



## Detailed Content Outline

### I. GENERAL PRINCIPLES OF AGING (38 items, 25%)

#### A. Biology of Aging (8 items)

1. Recognize the spectrum of aging from healthy aging to frailty.
2. Recognize the physiological heterogeneity of the older adult population.
3. Apply the knowledge of physiologic changes associated with aging to the clinical use of medications.

#### B. Socioeconomics of Aging (30 items)

1. Social Issues
  - a. Evaluate the interrelationship between social issues and aging on healthcare decisions (e.g., family, cultural, community, housing, access to care, policy issues).
  - b. Recognize signs of substance and medication misuse/abuse in older adults.
  - c. Identify and manage the social issues of medication use for individual patient's therapy.
2. Ethics
  - a. Recognize ethical issues that arise during therapy with individuals who have diminished decision making capacity
  - b. Facilitate the resolution of ethical dilemmas in the provision of optimal patient-centered care.
  - c. Recognize the role of advanced directives and living wills, power of attorney, and other substitute decision-makers documents in medication use decisions.
3. Elder Abuse
  - a. Recognize elder abuse/neglect (e.g., physical, psychological, and financial).
  - b. Identify resources to assist in prevention, reporting, and treatment of elder abuse/neglect.
4. Economic Issues
  - a. Recognize issues related to payer coverage and benefits.
  - b. Assist patient with payment issues for medications, medication therapy management services, and medical equipment.
  - c. Assess financial/reimbursement issues (e.g., formularies, insurance coverage) when making therapeutic recommendations.
5. Cultural Competencies
  - a. Understand cultural competencies (e.g., ethnic/ racial, religion, spiritual, age related, language) relevant to the older adult population.
  - b. Describe differences in healthcare beliefs that may exist between older adults and pharmacists.



- c. Evaluate potential barriers to and opportunities for cultural competency in older adult care pharmacy practice.
  - d. Apply cultural competency concepts and guidelines to healthcare decisions.
6. Caregiver support
  - a. Assess caregiver knowledge and expectations regarding advanced age and disease on health risks, needs, and treatment of health conditions.
  - b. Assist caregivers to identify, access, and use specialized products, professional services, and support groups that can assist with care-giving responsibilities and reduce caregiver burden.
  - c. Discuss resources for older adults and caregivers that help them meet personal goals, maximize function, maintain independence, and live in their preferred and/or least restrictive environment.
  - d. Evaluate the appropriateness of care plans and services based on older adults' and caregivers' changes in age, health status, and function; assist caregivers in altering plans and actions as needed.
7. Communication
  - a. Develop verbal and nonverbal communication strategies to overcome potential sensory, language, and cognitive limitations in older adults.
  - b. Interview and counsel older adults with varying degrees of cognitive and communication abilities.
  - c. Provide drug information (verbal and written) to older adults, their caregivers and the interprofessional care team.
  - d. Evaluate adherence and provide strategies for improvement to older adults, their caregivers and the interprofessional care team.
  - e. Collaborate with older adults, their caregivers, and the healthcare team during care planning and implementation.
8. Continuum of Care
  - a. Define the continuum of care available to geriatric patients, such as community resources, home care, assisted living facilities, nursing facilities, sub-acute care facilities, hospice care, and hospitals.
  - b. Participate in interprofessional decisions regarding levels of care for individual patients.
  - c. Recognize the need for continuity of treatment and communication across the spectrum of services and during transitions between care settings.
9. End of life care
  - a. Recognize philosophies and processes of hospice and palliative care.
  - b. Discuss end of life issues as they relate to medication appropriateness.
  - c. Recognize the altered benefit-risk ratio of medications at the end of life.
  - d. Facilitate shared decision making when evaluating changes in the drug regimen considering patients' values, goals and preferences.



**II. GENERAL PRINCIPLES OF CARING FOR OLDER ADULTS (90 items, 60%)**

**A. Pathophysiology (8 items)**

1. Recognize the clinical presentation of diseases common in older adults.
2. Describe the normal progression of common diseases in older adults.
3. Identify atypical presentations of disease that may occur in older adults.
4. Recognize medication-induced diseases and conditions.
5. Differentiate among normal progression, atypical presentation, and medication-induced disease.

**B. Geriatric Assessment (13 items)**

1. Identify the components of an interprofessional, comprehensive geriatric assessment and the roles individual disciplines play in conducting and interpreting a comprehensive geriatric assessment.
2. Assess the patient's complete medication list, including prescription and over-the-counter medications, and complementary and alternative therapies.
3. Assess the impact of social behaviors, including use of tobacco, caffeine, alcohol, and illicit drugs.
4. Evaluate findings of a comprehensive history and physical exam.
5. Identify potentially inappropriate medications (PIM) for older adults.
6. Identify medications that contribute to geriatric syndromes or conditions (e.g., falls, cognitive impairment).
7. Assess cognition using a valid and reliable tool/instrument.
8. Assess mood using a valid and reliable tool/instrument.
9. Assess behavioral symptoms using a valid and reliable tool/instrument.
10. Assess physical function using a valid and reliable tool/instrument.
11. Assess nutrition using a valid and reliable tool/instrument.
12. Assess pain using a valid and reliable tool/instrument.
13. Recommend laboratory tests for the older adult.
14. Interpret laboratory results for the older adult.
15. Evaluate the pharmacotherapy regimen considering pharmacokinetic and pharmacodynamic changes associated with aging.
16. Develop a list of medication-related problems.
17. Functional Status
  - a. Evaluate the impact of potential functional barriers (e.g., transportation, housing, economics, social support structure) on medication therapies.
  - b. Identify potential medication-related causes of declining physical and cognitive function
  - c. Evaluate impact of alterations in cognition, instrumental activities of daily living (IADLs), and activities of daily living (ADLs) on medication therapy.
  - d. Evaluate self-care capacity, including medication self-administration.



18. Prioritizing Care Needs
    - a. Identify clinical situations where life expectancy, functional status, patient preference or goals of care should override standard recommendations for screening/ treatment.
    - b. Prioritize care needs considering severity of illness, patient preference, quality of life, and time to benefit.
    - c. Recognize need for referral of patients to other healthcare professionals.
  19. Transitions of Care
    - a. Identify potential hazards of hospitalization for older adults, including immobility, delirium, medication side effects, malnutrition, pressure ulcers, procedures, and hospital acquired infections.
    - b. Facilitate medication reconciliation during transitions of care.
    - c. Resolve medication discrepancies during transitions of care.
- C. Wellness and Health Promotion (8 items)**
1. Promote evidence-based approaches for screening, immunizations, health promotion, and disease prevention for older adults.
  2. Advocate interventions and behaviors that promote physical and mental health, nutrition, function, safety, social interactions, independence, and quality of life to older adults and their caregivers.
  3. Assess specific risks to older adult safety, including falls, abuse, physical/chemical restraints, and other environmental hazards.
- D. Treatment (42 items)**
1. Define therapeutic goals incorporating patient-specific principles (e.g., age, functionality, patient preference, quality of life).
  2. Develop an individualized treatment plan, in collaboration with other caregivers, based on older adult's preferences and goals, and their physical, psychological, social, and spiritual needs.
  3. Evaluate clinical situations where standard treatment recommendations, based on best evidence, should be modified with regard to older adults' values, preferences, and treatment/care goals, life expectancy, co-morbid conditions, and/or functional status.
  4. Determine therapeutic options based on cost and the risk/benefit to the patient (e.g., no treatment, non-pharmacologic interventions, non-prescription medications, complementary and alternative medicine, prescription medications).
  5. Recommend age/patient specific regimen including medication, dose, dosage form, dosing interval, and route of administration.
  6. Resolve medication-related problems:
    - a. Untreated or under-treated conditions
    - b. Improper drug selection
    - c. Subtherapeutic or supratherapeutic dosage
    - d. Adherence to medication therapies
    - e. Adverse drug events



- f. Drug interactions
  - g. Drug use without indication
  - h. Treatment failures
7. Develop deprescribing strategies to reduce, replace, or withdraw inappropriate medications.

**E. Monitoring (14 items)**

1. Develop a patient-specific plan for monitoring safety, effectiveness, and quality of life.
2. Implement a patient-specific monitoring plan including assignment of responsibility.
3. Recommend revisions to therapeutic plans based upon changes in patient status.

**F. Education (3 items)**

1. Develop educational material appropriate for the specific patient/caregiver.
2. Educate patient/caregiver regarding expected benefits and potential problems (e.g., side effects of medication, drug interactions) with drug therapy.
3. Educate on therapy options (e.g., generics, alternative therapies, non-drug therapies, formulary options).
4. Evaluate patient/caregiver understanding of medication use and its role in the overall treatment plan.
5. Educate the patient/caregiver in identifying and using adherence strategies and devices.

**G. Documentation (2 items)**

1. Document care plan recommendations using standard techniques and formats (e.g., SOAP notes).
2. Document rationale, interventions, and outcomes from medication therapies.
3. Provide reports to prescribers or other health professionals with findings and recommendations from medication review.

**III. POPULATION SPECIFIC ACTIVITIES (22 items, 15%)**

**A. Biomedical Information (5 items)**

1. Assess biomedical information considering study design and methodology, statistical analysis, and significance of reported data and conclusions.
2. Evaluate the relevance and limitations of biomedical information for the care of older adults.
3. Apply the findings of research to the care of older adults.
4. Evaluate the relevancy of clinical practice guidelines and standards of care for older adults.

**B. Research (4 items)**

1. Collect data to investigate medication use in older adults.
2. Evaluate data to investigate medication use in older adults.
3. Apply outcomes of investigations to optimize care of older adults.
4. Disseminate results of research to target audience.



**C. Educational Programs (4 items)**

1. Identify educational needs for target audiences.
2. Develop educational programs for health care professionals, patients/caregivers, and the public.
3. Implement educational programs for target audiences.
4. Evaluate the outcomes of an educational intervention.

**D. Economics and Access (4 items)**

1. Assess formulary management protocols for the care of older adults.
2. Develop formulary management protocols for the care of older adults.
3. Conduct a cost-benefit analysis of medication therapy for older adults.
4. Evaluate pharmacoeconomic data for the care of older adults.

**E. Patient Safety (5 items)**

1. Develop systems for medication reconciliation during transitions of care.
2. Apply systems for medication reconciliation during transitions of care.
3. Develop systems to identify risk factors for Adverse Drug Event (ADE) or medication incidents/ errors.
4. Apply systems to identify risk factors for Adverse Drug Event (ADE) or medication incidents/ errors.
5. Develop systems for prevention of ADE or medication incidents/ errors.
6. Apply systems for prevention of ADE or medication incidents/ errors.
7. Develop protocols for managing high risk medication.
8. Apply protocols for managing high risk medication.
9. Recognize iatrogenic conditions (e.g., healthcare associated infections, falls, pressure ulcers, medication-induced conditions).
10. Develop strategies to prevent or resolve iatrogenic conditions.



## Commission for Certification in Geriatric Pharmacy Disease State List

### High Priority Conditions

1. Cardiovascular Disorders
  - Cardiac Arrhythmias
  - Coronary Artery Disease
  - Heart Failure
  - Hyperlipidemia
  - Hypertension/ Hypotension
  - Myocardial Infarction
  - Peripheral Vascular Disease
2. Endocrine/Exocrine Disorders
  - Diabetes Mellitus
  - Disorders of the Adrenal Gland
  - Hormone Replacement Therapy
  - Paget's Disease
  - SIADH
  - Thyroid Disorders
3. Hematologic Disorders
  - Anemias
  - Disorders of Hemostasis
  - Thrombocytopenia
  - Thromboembolic disorders
4. Neurological Disorders
  - Acute and Chronic Pain Syndromes
  - Cerebrovascular Disease (e.g. Stroke, Transient Ischemic Attacks)
  - Delirium
  - Dementias
  - Headache
  - Movement Disorders (e.g. Parkinson's Disease, Essential Tremor)
  - Multiple Sclerosis
  - Neuropathies
  - Seizure Disorders
5. Psychiatric Disorders
  - Anxiety Disorders
  - Behavioral Disturbances
  - Depression and Other Mood Disorders
  - Schizophrenia and Other Psychotic Disorders
  - Sleep Disturbances
  - Substance Abuse

### Medium Priority Conditions

6. Gastrointestinal Disorders
  - Cholelithiasis
  - Diarrhea and Constipation
  - Gastro-Esophageal Reflux Disease
  - Hepatitis, Cirrhosis
  - Inflammatory Bowel Disease
  - Irritable Bowel Syndrome
  - Nausea and vomiting
  - Pancreatitis
  - Peptic Ulcer Disease
7. Genitourinary/Renal Disorders
  - Acute and Chronic Kidney Disease
  - Benign Prostatic Hyperplasia
  - Sexual Dysfunction
  - Urinary Incontinence/Retention
8. Geriatric Syndromes
  - Dizziness
  - Dysphagia
  - Failure to Thrive
  - Falls
  - Frailty
  - Vision and Hearing Impairment
9. Infectious Diseases
  - Bone and Joint Infections
  - Drug Resistance
  - Gastrointestinal Infections
  - Genitourinary Tract Infection
  - Herpes Zoster
  - HIV/ AIDS
  - Immunizations
  - Influenza
  - Nosocomial Infections
  - Ophthalmic Infections
  - Pneumonia
  - Skin and Soft Tissue Infections
  - Tuberculosis



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#### 10. Musculoskeletal Disorders

- Acute and Chronic Pain
- Gout
- Osteoarthritis
- Osteoporosis
- Rheumatological Diseases

#### 11. Nutrition/Hydration Disorders

- Dehydration
- Fluid and Electrolyte Disorders
- Malnutrition
- Weight Loss

#### 12. Respiratory Disorders

- Allergic Rhinitis
- Asthma
- Chronic Obstructive
- Pulmonary Disease

### Low Priority Conditions

#### 13. Dermatologic Disorders

- Dermatitis and Pruritus
- Drug Induced Skin Disorders
- Fungal Infections
- Pressure Ulcers
- Xerosis

#### 14. Oncology

- Breast Cancer
- Leukemias
- Prostate Cancer
- Skin Cancer

#### 15. Ophthalmology

- Blepharitis
- Cataracts
- Dry Eyes
- Glaucoma
- Macular Degeneration

The table below shows the approximate percent of examination questions devoted to each therapeutic area:

Category	%
Low	5
Medium	35
High	60