

BOARD OF PHARMACY SPECIALTIES

2215 Constitution Avenue, NW
Washington, DC 20037
202-429-7591 · FAX 202-429-6304
bps@aphanet.org · www.bpsweb.org

Content Outline for the AMBULATORY CARE PHARMACY SPECIALTY CERTIFICATION EXAMINATION January 2010 (Systems & Patient Care Problems updated May 2010)

The following domains, tasks and knowledge statements were delineated by the BPS Specialty Council on Ambulatory Care Pharmacy and validated through a role delineation study in 2007. The proportion of examination items allotted to each domain was determined through analysis and discussion of the results of the role delineation study by the Specialty Council.

Each of the major areas/domains of Ambulatory Care Pharmacy practice noted below will be tested. Questions will not be grouped by domain. Rather, items testing each domain are distributed throughout the total examination. Please note this examination will **SAMPLE** a candidate's knowledge rather than try to test all of his/her knowledge.

The test items in Domain 1 that deal with direct patient care focus on the therapeutic areas listed in the *Systems and Patient-Care Problems* section of this document, which begins on page 11 (e.g., Cardiovascular, Endocrine, Infectious Diseases). Test items in Domain 1 that deal with age-specific problems are reflected across all organ systems and patient-care problems. There is a mixture of chronic and acute care problems, with several questions that are not specific to a patient acuity level.

DOMAIN 1: Direct Patient Care (50% of the examination)

Tasks:

1. Establish a caregiver relationship with the patient that fosters trust and open communication, and encourages patient self-management.
2. Interview patient/caregiver to obtain information relevant to the patient's care (for example, chief complaint, history of present illness).
3. Obtain the patient's medication history, including over the counter (OTC) medications, prescription medications, herbal and non-herbal dietary supplements, adherence, allergies, and previous adverse drug reactions.
4. Reconcile medications based on information obtained from patient/caregiver interview, patient's healthcare provider(s), patient's documented medication profiles, and medical records.
5. Obtain pertinent patient history (for example, family, medical, psychosocial, lifestyle, substances of abuse, diagnostic test results).

6. Perform pertinent physical assessments as they relate to patient's current condition and/or therapies (for example, vital signs, weight, palpation, auscultation, visual inspection).
7. Perform point of care testing (for example, blood glucose, cholesterol, INR, bone mineral density, peak flow).
8. Determine patient's willingness to work with an ambulatory care pharmacy specialist on health and medication-related issues.
9. Assess patient's self-management knowledge, understanding, skills, and willingness and ability to actively participate in his/her own care.
10. Assess benefits and risks of drug therapy for patients considering concomitant disease states, other medication, and other patient specific factors.
11. Assess the available information to identify drug related problems (for example, no drug, wrong drug, wrong dose, side effects, drug interactions) and response to therapy.
12. Assess the information gathered to identify non-drug factors that may affect patient outcomes (for example, tobacco, activity level, nutrition).
13. Identify and refer (i.e. triage) patients with needs beyond the scope of the ambulatory care pharmacy specialist.
14. Recognize patient-specific barriers to successful drug therapy (for example, social situations, patient denial, literacy, mental capacity, culture, language) and implement a plan to overcome these (for example, home visits, interpreter, picture-based education).
15. Provide drug-related patient education/counseling (for example, purpose of medication, proper administration, directions for use, foods or drugs to avoid while taking the medication, potential side effects and when to report problems).
16. Evaluate the patient's administration technique for medications that are not administered orally (for example, nasal inhalers, oral inhalers, eye drops, ear drops, subcutaneous injections).
17. Provide disease-related patient education/counseling (for example, diabetes, asthma, hypertension, dyslipidemia).
18. Provide wellness and prevention education/counseling (for example, lifestyle modifications, immunizations).
19. Recommend appropriate immunizations to specific patients.
20. Immunize patients by administering appropriate vaccines.
21. Provide OTC education/counseling (for example, herbals, non-herbal dietary supplements, vitamins, non-prescription drugs).
22. Perform collaborative drug therapy management via protocol or signed collaborative agreements with healthcare providers.
23. Provide integrated disease-state management (for example, pharmacotherapy clinics, primary care clinics where more than one disease may be addressed in a visit).

24. Provide focused disease-state management (for example, diabetes, hypertension, asthma, heart failure, anticoagulation, dyslipidemia, mental health, chronic pain).
25. Provide wellness and preventive programs for individual patients (for example, weight management program, tobacco cessation program, immunization program).
26. Identify situations in which OTC treatment may be appropriate, and recommend treatment options.
27. Make recommendations to manage drug therapy which may include initiation, modification, or discontinuation of medication therapy as appropriate.
28. Recommend appropriate self-care devices for monitoring chronic diseases (for example, blood glucose meters, peak flow meters, blood pressure monitors).
29. Teach patients how to use self-care devices for monitoring chronic diseases (for example, blood glucose meters, peak flow meters, blood pressure monitors).
30. Recommend appropriate health-related screening tests (for example, home pregnancy tests, hemoccult tests)
31. Define treatment goals in collaboration with the patient and other healthcare providers.
32. Determine patient's ability and willingness to pay for services (for example, insurance coverage, out of pocket expenses).
33. Emphasize affordability and cost-effectiveness when recommending drug therapy or designing a drug treatment plan.
34. Develop a patient-specific plan to address prioritized patient needs and identified drug-related problems to improve patient outcomes.
35. Implement a patient-specific plan to address prioritized patient needs and identified drug-related problems to improve patient outcomes.
36. Develop a patient-specific monitoring and follow-up plan in order to assess response to both drug and non-drug therapy and assure safety.
37. Communicate patient-specific findings and treatment recommendations to other healthcare professionals involved in the care of the patient.
38. Communicate patient-specific findings and treatment recommendations to the patient/caregiver in language they can understand (includes both written and verbal communication).
39. Conduct follow-up visits in order to assess response to both drug and non-drug therapy and assure safety.
40. Interpret follow-up laboratory (for example, potassium, sodium, creatinine, INR, liver function tests, cholesterol results) and other diagnostic results (for example, ECHO results, pulmonary function tests) to determine if and when adjustments to drug therapy are warranted.
41. Modify patient-specific treatment plan based on follow up assessment.
42. Determine patient-specific reasons for lack of adherence to recommended treatment and in collaboration with the patient develop a plan for improving adherence to therapy.

43. Document all patient care activities (for example, patient-specific findings, detailed treatment recommendations and communications with patient and other healthcare providers).

Knowledge of:

- 01 anatomy and physiology
- 02 pathophysiology
- 03 laboratory and disease/drug monitoring parameters and their interpretation as they relate to drug therapy
- 04 the clinical assessment process
- 05 physical assessment techniques
- 06 pharmacology
- 07 pharmacotherapy
- 08 the principles of both focused and integrated disease-state management
- 09 the principles of and regulations governing collaborative drug therapy management
- 10 OTC medications
- 11 the principles of self-care
- 12 herbal medications, non-herbal dietary supplements, and treatments used in complementary and alternative medicine
- 13 common immunizations
- 14 clinical practice guidelines (for example, JNC 7 guidelines, NCEP ATP III guidelines, NIH Asthma guidelines, GOLD guidelines, ACIP guidelines)
- 15 the principles and practice of evidence-based medicine
- 16 recent advances related to pharmacotherapy in ambulatory practice
- 17 factors affecting medication and treatment adherence
- 18 effective interventions to address medication and treatment nonadherence
- 19 the techniques for use of point of care testing (for example, blood glucose, cholesterol, INR)
- 20 patient interviewing skills
- 21 motivational interviewing techniques
- 22 how to assess the patient's readiness and/or willingness to participate in their own care
- 23 how to develop effective collaborative partnerships with individual patients in order to maximize trust, encourage patient self-management, and optimize treatment outcomes
- 24 barriers to patient education and interventions to overcome them

- 25 cultural diversity and how it may impact the care of the patient
- 26 humanistic factors (e.g., quality of life, end of life), and how they may impact the care of the patient
- 27 how to obtain a medication history
- 28 the principles and process of medication reconciliation
- 29 how to develop effective collaborative relationships with other healthcare professionals in order to access health-related patient information essential to the care of the patient
- 30 how to collaborate with other healthcare professionals to optimize patient care outcomes
- 31 how to prioritize patient needs and/or drug-related problems
- 32 the scope of practice of the ambulatory care pharmacy specialist
- 33 how to apply pharmacoeconomic principles when designing a treatment plan
- 34 how to develop an effective, individualized treatment plan
- 35 how to implement an effective, individualized treatment plan
- 36 patient education principles and techniques (for example, group classes, individual patient counseling).
- 37 the format for documentation of patient care activities, plans and recommendations (for example, SOAP notes)
- 38 the types, indications, and uses of health-related screening tests (for example, home pregnancy tests, hemoccult tests)
- 39 the types, indications, and uses of self-care devices for monitoring chronic diseases (for example, blood glucose meters, peak flow meters, blood pressure monitors)
- 40 the process of determining appropriateness of over-the-counter treatments for individualized patients
- 41 how to effectively communicate treatment recommendations to the appropriate healthcare provider(s)
- 42 how to effectively communicate with the patient
- 43 the principles and practices of wellness and prevention
- 44 lifestyle behaviors which impact chronic diseases (for example, dietary factors, exercise, tobacco use) and appropriate modifications
- 45 the proper administration techniques for various drugs and immunizations (for example, eye drops, inhalers, injections)
- 46 State and Federal regulations regarding protection of patient information
- 47 the steps involved in continuity of care between healthcare settings (i.e., transitioning)
- 48 appropriate writing techniques for composing patient education materials

- 49 appropriate presentation techniques (for example, audiovisual aids, handouts) for delivering educational programs

DOMAIN 2: Practice Management (20% of the examination)

Tasks:

1. Identify the need for ambulatory clinical pharmacy services in response to patient care needs and/or business potential (for example, Medication Therapy Management, focused or integrated disease-state management programs/clinics).
2. Establish new ambulatory clinical pharmacy services in response to patient care needs and/or business potential (for example, Medication Therapy Management, focused or integrated disease-state management programs/clinics).
3. Establish relationships and/or collaborative practice agreements with other health care providers.
4. Promote and market patient care services to patients and health care providers.
5. Establish and maintain a system for patient referral.
6. Establish and maintain a system for patient follow up.
7. Develop systems for ongoing quality improvement, patient safety, and provision of cost-effective care (for example, medication use evaluation, ADR reporting, incident report evaluation).
8. Perform ongoing evaluations of quality, value, and need to justify, modify, disband, or expand ambulatory care pharmacy services.
9. Participate as an integral member of an interdisciplinary health care team.
10. Assure time, space and resources necessary to provide patient care services (for example, patient education materials, immunization supplies, office equipment and space, ancillary personnel, staff).
11. Organize the practice in a manner that supports efficient work flow, integration of care, and assures timely patient visits and follow-up (for example, use of ancillary personnel, group visits, disciplined appointment system, use of technology, coordination of care between clinical and medication dispensing functions).
12. Manage a financially viable practice (for example, cash flow management, cash payment systems, insurance contracting, accounting systems, pricing, expense analysis).
13. Develop systems to obtain reimbursement for ambulatory clinical pharmacy services.
14. Develop or obtain scope of practice guidelines and protocols accepted by the provider and/or institution, and in accordance with legal and regulatory requirements.
15. Develop and implement policy and procedures that are in accordance with accepted guidelines and standards of practice.
16. Manage point of care testing in accordance with regulatory requirements (for example, OSHA, CLIA).

17. Provide a system for drug procurement (for example, contracts, buying groups, special order drugs, patient assistance programs).
18. Ensure timely and accurate delivery of medication to patients.
19. Participate in formulary management (for example, participate on P&T committee, develop criteria for use protocols, design cost-effective treatment protocols, develop system for obtaining prior authorization and nonformulary drugs based on medical necessity).
20. Report medication errors and develop systems to track and analyze these for possible intervention measures.

Knowledge of:

- 01 the collaborative care relationships necessary in fulfillment of the pharmacist's role in a successful ambulatory care practice
- 02 effective interdisciplinary communication strategies
- 03 the regulations surrounding collaborative drug therapy agreements
- 04 the strategies and resources necessary for establishing a collaborative care agreement and referral process
- 05 needs assessment techniques for prospective ambulatory care pharmacy services
- 06 development and implementation strategies for ambulatory care pharmacy services
- 07 the continuous quality improvement process
- 08 business principles to effectively manage the practice (for example, accounting, purchasing, resource utilization, work flow, profit analysis)
- 09 procedures for coding and billing as relevant to pharmacy practice
- 10 tasks involved in managing the implementation of a new service or program
- 11 effective marketing strategies for initiating or expanding ambulatory pharmacy services
- 12 systems for patient referral and follow up
- 13 special order drug systems (for example, patient assistant programs, Accutane®, Enbrel®, Clozaril®, thalidomide)
- 14 regulations with regard to point of care testing (for example, OSHA, CLIA, state Board of Pharmacy, other state laws)
- 15 how to integrate patient care services within an ambulatory dispensing pharmacy practice (for example, medication adherence programs, Medication Therapy Management services, and disease management clinics)
- 16 formulary management systems (for example, P&T committee function, therapeutic interchange, prior authorization, nonformulary process)
- 17 cost-effective alternative and therapeutic interchange options

- 18 State and Federal regulations regarding protection of patient information
- 19 scope of practice for ambulatory care pharmacy practice
- 20 process necessary for evaluation, analysis, and justification of services
- 21 compensation strategies and funding sources
- 22 the literature evaluating medication errors and patient safety (for example, IOM report, Beers criteria)
- 23 legislative and regulatory issues that impact the practice of ambulatory care pharmacy

DOMAIN 3: Public Health (5% of the examination)

Tasks:

1. Provide general information to the public regarding preventive health issues (for example, cardiovascular disease, tobacco cessation, immunizations).
2. Provide information to, and/or collaborate with other healthcare professionals to design intervention strategies that address preventive health issues.
3. Advise and direct the public and consumers to appropriate resource groups, organizations, and agencies (for example, Alzheimer's Association, American Cancer Society).
4. Participate in community health screening programs.
5. Serve as a public advocate regarding preventive health issues.
6. Advocate to ensure appropriate healthcare policy for ambulatory care pharmacy practice.
7. Facilitate appropriate care for patients affected by public health threats and disasters.
8. Participate in disaster response preparation and planning.

Knowledge of:

- 01 the role of ambulatory care pharmacists in public health
- 02 resources available through relevant groups, organizations, and agencies (for example, ADA, AHA, NIH, CDC, AAAAI)
- 03 disease prevention strategies
- 04 disease screening guidelines
- 05 legislative and regulatory issues that impact the prevention and treatment of diseases (e.g., immunization regulations, Medicare Part D)
- 06 information that is accessible to the public regarding the prevention and treatment of diseases (for example, reliable internet websites, toll-free information hotlines)
- 07 prevention and treatment of public health threats

DOMAIN 4: Retrieval, Generation, Interpretation and Dissemination of Knowledge (15% of the examination)

Tasks:

1. Stay current with the biomedical literature applicable to ambulatory care pharmacy practice.
2. Practice ongoing self-managed continuing professional development (for example, continuing education programs, practice self-evaluation, attend study or journal clubs).
3. Retrieve and interpret biomedical literature with regard to study design methodology, statistical analysis, and significance and applicability of reported data and conclusions.
4. Respond to drug information requests from patients and healthcare professionals.
5. Educate pharmacists, physicians, other allied health care professionals, students, and residents in the principles and practice of evidence-based medicine.
6. Provide health and medication-related education to healthcare professionals.
7. Provide experiential training to pharmacy students and residents in ambulatory care pharmacy practice.
8. Conduct research as principal investigator or co-investigator to generate knowledge applicable to ambulatory care pharmacy practice
9. Prepare and disseminate results of investigations (for example, case reports, abstracts, reviews, monographs) through publications and presentations to local, regional, and national audiences.
10. Document and report adverse drug-related events as appropriate (for example, adverse reactions, drug interactions, drug/device/assay defects) to add to the body of knowledge.
11. Participate in local, state, and/or national professional organizations.
12. Provide ongoing staff training and development, and opportunities/support for credentialing and continuing education.

Knowledge of:

- 01 principles of evidence-based medicine
- 02 common resources of biomedical literature applicable to ambulatory pharmacy practice
- 03 primary (for example, original research reports), secondary (for example, indexing and abstracting services), and tertiary (for example, textbook review articles) references
- 04 how to formulate a search strategy to retrieve information from the biomedical literature
- 05 process for identifying educational needs of healthcare professionals in ambulatory care practice
- 06 principles and methods of educating health care students, residents, and professionals
- 07 research methodology to interpret study validity (for example, study design, population selection, blinding, statistical analysis)

- 08 strengths and limitations of various study methods
- 09 clinical versus statistical significance in order to interpret medical literature
- 10 appropriate research methodology to design studies to assess a research hypothesis
- 11 regulatory requirements for the coordination of research (for example, HIPAA, IRB, OSHA)
- 12 methods for dissemination of research findings
- 13 the process/procedures for reporting appropriate adverse drug/vaccine events and problems observed with drug/vaccine products to appropriate governmental entities
- 14 the role and benefits of professional organizations for ambulatory care pharmacy practice
- 15 staff development principles and avenues for providing continuing education
- 16 certifications available to the ambulatory care pharmacy specialist (for example, Certified Diabetes Educator, Board Certified Pharmacotherapy Specialist, Certified Geriatric Pharmacist, Certified Anticoagulation Pharmacy Specialist, Certified Asthma Educator).
- 17 the existence and use of evidence-based treatment guidelines and protocols in the ambulatory care environment

DOMAIN 5: Patient Advocacy (10% of the examination)

Tasks:

1. Communicate patient-related information to healthcare professionals that advocates for optimal patient outcomes.
2. Facilitate access to Patient and/or Medication Assistance Programs.
3. Assist patients with understanding of prescription drug plans that provide optimal prescription drug coverage and facilitate best outcomes.
4. Resolve formulary issues to ensure access to cost-effective drug therapy.
5. Ensure appropriateness and accessibility of drug therapy during transitioning of care (for example, transition from acute to ambulatory care setting).
6. Ensure the patient has access to and understands the importance of maintaining an up-to-date medication list and emphasize the importance of sharing the list with all healthcare providers.
7. Establish a system for two-way communication between the pharmacist and the patient's healthcare providers in order to exchange vital patient information necessary to provide patient care.
8. Collaborate with other healthcare professionals to provide case management (for example, assess, plan, implement, coordinate, monitor, and evaluate the options and services required to meet the patient's health and human service needs).
9. Facilitate referrals for patients with needs beyond the scope of the ambulatory care pharmacist.
10. Advocate to ensure appropriate healthcare policy for optimal patient outcomes.

11. Manage conflict and differences of opinions with other healthcare professionals to optimize care for the patient.
12. Encourage patients to openly communicate health and medication related concerns with all healthcare providers (for example, patient disagreement with outlined treatment plan, use of herbal remedies or non-traditional treatments).

Knowledge of:

- 01 assertive and persuasive communication techniques for representing a patient's healthcare needs and interests
- 02 patient-specific factors which may impact access to medications (for example, socioeconomic)
- 03 the structure, guidelines, and process of patient and/or medication assistance programs
- 04 the structure, including benefits and limitations, of prescription drug plans/formularies for patients in ambulatory care
- 05 resources for medication reconciliation necessary to transition patients to and from the ambulatory care setting
- 06 medication reconciliation skills and techniques
- 07 the healthcare resources and services available to ambulatory care patients (for example, disease specific websites, medication assistance programs social services)
- 08 collaborative relationships necessary to enable case management of ambulatory care patients
- 09 the scope and limitations of ambulatory care pharmacy practice
- 10 legislative and regulatory issues that impact patient outcomes
- 11 conflict management and negotiation skills

SYSTEMS AND PATIENT-CARE PROBLEMS

Bone/Joint and Rheumatology

- Fibromyalgia
- Osteoarthritis
- Gout/Hyperuricemia
- Osteoporosis
- Psoriatic arthritis
- Rheumatoid arthritis
- Systemic Lupus Erythematosus
- Bone/Joint and Rheumatology miscellaneous

Cardiovascular

- Arrhythmias
- Cardiopulmonary resuscitation

- Coronary artery disease
- Dyslipidemia
- Heart failure
- Hypertension
- Peripheral arterial disease
- Primary pulmonary hypertension
- Thromboembolic disorders
- Valvular heart disease
- Cardiovascular miscellaneous

Dermatologic

- Acne
- Burns
- Dermatitis
- Decubitus ulcers
- Infestations (Lice, Scabies, Fleas)
- Psoriasis
- Urticaria
- Dermatologic miscellaneous

Endocrine

- Adrenal disorders
- Diabetes mellitus
- Hormone disorders (Growth Hormone, Testosterone Deficiency, Acromegaly)
- Metabolic syndrome
- Obesity
- Parathyroid disorders
- Polycystic ovary syndrome
- SIADH
- Thyroid disorders
- Endocrine miscellaneous

Eyes, Ears, Nose, and Throat

- Allergic rhinitis
- Dry eye
- Glaucoma
- Macular degeneration
- Vertigo
- EENT miscellaneous

Fluid and Electrolyte/Nutrition

- Electrolyte abnormalities
- Nutritional deficiencies
- Nutritional supplementation
- Fluid and Electrolyte/Nutrition miscellaneous

Gastrointestinal

- Constipation
- Diarrhea
- Chronic liver disease and cirrhosis

- Gastroesophageal reflux disease
- Gastrointestinal bleeding
- Hepatitis
- Inflammatory bowel disease
- Irritable bowel syndrome
- Malabsorption syndrome
- Nausea/vomiting
- Pancreatitis
- Peptic ulcer disease
- Gastrointestinal miscellaneous

Genitourinary

- Prostatic hyperplasia
- Sexual dysfunction
- Urinary incontinence
- Genitourinary miscellaneous

Hematologic

- Anemias
- Sickle cell disease
- Thrombocytopenia
- Hematologic miscellaneous

Immunologic

- Allergy/anaphylaxis
- Angioedema
- Organ transplantation
- Immunologic miscellaneous

Infectious Diseases

- Antimicrobial prophylaxis
- Bone and joint infections
- Central nervous system infections
- Ear infections
- Fungal infections
- Gastrointestinal infections
- Gynecologic infections
- Human Immunodeficiency Virus infection
- Infectious endocarditis
- Intra-abdominal infections
- Non-HIV viral infection
- Ophthalmic infections
- Prostatitis
- Respiratory tract infections
- Sexually transmitted diseases
- Sinusitis
- Skin and soft tissue infections
- Tick borne infections
- Tuberculosis

- Urinary tract infections
- Infectious Diseases miscellaneous

Neurological

- Central nervous system hemorrhage
- Cerebral ischemia (including ischemic stroke)
- Dementia
- Epilepsy
- Headache/migraine
- Neuromuscular diseases
- Pain
- Parkinson's disease
- Peripheral neuropathy
- Spinal-cord injuries/abnormalities
- Traumatic brain injury
- Tremors
- Neurological miscellaneous

Obstetrics/Gynecology

- Chronic disease in pregnancy
- Contraception
- Endometriosis
- Infertility
- Lactation
- Menopausal symptoms
- Menstrual disorders
- Pregnancy-related disease
- Obstetrics/Gynecology miscellaneous

Oncology

- Breast cancer
- Colon cancer
- Gynecological cancers
- Leukemia
- Lung cancer
- Prostate cancer
- Skin cancer
- Supportive care (e.g., preventing / treating complications associated with malignancy or treatment)
- Oncology miscellaneous

Psychiatric

- Anxiety disorders
- Attention deficit disorders
- Bipolar disorders
- Depressive disorders
- Drug/alcohol overdose/withdrawal
- Schizophrenia
- Sleep disorders

- Substance abuse
- Psychiatric miscellaneous

Renal

- Acute renal failure
- Chronic kidney disease
- Dialysis (managing associated complications and drug dosing)
- Nephrolithiasis
- Renal miscellaneous

Pulmonary

- Asthma
- Chronic obstructive lung disease
- Sleep apnea
- Pulmonary miscellaneous

Health Maintenance/Public Health

- Bioterrorism
- Complementary/Alternative medicines
- First Aid
- Health advice, education, or instruction
- Immunizations
- Lifestyle modification
- Palliative care
- Patient safety
- Routine health screening
- Tobacco cessation
- Toxicology/Poisoning
- Health Maintenance/Public Health miscellaneous