Designing secure, continuous assessment strategies for MOC programs

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Ben Chesluk, ABIM
Kate O’Connor, Caveon Test Security
Session overview

- What is an MOC program?
- Why are programs moving to this model?
- Programs in 3 different stages of roll out
Session objectives

- Describe the market demand for more timely continuous assessments from certification holders in the medical board MOC space
- Define secure assessment strategies that support continuous assessment
- Discuss the challenges of implementing continuous assessment in a certification program
MAINTENANCE OF CERTIFICATION
— FOUR PART MODEL

Part 1
Professional Standing
Ensures physician is licensed and in good standing.

Part 3
Cognitive Expertise
Provides assurance that the diplomate is remaining current.

Part 2
Lifelong Learning
Requires participation in high quality, unbiased learning and self-assessment activities

Part 4
Performance in Practice
Focuses on ongoing assessment and improvement in the quality of care
Where are MOC assessments moving?

- Taken every 10 years
- ~200 multiple-choice questions
- Four-hour examination
- Taken at a secure, proctored testing center
- Feedback not timely/informative
- Required time away from office/patients
- Cramming vs. learning

- Continuous, year round
- Getting a few questions at a time
- Taking less than an hour of time
- Taken at place of their choosing
- Immediate feedback
- Little time away from office and work
- Continuous learning model to stay current
CHALLENGES

New MOC Assessments

- Identification
- Assisted Testing
- Proxy test taking
- Group Collaboration
- Item Harvesting
- Item Generation
- Detection Strategies
- Additional Policies
Test Security Considerations

- **Prevent**
  - Item and test design strategies
  - Diplomate policies
  - Candidate verification tools

- **Deter**
  - Diplomate communication of policies
  - Knowledge detection mechanisms are being used

- **Detect**
  - Test administration monitoring
  - Web and Media Monitoring
  - Data forensic analysis
Benjamin Chesluk
Sr. Researcher for Ethnographic Research,
American Board of Internal Medicine
What are Knowledge check-in assessments?

- New alternative to traditional secure MOC exams
- More frequent, less burdensome assessments
- Can be taken remotely in home/office or in testing center
- More frequent testing opportunities (4-6+ times per year)
- Shorter assessments (2-3 hours duration)
- Access to an online clinical resource (UpToDate)
  - More to be added at a future date
- Immediate pass/fail feedback for some test takers
ABIM MOC Knowledge check-in Program overview

• When are Knowledge Check-Ins offered?*
  
  • Every other year starting from the year they launch in a specialty
  
  • Diplomates who have a due date in a year when the Knowledge Check-In is unavailable in their discipline must either:
    ◦ Pass the traditional MOC exam by their due year
    -OR-
    ◦ If available, begin taking the Knowledge Check-In in the year prior to their assessment due year. Many diplomates are choosing this option
  
• *Diplomates may still choose the traditional exam if they prefer
• Other MOC Requirements Still Apply

Complete at least one MOC Activity to be reported as participating in MOC

Earn 100 MOC Points, 20 in Medical Knowledge to stay certified
Successful paths for knowledge check-in

One failure on the 2-year Knowledge Check-In does not immediately result in a negative change to either participation or certification status:

However, with the exception of the launch of a Knowledge Check-In in a specialty, if diplomates wait until the year due and fail on that first attempt...

They must take the traditional MOC exam in the following year.
Exam design strategies

• More items

• Creation of multiple clones with Advanced Item Development techniques

• Using timing data to optimize item selection

• Earlier retirement of item content from item pools when used on a Knowledge Check In
## Test Security Strategies

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| • Multiple forms  
• Clones  
• Shorter life cycle for questions | • Pledge of Honesty  
• Webcam recording throughout  
• Involve Diplomates | • Data Forensics (with video review for detected anomalies)  
• Random video review (~10%)  
• External audit (Caveon) |
Test administration strategies

- Assessments will initially be offered in 2-3 testing windows with multiple forms per window

- Location Requirements
  - Secure, private space with a door, away from disruptions
  - No one can be walking behind test taker within the view of the webcam (e.g., in an office with windows to a hallway)
  - No third party is allowed in the room during testing session, including during the scheduled break
  - Others

- Random video review audit of 10% of sessions

- Statistical analyses to identify anomalous time, response, and score
  - Request video review of any identified anomalies

- External audit (Caveon)
Lessons Learned

• The option of a Knowledge Check-In alternative was very well-received by Internal Medicine and Nephrology diplomates

• Diplomates who took the Knowledge Check-In report overwhelmingly positive reactions to the testing experience

• Test takers are very positive about the provision of an “external resource” (e.g., UpToDate)

• Security considerations have not been a major issue
  • Some negative comments about the process of setting up the room prior to testing
Kirk Diepenbrock

Chief Information Officer,
American Board of Obstetrics and Gynecology
aBog Program overview

ABOG releases three sets of 15 articles annually – 5 are GYN, OB, and Office

Diplomate Selects 30 Articles

Assigned 4 Random MCQ’s per Article (120 total)

Required to achieve 80%

25 CME’s Awarded by ACOG
# Test Security Strategies

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| - Build unique item bank, by subject, annually  
- Randomized distribution of test questions  
- Information Security Infrastructure  
- Chain of custody password protected | - Attestation  
- Secure login  
- Personal questions  
  - Time based  
  - Activity based | - Caveon web scans  
- IT audits  
  - Logins  
  - Network  
  - Analytics |
Securing MOC Process

- Initial authentication
- Time/Progress based authentication
- Infrastructure upgrades
- Portal upgrades
Exam design strategies

- Increase item banks
- Timed items
- Programmatic item generation
Test administration strategies

- Testing in Windows or Continuous Testing
  - Continuous Testing – in person – via vendor

- Posttest analysis to look for test-taking anomalies
  - Analytics
    - System generated
    - Statistical
  - Caveon

- Web and media monitoring
  - Caveon
Communicating the value of testing

- Timely information/techniques
- Lifetime learner thing
- Pilot program
- Information sharing agreements
Lessons learned

• Score cards showing right/wrong answers

• Process consistency

• Ability to quickly change tests

• User experience
Linda Althouse

Vice President, Psychometrics and Assessment Services, American Board of Pediatrics
What is MOCA-Peds?

• Continuous assessment tool
• Series of questions at quarterly intervals
• Delivered over the web or mobile device
• Focuses on assessment and learning
2017 Pilot Model

- 20 multiple-choice questions per quarter
- 40 Learning Objectives
- 2 “partner” questions per Learning Objective
- 5 minutes per question; multiple choice
- Confidence and Relevance ratings
- Questions saved for future reference

- Flexibility to answer one-at-a-time or in batches
- Immediate feedback (correct response, rationale, references)
- Confidence and relevance ratings
- Peer comparison
- General Pediatrics only – (over 5000 participants)
- 15 subspecialties roll out 2019-2022
Use of books, online references, resources is allowed, but should not be needed.

Discussing, sharing of questions is NOT allowed.
MOC Cycle and Life Circumstances

• Scoring process will drop the lowest 4 quarters of performance in a 5-year MOC cycle
  • Reduces burden
  • Eliminates the appeal process
  • Accounts for –
    • Life events and extenuating circumstances
    • Technical issues (e.g., slow internet, dropped questions)
Five-year MOC Cycle (starting 2019)

Year 1
≤ 72 questions

Year 2
≤ 72 questions

Year 3
≤ 72 questions

Year 4
≤ 72 questions

Year 5
Take the proctored exam

What if I don’t pass at the end of Year 4, or choose not to participate?
Five-year MOC Cycle (starting 2019)

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What if I meeting the passing standards at the end of Year 4?

Because of the 4 lowest quarters rule, those performing well enough may be able to stop at end of Year 3*

*Diplomates may choose to continue participating for MOC Part 2 credit

Year 5

Free to take a break!
Test Security Strategies

**Prevent**
- Randomization
- Unique Item Bank
- One-year life cycle for questions
- Password Secure
- Timed Question
- Mobile App secure download

**Deter**
- Honor Code
- Future Educational Videos
- Future Built-in Questions
- Involve Diplomates

**Detect**
- Data Forensics
- Internal
- Web Patrolling
- Pilot Analysis
- Caveon
Key Pilot Design Feature

• Questions in pilot used in prior year’s
  • Comparison data
  • Did questions perform differently in MOCA-Peds?
  • Do performance differences mean security issues?

• Over 100 forms customized/assigned to 5000+ diplomats
  • Allowed us to control question delivery to assess patterns
A Balancing Act

How can we incorporate learning but still maintain high-stakes component and security?
Test Security Data Analysis

Item Difficulties by Quarter

Density

-4  -2   0   2   4
Rasch Item Difficulty

Quarter 1
Quarter 2
Quarter 3
Quarter 4
Item Difficulty Across Year

• Items only slightly easier as the quarters progressed.

• Quarters not a significant predictor of item difficulty (p=0.65).

• Slight increase may be due to:
  o Familiarity with the platform
  o Less technical issues
  o Partner questions in later quarters
  o Potential learning
Test Security Data Analysis

Comparison of Item Difficulties

MOCA-Peds v Prior Year’s Secure Exam (MOCG) Item Difficulties

MOCA-Peds
Average p-value = 0.78

Secure Exam
Average p-value = 0.75
Response Time Data

Average time per question:
1 minute, 54 seconds
~38 minutes total for 20 questions
and all other Peds friends First, have you all remembered to start your MOCA Peds questions? I think you have to the end of March. Also, this is the year we would have had to take our boards. Have you had to give your employers any documentation that you are involved in the Pilot? I would assume they would want something in writing. Also, is it your understanding that they pilot just continues into 2018 automatically and is this something we do every quarter indefinitely? It sort of sounding like it on the web page. Just curious. So far, questions not too difficult and pretty easy to use. I am not hating it although I have a feeling if I have to do it forever I will procrastinate longer and longer each quarter. Thoughts......Please tag anyone else that I forgot.
Web Patrolling

OK Peds friends don't forget to get your MOCA Peds done! Quarter 2 is coming to an end! Just a friendly reminder...

Just finished mine and took my survey.... half way done!
Web Patrolling

Hello Pediatric friends. For those of you that are doing the MOCA peds pilot I have a quick question. Are we done once the year ends or does this thing continue on into 2018? Just finished my questions and noticed that there was a new set of objectives listed. Anyone know the answer to this??

Please tag others in the comments. Don’t forget the deadline is the 21st (I think).
Web Patrolling

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User 1: Why the obsession with general pediatricians? Does any general pediatrician follow those?
User 2: I just got a new one last week because I haven’t written for gentamicin since 2002.
User 1: Exactly. This is what pharmacists on the team are for.
User 2: Thought multiple questions regarding appropriateness were far more inappropriate. When was the last time you used a specific in general ped’s?
User 1: I actually do get them. I am in the boonies and don’t trust anyone.

User 3: Just did them today. Most pretty easy, but a few obscure ones.
User 4: A little biostatistics. Didn’t like that.
User 3: I want so badly to discuss...
User 4: Thought overall really pertinent. I didn’t want to be the crazy person who wrote comments about all the questions I missed!
User 3: Yes, only made one comment.
User 4: Had literally just looked that up. But I still missed it. Because I don’t do biostatistics.
Next Steps

• No major showstoppers

• Increased learning and continuous assessment seen as greater value

• Need to continue to monitor

• Explore other ways to better ensure

• Education and awareness are key
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Questions?
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