

2022 ACCP/ASHP Ambulatory Care Pharmacy Preparatory Review and Recertification Course Learning Objectives

Trial Design and Biostatistics

1. Describe hypothesis testing and state the meaning of and distinguish between p values and confidence intervals, and measures of central tendency and data spread.
2. Define, compare, and contrast the concepts of internal and external validity, causation, association, bias, and confounding in trial design. Select strategies to eliminate or control for bias and improve internal and external validity.
3. 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).
4. Determine why a statistical test is appropriate or not appropriate, given the sample distribution, data type, and study design. Interpret statistical and clinical significance for results from commonly used statistical tests.
5. Define and evaluate odds ratio, risk/incidence rate, relative risk, number needed to treat, number needed to harm, and other risk estimates.

Endocrine Disorders

1. Identify appropriate thyroid hormone replacement therapy dosing strategies for patients with hypothyroidism and hyperthyroidism.
2. Recommend appropriate patient-specific pharmacotherapy for the treatment of polycystic ovary syndrome.
3. Medically manage a patient with hyperprolactinemia, acromegaly, and growth hormone deficiency.
4. Differentiate between available weight-loss medications and design a patient-specific treatment plan.
5. Recognize the clinical presentation, and design a treatment plan for, a patient with adrenal gland disorders and Cushing disease.
6. Compare available testosterone (T) replacement products and list appropriate monitoring guidelines for hypogonadism.

Cardiology I

1. Evaluate the appropriate use of aspirin for primary prevention of cardiovascular (CV) events according to practice guidelines and clinical trial evidence.
2. Design an evidence-based treatment and monitoring strategy for patients with hypertension (HTN) that considers goals of therapy, comorbid conditions, and compelling indications.
3. Create an evidence-based treatment and monitoring plan for patients receiving lipid-lowering therapies for primary and secondary prevention of atherosclerotic cardiovascular disease (ASCVD) and hypertriglyceridemia.
4. Devise an evidence-based treatment plan for secondary prevention of acute coronary syndrome (ACS), stroke and transient ischemic attack (TIA), and peripheral arterial disease (PAD).

Cardiology II

1. Formulate appropriate oral anticoagulant treatment strategies for patients who develop venous thromboembolism (deep venous thrombosis or pulmonary embolism), nonvalvular atrial fibrillation, or who have mechanical heart valves 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, edoxaban, and warfarin.
3. Develop patient-specific, guideline-driven treatment, monitoring, and follow-up plans for patients with heart failure, atrial fibrillation, or ventricular tachycardia.
4. Identify treatment goals, common adverse effects, clinically important drug interactions, monitoring, and risk evaluation and mitigation strategies requirements for oral pharmacotherapy of pulmonary arterial hypertension.

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, rheumatoid arthritis (RA), psoriatic arthritis (PsA), osteoarthritis (OA), fibromyalgia, gout, and systemic lupus erythematosus (SLE).
3. Choose a drug therapy for OA or fibromyalgia syndrome on the basis of drug efficacy and a patient's comorbid conditions.
4. Select screenings or laboratory tests at correct intervals for patients with RA, PsA, or SLE treated with disease-modifying antirheumatic drug (DMARD) or biologic DMARD therapies.
5. Formulate a care plan to help patients decrease their uric acid concentrations, gout symptoms, and gouty attacks using nonpharmacologic and pharmacologic interventions.

Diabetes Mellitus

1. Identify differences between prediabetes, type 1 diabetes mellitus (T1DM), type 2 diabetes mellitus (T2DM), and gestational diabetes mellitus (GDM), including differences in diagnostic criteria and clinical presentation.
2. Describe the pathophysiology of T1DM and T2DM.
3. Compare agents used in the treatment of diabetes mellitus (DM), including their mechanisms of action, adverse effects, contraindications, advantages, and disadvantages.
4. Select appropriate insulin regimens for patients on the basis of desired onset, peak, and duration of insulin effects.
5. Individualize a comprehensive glycemic treatment and monitoring plan for a patient with prediabetes, DM, and GDM.
6. Discuss appropriate blood pressure and lipid management for patients with DM.
7. Discuss the acute and chronic complications associated with DM and strategies to prevent them or slow their progression.

Obstetrics and 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. Recommend therapy for menopause on the basis of patient-specific information.
4. Develop provider and patient education regarding medication use during pregnancy and lactation, contraception, infertility, menstrual disorders, endometriosis, and postmenopausal therapy.

Pulmonary Disorders

1. Compare and contrast between common features of patients with asthma or chronic obstructive pulmonary disease (COPD).
2. Select appropriate evidence-based treatment for patients with asthma, COPD, and/or nicotine dependence based on specific patient factors and comorbidities.
3. Develop a comprehensive education plan with monitoring parameters for patients on therapy for asthma, COPD, and/or smoking cessation.
4. Compare and contrast the different respiratory inhaler devices and holding chambers.
5. Integrate brief behavioral counseling and smoking cessation best practices when assisting a patient with quitting smoking.

Practices and Processes of Care

1. Discuss issues with transitions of care, including a pharmacist's role in achieving quality measures and improving the process.
2. Describe different types of patient care services or practice models provided by a pharmacist within an ambulatory practice, along with any applicable regulatory requirements.
3. Apply tools and resources to detect, classify, report, analyze, and reduce preventable and non-preventable adverse drug events.
4. Use formulary management activities and other resources to improve the prescribing of safe, effective, and affordable treatments in an organization.

Communication Strategies in Pharmacy

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.

Developing and Managing a Clinical Practice

1. Perform an internal and external environmental scan and needs assessment to determine the need for and organizational value of an ambulatory pharmacist–provided patient care service.
2. Discuss steps to implement an ambulatory service, including identifying key stakeholders and developing essential clinic operational activities.
3. Develop a robust and sustainable quality assessment program using the balanced scorecard concept for your clinical service and identifying quality measures important to your organization and patient population.
4. Develop a credentialing and privileging process to ensure the competency of pharmacists providing direct patient care in your ambulatory service.
5. Identify and implement revenue-generating opportunities for pharmacist-provided patient care services in different ambulatory care settings.

Psychiatric Disorders

1. Analyze the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) criteria and disease course for anxiety disorders, sleep disorders, major depression, bipolar disorder, attention-deficit/hyperactivity disorder, schizophrenia, and substance use disorders.
2. Apply a working knowledge of common drug and nondrug therapies for psychiatric disorders, including drug, dose, frequency, adverse effects, drug interactions, and monitoring values.
3. Recommend appropriate treatments, including both lifestyle modification and specific drug therapy (medication dose, schedule, and delivery system), on the basis of relevant patient factors (pharmacodynamic, physiologic, pharmacokinetic, and socioeconomic parameters).
4. Monitor for adverse drug effects, drug-drug and drug-disease interactions, and appropriateness of therapy, including polytherapy.

Neurology

1. Given a patient case, select an appropriate antiepileptic drug (AED) regimen for a patient with epilepsy on the basis of seizure type and AED mechanism of action, common adverse effects, and drug interactions.
2. Recommend an appropriate pharmacologic therapy for a patient with episodic or chronic migraine headache.
3. Recommend and manage appropriate disease-modifying therapy for a patient with multiple sclerosis (MS) on the basis of MS subtype and other patient-specific factors.
4. Recommend an appropriate pharmacologic therapy for a patient with Parkinson disease, neuropathic pain, or Alzheimer disease.

Gastrointestinal Disorders

Gastrointestinal (GI) disorders within the objectives refer to the disorders covered in this chapter and include the following: gastroesophageal reflux disease, peptic ulcer disease, chronic liver disease manifestations, viral hepatitis, malabsorption syndrome, diarrhea, constipation, nausea and vomiting, irritable bowel syndrome, and inflammatory bowel disease.

1. Apply national guideline–based treatment strategies for gastrointestinal (GI) disorders.
2. Assess the benefits and risks of drug therapy for patients with GI disorders.

3. Recommend appropriate nonpharmacologic and pharmacologic interventions for managing GI disorders.
4. Develop and implement a patient-specific comprehensive therapeutic plan for managing GI disorders.
5. Provide drug-related patient education and counseling for pharmacologic therapies used in managing GI disorders.

Infectious Diseases I

1. Identify the clinical presentations of sexually transmitted infections, and design appropriate treatment regimens.
2. Describe the mechanisms of action and adverse effects associated with antiretroviral agents, and identify major drug interactions associated with them.
3. Formulate treatment strategies for the management of HIV and commonly encountered opportunistic infections.
4. Design appropriate strategies for treatment and prevention of influenza and other viral infections.
5. Explain the risk factors for superficial and endemic fungal infections, and design corresponding treatment regimens.

Infectious Diseases II

1. Design appropriate pharmacologic and nonpharmacologic treatment regimens for patients with urinary tract infections, prostatitis, community-acquired pneumonia, sinusitis, pharyngitis, acute otitis media, skin and soft tissue infections, latent tuberculosis infection, conjunctivitis, Lyme disease, antibiotic prophylaxis, infectious diarrhea, and *Clostridioides difficile* infections.
2. Identify risk factors and clinical circumstances for antimicrobial resistance.
3. Design an antimicrobial therapeutic regimen to treat resistant infections and prevent their 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 developing, or presenting with, acute kidney injury, drug-induced kidney disease, or chronic kidney disease (CKD), and formulate an appropriate care plan to mitigate risk and slow progression.
2. Using appropriate data, assess kidney function, dialysis regimen information, and pharmacokinetic/pharmacodynamic drug properties in a patient to inform clinical decision-making.
3. Formulate an evidence-based treatment plan for managing the most common medical problems in patients with CKD, including anemia, CKD-related mineral and bone disorder, and hyperkalemia.
4. Describe Medicare Part B and D policies related to end-stage renal disease (ESRD) and dialysis care (i.e., ESRD Prospective Payment System, Quality Incentive Program, Conditions for Coverage, Centers for Medicare & Medicaid Services Comprehensive ESRD Care Model) and their respective effects on medication use.

Dermatologic and Eyes, Ears, Nose, and Throat, and Immunologic Disorders

1. Formulate an ophthalmologic drug therapy regimen for a patient presenting with macular degeneration, dry eye syndrome, or glaucoma.
2. Construct an individualized pharmacy care plan for a patient with allergic rhinitis.
3. Using a treatment algorithm, initiate, change, and modify topical and oral therapeutic regimens for acne.
4. Recommend single or multiple topical and systemic agents for treating plaque psoriasis given a patient's disease presentation, severity, and prior therapies.
5. Effectively educate a patient presenting with a skin infestation or minor burn on the purpose, proper use, and potential adverse reactions of the first-line treatment options.

Genitourinary, Electrolytes, and Nutritional Deficiencies/Supplementation in Older Adults

1. Identify and assess common genitourinary diseases, electrolyte abnormalities, and nutritional deficiencies in ambulatory older adults.
2. Evaluate and manage drug-induced causes of benign prostatic hyperplasia (BPH), urinary incontinence, erectile dysfunction (ED), electrolyte abnormalities, and nutritional deficiencies in ambulatory older adults.
3. Compare and contrast pharmacologic interventions for BPH, urinary incontinence, ED, electrolyte abnormalities, and nutritional deficiencies.
4. Formulate treatment strategies for BPH, urinary incontinence, ED, electrolyte abnormalities, and nutritional deficiencies using patient-specific information.