appropriate patient-specific pharmacotherapy for the treatment of polycystic ovary syndrome.
4. Medically manage a patient presenting with hyperprolactinemia. In addition, describe the typical differences in presentation of men versus women with prolactin-secreting tumors.
5. Compare and contrast the available weight-loss medications with respect to efficacy and adverse effects, and design a patient-specific treatment plan for a patient who wishes to lose weight.

6. Compare and contrast the role of drug therapy, transsphenoidal surgery, and radiation therapy for a patient with a diagnosis of acromegaly, and design a patient-specific pharmacologic treatment and monitoring plan.
7. Describe the typical clinical features of patients with growth hormone deficiency, and design an appropriate pharmacologic treatment and monitoring plan on the basis of patient-specific factors.
8. Recognize the clinical presentation and treatment of a patient with adrenal insufficiency.
9. Identify indications when patients with Cushing syndrome would be candidates for pharmacologic treatment.
10. List symptoms of hyperaldosteronism, and recommend appropriate drug therapy for its treatment.
11. Compare the safety, efficacy, and routes of administration of available testosterone (T) replacement products. In addition, list appropriate monitoring guidelines for a man with hypogonadism receiving T-replacement therapy.

Pulmonary Disorders

1. Classify, assess control, select, and monitor appropriate treatment for pediatric and adult patients with asthma, adult patients with chronic obstructive pulmonary disease (COPD), and adult patients with obstructive sleep apnea (OSA), depending on patient-specific factors.
2. Educate patients about their therapy for asthma, COPD, OSA, and smoking cessation, including proper use of inhalers, holding chambers, positive airway pressure machines, and medications.
3. Select and monitor appropriate pharmacotherapy and provide behavioral counseling to assist a patient in quitting smoking.
4. Discuss public health, practice management, and patient advocacy issues as they pertain to asthma, COPD, OSA, and smoking cessation.

Psychiatric Disorders, Neurology, and Gastrointestinal Disorders

Psychiatric Disorders

1. Analyze the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) criteria, etiology, risk factors, and disease course for the anxiety disorders, sleep disorders, major depression, bipolar disorder, attention-deficit/hyperactivity disorder, and schizophrenia.
2. Apply a working knowledge of common drug and nondrug therapies for the psychiatric disorders, including drug, dose, frequency, adverse effects, drug interactions, and monitoring parameters.
3. Develop appropriate initial treatment plans and be able to modify therapy based on response and tolerability of medications for the psychiatric disorders described.
4. Assess treatment regimens for significant drug interactions and appropriateness of therapy, including use of polytherapy.

Neurology

1. Given a patient case, identify seizure type(s), and select an appropriate antiepileptic drug (AED) regimen for the patient with epilepsy.
2. Identify common adverse effects and drug interactions for first- and second-generation AEDs.
3. Describe the mechanism of action of a given AED regimen.
4. Recommend an appropriate pharmacologic therapy for a patient with acute or chronic migraine headache.
5. Select a currently approved treatment option for a patient with multiple sclerosis.
6. Formulate a treatment plan for a patient with Parkinson disease.

Gastrointestinal Disorders

1. Evaluate and apply national guideline–based treatment strategies for GI disorders.
2. Assess the benefits and risks of drug therapy for patients with GI disorders.
3. Recommend appropriate nonpharmacologic and pharmacologic interventions for the management of GI disorders.
4. Develop and implement a patient-specific comprehensive therapeutic plan for the management of GI disorders.
5. Provide drug-related patient education and counseling for pharmacologic therapies used in the management of GI disorders.

Infectious Diseases, Nephrology, and Bone/Joint and Rheumatology

Infectious Diseases I

1. Design appropriate treatment regimens for patients with sexually transmitted diseases.
2. Explain common routes of transmission of HIV and current screening guidelines.
3. Explain the mechanisms of action of antiretroviral agents and commonly encountered adverse effects.
4. Formulate treatment strategies for the management of HIV and commonly encountered opportunistic infections.
5. Select appropriate ancillary medications and immunizations as needed for the management of HIV infection and its associated morbidities.
6. Explain the epidemiology of influenza and herpesviruses and formulate appropriate strategies for treatment of infection.
7. Explain the risk factors for superficial and invasive fungal infections and design corresponding treatment regimens.
8. Identify and manage the drug interactions associated with anti-infective medications.

Infectious Diseases II

1. Design appropriate pharmacologic and nonpharmacologic treatment regimens for various patient populations with urinary tract infections, prostatitis, community-acquired pneumonia, sinusitis, pharyngitis, otitis media, skin and soft tissue infections, tuberculosis, ophthalmic infections, bone and joint infections, tick-borne infections, infective endocarditis, central nervous system infections, antibiotic prophylaxis, infectious diarrhea, and Clostridium difficile infections.
2. Identify risk factors and clinical circumstances for antimicrobial resistance.
3. Design an antimicrobial therapeutic regimen to treat resistant infections and prevent future development.
4. Apply evidence-based medicine and patient-specific factors to design antimicrobial regimens that are appropriate and cost effective for the patient.

Nephrology

1. Identify a patient at risk of, or presenting with, acute kidney injury, and formulate an appropriate recommendation.
2. Identify a patient at risk of, or presenting with, drug-induced kidney disease, and formulate an appropriate recommendation.

3. Compare and contrast the available methods to assess kidney function. Using appropriate data, assess kidney function in a patient.
4. Formulate an evidence-based treatment plan for managing the most common medical problems in patients with chronic kidney disease (CKD), including anemia and CKD-related mineral and bone disorder.
5. Construct a treatment plan to slow the progression of CKD in patients with hypertension and diabetes.
6. Describe the pharmacokinetic effects of peritoneal and hemodialysis on drug disposition.
7. List the most common nephrolithiasis prevention measures and treatment options.
8. List the multidisciplinary dialysis team members and their roles in patient care.
9. Describe Medicare Part B policies related to endstage renal disease (ESRD) and dialysis care (i.e., ESRD Prospective Payment System, Quality Incentive Program, Conditions for Coverage).
10. Describe the Centers for Medicare & Medicaid Services (CMS) Comprehensive ESRD Care Model (CEC).
11. Explain relevant Medicare Part D policies and issues for patients with ESRD.

Bone/Joint and Rheumatology

1. Systematically identify patients to screen for osteoporosis and use the screening results to guide the decision on how to treat the patient.
2. Use a STEPS-wise approach (safety, tolerability, efficacy, preference [pearls], simplicity) for comparing, recommending, and justifying a drug therapy regimen for osteoporosis.
3. Identify appropriate health maintenance interventions when caring for a patient receiving biologic and synthetic disease-modifying antirheumatic drug (DMARD) therapy.
4. Select the most appropriate treatment regimen for psoriatic arthritis on the basis of patient limitations because of the disease.
5. Create an algorithm or a stepwise approach to minimize pain and maximize functionality in patients with osteoarthritis.
6. Choose a drug therapy for treating fibromyalgia syndrome, based on drug efficacy and a patient's comorbid conditions.
7. Select follow-up screenings or laboratory tests at correct intervals for patients with systemic lupus erythematosus treated with hydroxychloroquine.
8. Formulate a care plan to help patients decrease their uric acid concentrations, gout symptoms, and gouty attacks by using nonpharmacologic and pharmacologic interventions.

Cardiology and Obstetrics/Gynecology

Cardiology I

1. Formulate appropriate oral anticoagulant treatment strategies for patients who develop venous thromboembolism (VTE) (deep venous thrombosis or pulmonary embolism) consistent with available consensus panel guidelines, recent U.S. Food and Drug Administration approvals, and randomized clinical trials.
2. Describe key differences in onset of action, dosing, administration, absorption, effects on common coagulation tests, and drug interactions between dabigatran, rivaroxaban, apixaban, and warfarin in the management of nonvalvular atrial fibrillation (NVAF) and treatment and prevention of VTE.
3. Develop a comprehensive education and monitoring plan for patients receiving oral anticoagulants for treatment and prevention of VTE, stroke prevention in NVAF, and stroke prevention associated with mechanical heart valves.
4. Develop patient-specific, guideline-driven treatment, monitoring, and follow-up plans for patients with heart failure (HF).

5. Identify the role of sacubitril/valsartan and ivabradine in the treatment of a patient with HF with reduced ejection fraction.
6. Develop patient-specific, guideline-driven treatment, monitoring, and follow-up plans for rate and pharmacologic rhythm control in a patient with atrial fibrillation (AF).
7. Identify patient-specific appropriate antiarrhythmic drugs for rhythm control in AF and ventricular tachycardia.
8. Describe current practice standards for agent selection and duration of antithrombotic therapy for stroke prevention after transcatheter aortic valve replacement for aortic stenosis.
9. Identify treatment goals, common adverse effects, clinically important drug interactions, monitoring, and REMS (Risk Evaluation and Mitigation Strategies) requirements for oral pharmacotherapy of pulmonary arterial hypertension.

Cardiology II

1. Recommend regimens for primary and secondary prevention of coronary heart disease (CHD) events according to current guidelines and performance measures.
2. Calculate a patient's 10-year risk for an atherosclerotic cardiovascular disease (ASCVD) event by using the 2013 Pooled Cohort Equation.
3. Formulate an appropriate antiplatelet regimen after percutaneous coronary intervention according to current guidelines and product labeling for P2Y₁₂ inhibitors and protease-activated receptor (PAR-1) antagonists.
4. Recommend an appropriate time frame for discontinuing antiplatelet medications for surgical procedures.
5. Apply an understanding of the mechanism of action and effects of antihypertensive medications to construct an appropriate pharmacologic and therapeutic monitoring plan for a patient with hypertension (HTN).
6. Design an evidence-based HTN medication regimen according to comorbid conditions (e.g., chronic kidney disease [CKD], diabetes mellitus, CHD) and for patients who require combination antihypertensive therapy to achieve their blood pressure goals.
7. Integrate an understanding of the mechanism of action and effects of lipid medications to select appropriate pharmacologic therapy and develop a monitoring plan for efficacy and safety.
8. Create an evidence-based lipid-lowering medication regimen for primary and secondary prevention and for patients with dyslipidemia and comorbid conditions (e.g., peripheral arterial disease [PAD], CKD, potential drug interactions, chronic elevation in creatine kinase).
9. Develop a treatment strategy for patients with peripheral arterial disease.
10. Recommend an evidence-based medication regimen for secondary prevention of stroke and transient ischemic attack (TIA).

Obstetrics/Gynecology

1. Recommend therapy for contraception, infertility, menstrual disorders, endometriosis, and symptoms of menopause on the basis of patient-specific information.
2. Recommend appropriate treatment for common acute and chronic conditions in pregnancy and lactation.
3. Develop patient education regarding medication use during pregnancy and lactation, contraception, infertility, menstrual disorders, endometriosis, and postmenopausal therapy.
4. Identify additional resources for health care providers and patients on contraception, infertility, pregnancy and lactation, menstrual disorders, endometriosis, and postmenopausal therapy.

Biostatistics, Study Designs, and Genitourinary & Fluids/Electrolytes

Biostatistics: A Refresher

1. Describe differences between descriptive and inferential statistics.
2. Identify different types of data (nominal, ordinal, continuous [ratio and interval]) to determine an appropriate type of statistical test (parametric vs. nonparametric).
3. Describe strengths and limitations of different types of measures of central tendency (mean, median, and mode) and data spread (standard deviation, standard error of the mean, range, and interquartile range).
4. Describe the concepts of normal distribution and the associated parameters that describe the distribution.
5. State the types of decision errors that can occur when using statistical tests and the conditions under which they can occur.
6. Describe hypothesis testing, and state the meaning of and distinguish between p-values and confidence intervals.
7. Describe areas of misuse or misrepresentation that are associated with various statistical methods.
8. Select appropriate statistical tests on the basis of the sample distribution, data type, and study design.
9. Interpret statistical significance for results from commonly used statistical tests.
10. Describe the similarities and differences between statistical tests, and state how to apply them appropriately.
11. Identify the use of survival analysis and different ways to perform and report it.

Study Designs: Fundamentals of Interpretation

1. Define, compare, and contrast the concepts of internal and external validity, bias, and confounding in clinical study design.
2. Identify potential sources of bias in clinical trials; select strategies to eliminate or control for bias.
3. Outline the hierarchy of evidence generated by various study designs.
4. Compare and contrast the advantages and disadvantages of various study designs (e.g., prospective; retrospective; case-control; cohort; cross-sectional; randomized controlled clinical trials; systematic review; meta-analysis). Delineate the difference between parallel and crossover study designs.
5. Select from various biostatistical measures to appropriately compare groups or their assessments from various study designs and use their findings/output to interpret results.
6. Define and evaluate odds, odds ratio, risk/incidence rate, relative risk (RR), and other risk estimates. Compute and evaluate number needed to treat and number needed to harm. Define and calculate terms such as point and period prevalence, incidence rate, prevalence rate, absolute risk difference, and RR difference.
7. Define and calculate terms such as true positive, false positive, true negative, false negative, sensitivity, specificity, positive predictive value, negative predictive value, positive likelihood ratio, and negative likelihood ratio.

Genitourinary & Fluids and Electrolytes

1. Describe the pathophysiology and clinical signs/ symptoms of benign prostatic hyperplasia (BPH), urinary incontinence, and erectile dysfunction (ED).
2. Identify common electrolyte abnormalities and nutritional deficiencies that occur in ambulatory older adults.
3. Evaluate and manage drug-induced causes of BPH, urinary incontinence, ED, hypokalemia, hyperkalemia, and hyponatremia in ambulatory older adults.
4. Compare and contrast pharmacologic interventions for BPH, urinary incontinence, ED, hypovitaminosis D, vitamin B12 deficiency, hypokalemia, and calcium supplementation.

5. Formulate treatment strategies for BPH, urinary incontinence, ED, hypovitaminosis D, vitamin B12 deficiency, and hypokalemia using patient-specific information.
6. Evaluate the risk-benefit of multivitamin supplementation and the risk-benefit of antioxidant plus zinc supplementation for macular degeneration.