



A Passing Point Study for the Certification Examination for Geriatric Pharmacists

Conducted for the Commission for Certification in Geriatric Pharmacy

May 2014

Prepared by:

Steven S. Nettles, EdD
Program Director, Psychometrics

James Hellrung, MA
Research Associate, Psychometrics

Summary by:
Thomas R. Clark, RPh, MHS, CGP
CCGP Executive Director

Introduction

The purpose of this study was to determine a passing point (cut score) for the Commission for Certification in Geriatric Pharmacy (CCGP), Certification Examination for Geriatric Pharmacists (CPC). In determining the passing point, a minimum standard to pass the examination was developed, which examinees must achieve to obtain certification status. This requires that a decision must be made to classify examinees into one of two mutually exclusive categories (certified or not certified).

As with any professional practice standard setting process, some type of judgment is required. However, it is essential that the judgments involved in determining the passing point be made by qualified experts who are well informed regarding the intended use of the examination and possess the requisite knowledge and experience in the content domain to know what level of competence should be reasonably expected. Additionally, the judgments should be rendered in a meaningful way that takes into account the format and purpose of the test.

This determination must be made with recognition of the effects of potential error on classification decisions and the negative consequences of possible misclassification for examinees and the public. This report describes the methods and results of the passing point procedures—attributed to Angoff (1971) and Hofstee (1983)—and documents the appropriateness of the resulting pass/fail cutoff point for the examination.

The underlying philosophy of the Angoff procedure is that the standard set should be related to item difficulty, specifically the difficulty of the items relative to what is expected of the examinees. Therefore, this procedure requires judges to render an expected performance rating for each test item. There are several steps required to complete the modified Angoff procedure, which are described in detail in Livingston and Zieky (1982). In contrast, The Hofstee method requires four ratings from each judge: two absolute criterion ratings, and two normative referenced ratings (Norcini, 2003). The purpose of this certification examination is to determine who is minimally qualified and who is not, or alternatively, who meets certification requirements and who does not. The passing point is the determining value in the certified vs. not certified decision.

Methodology

Angoff

The Angoff technique was recommended by Applied Measurement Professionals, Inc. (AMP) and selected by CCGP as the procedure for estimating the pass/fail cutoff score. The underlying philosophy of the Angoff technique is that the standard set should be related to item difficulty, specifically the difficulty expected of borderline candidates. Therefore, this technique requires judges to render an expected performance rating for each test item. There are several steps required to complete the Angoff technique; the procedures used to complete these steps are as follows.

1. **Selection of the Judges.** The judges serving on the passing point study panel included members of the CCGP Examination Development Committee (EDC), as well as some additional judges all of whom are subject matter experts. They were selected to provide for an appropriate balance on potentially relevant characteristics, such as area of special expertise and geographical distribution. All EDC members are familiar with the examination content. See Appendix A for a listing of the judges.
2. **Defining the Competence Criterion.** The committee participated in discussion regarding the definition of a minimally competent practitioner (MCP), that is, an individual who would be able to demonstrate just enough knowledge to pass the CCGP Certified Content Expert in Patient-Centered Medical Home. In general, a minimally competent practitioner has enough knowledge to practice safely and competently. The minimally competent practitioner is sometimes defined as a “borderline expert,” which refers to the fact that he or she is able to practice safely and competently, but he or she may not demonstrate complete mastery in his or her practice.
3. **Rating Procedure Training.** During a meeting of the EDC on June 29, 2013, the purpose and procedures for the passing score study were discussed. The rating requested for the Angoff technique is the percentage of MCPs expected to respond correctly to that item. Ratings for each item could therefore range from 0 to 100, although the judges were advised that candidates rarely perform below chance level (33 percent correct in this case) or at a level of perfection (100 percent correct). Judges discussed the factors to be considered in determining the ratings, in particular, those factors that would be associated with relatively

high or low ratings. In addition, judges were explicitly advised that the rating was not intended as a judgment of whether an MCP *should* correctly respond to the item but the probability that the MCP *would* respond correctly.

4. ***Rendering the Ratings.*** Items were presented to the judges one at a time. The judges were instructed to privately answer the item and render a tentative rating. Judges announced their ratings. If judges' ratings varied by 20 percentage points or more, judges discussed the rationale for their ratings. Finally, the correct response was revealed, and judges privately recorded a final rating for the item. Judges were advised to consider the possibility that their ratings might be too high on items that they answered incorrectly when the initial ratings were provided.

Hofstee

The Hofstee method was used as a possible supplemental technique to help narrow the focus of the Angoff results. The Hofstee method used the same judges as the Angoff study, listed in Appendix A. The judges were asked the following four questions:

1. What is the lowest acceptable failing percentage for first-time examinees?
2. What is the highest acceptable failing percentage for first-time examinees?
3. What is the lowest score at which you would allow someone to pass?
4. What is the highest reasonable score to expect for someone to pass?

Each of the judges answered the four questions during the Angoff training. These responses were averaged, and reviewed by AMP after the exam was administered. Each averaged response was used to create a boundary within a chart that displayed the raw score with the cumulative percentage of candidates failing. These boundaries formed a box within the graph from which a cut score could be selected. A line is then created to intersect the graph line. This line is drawn from the intersection of questions 2 and 3 to the intersections of questions 1 and 4. This intersection, between the drawn line and the graph line, was then compared with the confidence intervals from the Angoff method to determine a cut.

Appendix A – Panel of Judges for Cut Score Study

Micah Sobota, PharmD, BCPS, CGP
Lima, OH
Exam Development Committee Co-Chair

Keith Swanson, PharmD, CGP
Oklahoma City, OK
Exam Development Committee Co-Chair

Colleen Ann Catalano, PharmD, CGP
Seattle, WA
Exam Development Committee Member

Lisa Hart, PharmD, BCPS, CGP
Frankfort, KY
Exam Development Committee Member

Kristin Higgins, PharmD, BCPS, CGP
Iron Mountain, MI
Exam Development Committee Member

Kristin Sumer Meyer, PharmD, CGP, CACP
Des Moines, IA
Exam Development Committee Member

William Simonson, PharmD, CGP
Suffolk, VA
Exam Development Committee Member

Tina Thornhill, PharmD, CGP
Winston-Salem, NC
Exam Development Committee Member

Sharon Vire, PharmD, CGP
North Little Rock, AR
Exam Development Committee Member

Appendix A – continued

Maged Youssef, PharmD, CGP
Mississauga, Ontario, Canada
Exam Development Committee Member

Chanel Agness, PharmD, BCPS, CGP
Baltimore, MD
Subject Matter Expert

Julie Caler, PharmD, CGP
Cumberland, MD
Subject Matter Expert

Terry O'Shea, PharmD, CGP
Englewood, OH
Subject Matter Expert

Thomas R. Clark, RPh, MHS, CGP
Alexandria, VA
CCGP Executive Director

Appendix B

Minimally Competent Practitioner Definition

A Certified Geriatric Pharmacist (CGP) possesses the expertise to provide specialized pharmaceutical care to older adults. The CGP is knowledgeable in the health care needs of older adults, which includes medication, disease, and wellness management. The CGP is able to effectively communicate this information to the individual, their caregivers, and members of the inter-professional health care team. The overall goal is to maintain or improve functional capacity and quality of life for older adults.

The minimally competent practitioner:

1. is able to effectively communicate with older adults, caregivers, and health care professionals
2. is able to facilitate shared decision making with older adults/caregivers
3. is able to assess and evaluate medications for appropriateness
4. applies basic knowledge of physiological and psychological changes of the aging process to the care of older adults
5. has basic knowledge of common geriatric diseases and syndromes
6. recognizes and resolves medication-related problems in older adults
7. is able to educate older adults, caregivers, and health care professionals
8. recognizes significant drug-drug, drug-food, and drug-disease interactions in older adults
9. understands basic statistical concepts to evaluate evidence-based

literature

10. is able to assess the appropriateness of current clinical practice guidelines and medical literature in the care of older adults
11. designs and monitors therapeutic plans for safety and effectiveness
12. has basic knowledge of pharmacoeconomics
13. is able to work with an inter-professional team