

# **A National Study of the Certified Geriatric Pharmacist**

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Conducted for the  
Commission for Certification in Geriatric Pharmacy

prepared by:

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## SUMMARY

The job analysis was conducted in 2007 at the request of the Commission for Certification in Geriatric Pharmacy (CCGP). The purpose of the study was to describe the job activities of a Certified Geriatric Pharmacist in sufficient detail to provide a basis for the development of a professional, job-related certification examination.

The CCGP Job Analysis Committee (JAC) conducted the activities necessary to identify job responsibilities and develop the test specifications for the Certified Geriatric Pharmacist. The JAC represented varied national and international regions and practice settings. All JAC members were experts in the duties and activities associated with the profession.

The study involved developing a job task list and survey, distributing the survey, and analyzing the survey responses. Test specifications for the Certified Geriatric Pharmacist were developed based on survey responses. The JAC was responsible for the following tasks regarding job analysis survey development:

- a. developing a sampling plan for the survey,
- b. identifying tasks for the survey instrument,
- c. determining the survey rating scales,
- d. determining the relevant demographic variables of interest, and
- e. integrating tasks, rating scales and demographics into a survey instrument.

The draft job analysis survey was distributed to JAC members. Based on comments, Applied Measurement Professionals, Inc. project staff modified and finalized the survey for distribution to a sample of 1,401 Certified Geriatric Pharmacists and posted on various web-sites.

A total of 1,401 CGP's were sent an electronic invitation to complete the on-line survey. Two hundred and ten (15% return rate) participants responded with surveys suitable for analysis. One hundred sixty-two emails were returned as undeliverable. Three respondents completed the survey too late to be included in the analysis. Therefore, the corrected return rate was 17%, which is satisfactory and typical for a survey of this type. A link and an invitation to complete the survey were also posted on several organizations' web-sites. An additional 165 respondents from the list-servs completed the survey. Responses to the demographic questions indicated that there were sufficient numbers from relevant groups for subsequent analyses.

More than 98% of the respondents felt the job task list adequately addressed the responsibilities of the Certified Geriatric Pharmacist. The task ratings and raters were reliable (consistent). Relevant demographic subgroups were adequately represented. Therefore, the job analysis proceeded to the next phase.

Survey data were presented to the JAC. The JAC developed and used task exclusion decision rules to identify tasks appropriate for the examination.

### **Making Decision Rules Operational**

Having judged that the sample sufficiently represented the population, the JAC applied the following criteria to implement its decision rules.

#### **Rule 1**

##### **Keep only tasks performed by at least 80% of respondents.**

Tasks with “not performed” rating frequencies of 20% or greater were evaluated by JAC members on an individual basis and used their expert judgment to determine whether or not the task would be considered ineligible. Applying this rule eliminated fourteen tasks.

#### **Rule 2**

##### **Keep only tasks rated at least Somewhat Significant by respondents.**

Realizing that error occurs in every measurement, the JAC defined the lower boundary of Somewhat Significant as a mean rating of 2.45. Applying Rule 2 subgroup thresholds eliminated no additional tasks.

#### **Rule 3**

**Keep only tasks rated at least Somewhat Important by all four geriatric experience subgroups.** The JAC defined a mean importance rating of 2.45 across years of geriatric experience subgroups as the Rule 3A criterion. Applying the Rule 3 subgroup thresholds eliminated no additional tasks.

#### **Rule 4**

**Keep only tasks rated at least Somewhat Important by all four subgroups in hours per week in geriatric pharmacy practice.** The JAC defined a mean importance rating of 2.45 across all four subgroups as the Rule 4 criterion. Applying this subgroup threshold eliminated one additional task.

#### **Rule 5**

**Keep only tasks rated at least Somewhat Important by all four job title subgroups.** The JAC defined a mean importance rating of 2.45 across all four subgroups as the Rule 5 criterion. Applying this subgroup threshold eliminated no additional tasks.

#### **Rule 6**

**Keep only tasks rated at least Somewhat Important by four of the five subgroups in geographic region.**

The JAC defined a mean importance rating of 2.45 across four of five subgroups as the Rule 6 criterion. Applying this subgroup threshold eliminated no additional tasks.

Of the 120 original survey tasks, 15 (12.5%) were excluded based on the exclusion criteria. Respondent comments were reviewed, and no tasks were added or removed. No additional tasks fell out using the decision rules. The detailed content outline was constructed from the 106 remaining tasks. The JAC decided that a 140-item examination sufficiently samples the content domain to render a pass or fail decision based on examination scores. The resulting examination matrix and detailed content outline will be used by the CCGP Examination Development Committee to assemble future test forms.

A copy of the resulting specifications is provided below:

(see next page)



## Certified Geriatric Pharmacist Detailed Content Outline

Open cells show an examination could include items from indicated cognitive levels.  
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	Items				Total % of Questions
	Cognitive Level			Totals	
	Recall	Application	Analysis		
<b>I. PATIENT SPECIFIC ACTIVITIES</b>	<b>12</b>	<b>23</b>	<b>21</b>	<b>56</b>	<b>40%</b>
<b>A. Collect and Evaluate Patient-Specific Information</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>8</b>	<b>14%</b>
1. Interpret and apply knowledge of the following to the provision of pharmaceutical care for senior adults:					
a. patterns of medication use			X		
b. causes of morbidity and mortality			X		
2. Assess and apply understanding of the following issues to the provision of pharmaceutical care for senior adults:					
a. continuum of care			X		
b. wellness and health promotion			X		
c. end of life issues (advance directives, treatment issues, quality of life choices)					
d. ethical issues					
e. physiological changes that accompany aging (e.g., sensory, body composition, organ system function, pharmacokinetic and pharmacodynamic changes)			X		
f. results of standardized assessment tools (MMSE, GDS, etc.)			X		
3. Evaluate the social aspects of aging in the provision of pharmaceutical care for senior adults related to the following:					
a. economic issues					
b. availability of community based services (referrals and triage)			X		
c. role of caregiver			X		
d. cultural			X		
4. Communicate with senior patients, their caregivers and healthcare professionals:					
a. recognize communication barriers including age-related sensory and cognitive impairments, illiteracy, and language and cultural differences		X	X		
b. apply strategies to overcome communication barriers			X		
c. apply privacy and confidentiality principles			X		



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	Items				
	Cognitive Level			Totals	Total % of Questions
	Recall	Application	Analysis		
d. ensure patient understanding of prescribed therapy					
5. Interpret and monitor laboratory results and procedures for the senior patient			X		
6. Recognize and assess:					
a. altered disease state presentations in seniors			X		
b. altered psychological status in seniors			X		
7. Identify and assess compliance/adherence issues affecting potential treatment plans (e.g., memory loss, sensory changes, hearing, cognition, patient beliefs, economics, and learning disabilities)					
8. Obtain and evaluate:					
a. an accurate drug history including over the counter and alternative/complementary medications			X		
b. relevant physical assessment information			X		
c. past medical history					
9. Apply principles of pharmacokinetic and pharmacodynamic changes associated with aging to the design of the pharmacotherapy regimen					
<b>B. Identify, Resolve and Prevent Medication Therapy – Related Problems</b>	<b>2</b>	<b>3</b>	<b>7</b>	<b>12</b>	<b>21%</b>
1. Untreated or under-treated conditions			X		
2. Improper drug selection					
3. Subtherapeutic or Supratherapeutic dosage			X		
4. Monitor patient's compliance/adherence with medications and apply strategies to educate the patient and/or caregiver, and encourage compliance/adherence with therapy					
5. Adverse drug events					
6. Drug interactions					
7. Drug use without indication			X		
8. Treatment failures					
<b>C. Determine Patient's Pharmaceutical and Related Health Care Needs and Integrate into Care Plan</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>6</b>	<b>11%</b>
<b>D. Select Drug Therapy Goals which Focus on Function and Quality of Life</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>8</b>	<b>14%</b>



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	Cognitive Level			Totals	Total % of Questions
	Recall	Application	Analysis		
<b>E. Design and Implement a Therapeutic Regimen in Collaboration with the Patient and Other Health Care Professionals</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>10</b>	<b>18%</b>
1. Apply concept of risk: benefit for each drug			X		
2. Recommend non-prescription drugs					
3. Educate on therapy options (e.g., generics, alternative therapies, nondrug therapies, formulary options)			X		
4. Educate on medication-related problems (e.g., side effects of medication, drug interactions)			X		
5. Recognize need for referral to specialized healthcare provider for further evaluation/treatment					



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	Cognitive Level			Totals	Total % of Questions
	Recall	Application	Analysis		
<b>F. Patient Monitoring Plan</b>	<b>2</b>	<b>3</b>	<b>7</b>	<b>12</b>	<b>21%</b>
1. Design plan to monitor for safety, effectiveness and achievement of therapeutic goals					
2. Implement plan					
3. Evaluate its effects on quality of life issues			X		
4. Document steps and outcomes of pharmaceutical care plan			X		
<b>II. DISEASE SPECIFIC ACTIVITIES</b>	<b>14</b>	<b>36</b>	<b>13</b>	<b>63</b>	<b>45%</b>
<b>A. Cardiovascular Disorders – e.g., Hypertension, Heart Failure, Ischemic Heart Disease, Myocardial Infarction, Cardiac Arrhythmias, Hyperlipidemia, Peripheral Vascular Disease</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>8</b>	<b>13%</b>
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					
<b>B. Dermatologic Disorders – e.g., Drug Induced Skin Disorders, Xerosis, Fungal Rashes, Pressure Ulcers, Other Common Skin Disorders</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>3%</b>
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					



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	Items				
	Cognitive Level			Totals	Total % of Questions
	Recall	Application	Analysis		
<b>C. Endocrine and Exocrine Disorders – e.g., Thyroid Disorders, Diabetes Mellitus, SIADH, Disorders of the Adrenal Gland, Paget's Disease, Hormone Replacement Therapy</b>	1	4	2	7	11%
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					
<b>D. Gastrointestinal Disorders- e.g., Peptic Ulcer Disease, Gastro-Esophageal Reflux Disease, Diarrhea and Constipation, Irritable Bowel Syndrome, Inflammatory Bowel Disease, Hepatitis, Cirrhosis, Pancreatitis, Cholelithiasis</b>	1	2	1	4	6%
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					
<b>E. Hematologic Disorders - e.g., Anemias, Disorders of Hemostasis, Thrombocytopenia, Disorders of White Blood Cells</b>	1	2	0	3	5%
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors			X		



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	Items				
	Cognitive Level			Totals	Total % of Questions
	Recall	Application	Analysis		
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary			X		
<b>F. Infectious Diseases - e.g., Pneumonia, Tuberculosis, Herpes Zoster, AIDS, Skin and Soft Tissue Infections, Bone and Joint Infections, Gastrointestinal Infections, Genitourinary Tract Infections, Influenza, Ophthalmic Infections, Nosocomial Infections, Drug Resistance, Immunizations</b>	1	4	1	6	10%
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					
<b>G. Musculoskeletal Disorders - e.g., Osteoarthritis, Rheumatological Diseases, Osteoporosis, Gout, Acute and Chronic Pain, Foot Disorders</b>	1	4	1	6	10%
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					



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	Recall	Application	Analysis		
<b>H. Neurological Disorders - e.g., Cerebrovascular Disease (Stroke, Transient Ischemic Attacks), Movement Disorders (Parkinson's Disease, Essential Tremor), Dementias (Alzheimer's Disease, Lewy Body Disease, Ischemic Vascular Dementia), Delirium, Seizure Disorders, Neuropathies, Acute and Chronic Pain Syndromes, Progressive Supranuclear Palsy, Multiple Sclerosis, Restless Leg Syndrome, Headache</b>	1	4	2	7	11%
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					
<b>I. Nutrition and Hydration Disorders - e.g., Malnutrition, Weight Loss, Dehydration, Fluid and Electrolyte Disorders</b>	1	1	0	2	3%
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					
<b>J. Oncology – e.g., Breast Cancer, Skin Cancer, Prostate Cancer, Lung Cancer, Colorectal Cancer, Brain Tumors</b>	0	1	0	1	2%
1. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)	X		X		
<b>K. Ophthalmology – e.g., Glaucoma, Dry Eyes, Blepharitis, Macular Degeneration, Cataracts</b>	0	1	0	1	2%



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	Items				
	Cognitive Level			Totals	Total % of Questions
	Recall	Application	Analysis		
1. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)	X		X		
<b>L. Psychiatric Disorders - e.g., Depression, Bipolar, and Other Mood Disorders, Schizophrenia and Other Psychotic Disorders, Sleep Disturbances, Anxiety Disorders, Behavioral Disorders, Substance Abuse</b>	2	4	2	8	13%
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					
<b>M. Genitourinary Disorders - e.g., Urinary Incontinence/Retention, Benign Prostatic Hyperplasia, Sexual Dysfunction, Renal Dysfunction</b>	1	2	1	4	6%
1. Recognize common signs and symptoms		X	X		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					
<b>N. Respiratory Disorders - e.g., Chronic Obstructive Pulmonary Disease, Asthma, Sleep Apnea</b>	1	2	1	4	6%
1. Recognize common signs and symptoms		X	X		



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	Items				
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	Recall	Application	Analysis		
2. Apply disease-specific knowledge to management of patients (e.g., epidemiology, risk factors, pathogenesis and pathophysiology, diagnostic/prognostic issues, clinical course, available practice guidelines, pharmacoeconomics, quality of life, patient satisfaction)			X		
3. Design and recommend patient-specific pharmacotherapy considering comorbidity and other factors					
4. Evaluate drug response using effectiveness and safety endpoints, quality of life issues and recommend modifications in therapy as necessary					
<b>III. POPULATION SPECIFIC ACTIVITIES</b>	<b>4</b>	<b>7</b>	<b>10</b>	<b>21</b>	<b>15%</b>
<b>A. Research</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>8</b>	<b>38%</b>
1. Design and conduct medication use evaluations (MUE) and drug use review (DUR)					
2. Apply MUE/DUR results to improve the quality of care			X		
3. Evaluate and apply quality improvement data (e.g., patient safety, medication utilization/safety, root cause analysis)					
<b>B. Economics and Access</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>14%</b>
1. Interpret Pharmacoeconomic Data	X				
<b>C. Health Policy</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>14%</b>
1. Communicate with healthcare professionals to improve quality of care			X		
2. Ensure that privacy and confidentiality standards are maintained			X		
3. Optimize the Continuum of Care process (e.g., reconciliation, medication delivery systems)					
4. Interpret and apply geriatric practice guidelines			X		
5. Develop and implement clinical protocols, policy and procedures, etc.					
<b>D. Education</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>7</b>	<b>33%</b>
1. Identify educational needs for target audiences			X		
2. Design and/or implement educational activities for target audiences					
3. Evaluate outcome of educational activities					
<b>TOTAL TEST</b>	<b>30</b>	<b>66</b>	<b>44</b>	<b>140</b>	<b>100%</b>

