Setting Local Standards on the International Foundations of Medicine® (IFOM®) Clinical Science Examination Based on Purpose and Context

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Background

- NBME® International Foundations of Medicine® (IFOM®) program provides medical schools internationally with tools for measuring examinees' understanding of the medical sciences

- IFOM Clinical Science Examination (CSE) assesses the medical knowledge and understanding of clinical science considered essential for the provision of safe and effective patient care
Background

• Many IFOM CSE items were previously used on USMLE® Step 2 Clinical Knowledge (CK) and there is substantial overlap in content coverage
Uses of IFOM CSE

• IFOM CSE is used for a variety of purposes by various types of institutions

• Medical schools
  ▫ Use for both formative and summative assessment, curriculum evaluation and international benchmarking – low stakes
  ▫ Use as an exit examination for graduation – high stakes
Uses of IFOM CSE

• Post-graduate programs
  ▫ Use for selection of graduates for training – high stakes

• Ministries of health/education
  ▫ Use as part of assessment for regional certification – high stakes
Setting Standards

- Initially, an International Standard of Competence (602) was set that was comparable to the USMLE Step 2 CK standard
  - Standard was based on high-stakes administration of medical licensing examination in United States
  - Was not necessarily relevant for other uses of IFOM in other countries
  - Very few IFOM CSE examinees scored at or above this standard
Setting Standards

• Facilitating the selection of local standards would allow IFOM CSE users to identify a minimum level of performance that is consistent with their assessment context and needs
Panama

- Panama began using the Spanish language IFOM CSE as a certification examination for graduates of medical schools in Panama and also for graduates from other countries such as Cuba, Mexico, Venezuela, Columbia, El Salvador, and Costa Rica
Panama

- They decided to conduct a standard setting study with local medical school faculty and physicians with the goal of setting a standard that was appropriate for their use of IFOM CSE and their population of test takers.

- An NBME psychometrician conducted a standard setting study in Panama in 2014 with 11 content expert judges.
Panama - Process

• Orientation & general overview of standard setting
• Discussion of the exam purpose & target group
• Discussion of the borderline or minimally proficient candidate
• Modified Angoff procedure – estimate percentage of borderline candidates who would answer each item correctly
• Hofstee procedure – global estimates of candidate performance and acceptable fail rates
Panama - Results & Impact

- Selected a standard of 365
- Passing Rate = 55.5% in 2015
Australia

• Several Australian medical schools use IFOM CSE as a formative or summative assessment for students in their final year of medical school
• An NBME psychometrician conducted a standard setting study in Australia in 2015 with 14 clinicians from 12 medical schools who served as content expert judges
• The same process was followed as in Panama
Australia - Results & Impact

- Selected a standard of 451
- Passing Rate = 92.7% in 2015
Singapore

- Duke-NUS medical school uses IFOM CSE as an exit examination for graduation for students in their final year of medical school
- An NBME psychometrician conducted a standard setting study in Singapore in 2016 with 9 faculty members who served as content expert judges
- The same process was followed as in Panama and Australia
Singapore - Results & Impact

- Selected a standard of 510
- Passing Rate = 96.5% in 2016
Discussion

- Standard setting studies produced standards that were appropriate for the particular use of IFOM CSE in each location.
- The local standards (365, 451, 510) were lower than the International Standard of Competence that was based on the USMLE Step 2 CK standard.
Discussion

• Passing rates based on local standards were considerably higher than passing rates based on the International Standard of Competence
  ▫ Passing rates based on the International Standard of Competence ranged from 1%-74% for the three groups
  ▫ Local standards produced pass rates that were in line with expectations for particular use of IFOM
Discussion

• Facilitating the selection of appropriate local standards using content-based procedures has enabled IFOM CSE users to experience the benefits of a high quality, internationally focused exam with a performance standard that is appropriate for their purpose and context.