Assessing Health Professional Competence: Dawn of a New Era

Jason R Frank MD MA(Ed) FRCPC FAOrthA(hon)
Director of Specialty Education
Royal College of Physicians & Surgeons of Canada
Welcome
About me:

• Emergency MD
• Working in HPE for since 1990s
• Royal College & University of Ottawa
• Special focus: CBME
• Founder of the International CBME Collaborators
• Worldwide collaborations
• Coach ice hockey
This Session:

HPE → CBME Movement → New Assessment → Examples
Social media friendly: #meded

@drjfrank
Current HPE

- Scientific (Flexner)
- Scholarly
- Systems
- Dedicated teachers
Current HPE?

- Time spent, not ability
- Trainees unprepared
- Unclear progression of expertise
- Weak assessment / failure to fail
- Assessment can feel bogus or useless
- Concerns about supervision & patient safety
- Missing content
- Disempowered learners
- Overwhelmed teachers
- Lack of best practice in education
Variations in MD Practice

Levitt K. Am Heart J 2014
Variable outcomes...

Article Title: How Do You Deliver a Good Obstetrician? Outcome-Based Evaluation of Medical Education

David A. Asch, MD, Sean Nicholson, PhD, Sindhu K Srinivas, MD, MSCE, Jepf Herrin, PhD, and Andrew J. Epstein, PhD, MPP
Current HPE?

_____ 

Time spent, not ability = Variable outcomes
What do we mean by the “CBME Era”?
Quiz: Origins of “CBME”?  

<table>
<thead>
<tr>
<th>Teacher Education?</th>
<th>Engineering?</th>
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<tbody>
<tr>
<td>Medicine?</td>
<td>Nursing?</td>
</tr>
<tr>
<td>Astronaut training?</td>
<td>Submarine training?</td>
</tr>
<tr>
<td>1910?</td>
<td>2000?</td>
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<tr>
<td>1930?</td>
<td>1999?</td>
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Competency-based Education:

“What are the abilities needed of graduates?”
CBME principles

01 Focus on outcomes: graduate abilities

02 Ensure progression of competence

03 Time is a resource, not framework

04 Promote learner centredness

05 Greater transparency & utility
...Ultimately, a move to CBME is about a better way to train health professionals...
CBME Philosophy...
**Figure 2.** Spectrum of skills acquisition (Dreyfus & Dreyfus 1980).

**Figure 3.** General curve of skills acquisition reproduced from ten Cate (2010).
<table>
<thead>
<tr>
<th>Fixed Mindset</th>
<th>Growth Mindset</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Belief</strong></td>
<td>Belief that my intelligence, personality and character are carved in stone; my potential is determined at birth.</td>
</tr>
<tr>
<td><strong>Growth Mindset</strong></td>
<td>Belief that my intelligence, personality and character can be developed. A person's true potential is unknown (and unknowable).</td>
</tr>
</tbody>
</table>

| **Desire** | Look smart in every situation and prove myself over and over again. Never fail!! |
| **Evaluation of Situations** | Stretch myself, take risks and learn. Bring on the challenges! |
| **Dealing with Setbacks** | Will I succeed or fail? Will I look smart or dumb? |
| **Challenges** | Will this allow me to grow? Will this help me overcome some of my challenges? |
| **“I’m a failure” (identity)** | “I failed” (action) |
| **“I’m an idiot”** | “I’ll try harder next time” |
| **Effort** | Avoid challenges, get defensive or give up easily. |
| **Embrace challenges, persist in the face of setbacks.** | Growth and learning require effort. |
| **Criticism** | Why bother? It’s not going to change anything. |
| **Learn from criticism. How can I improve?** | Ignore constructive criticism. |
| **Success of Others** | Feel threatened by the success of others. If you succeed, then I fail. |
| **Finds lessons & inspiration in other people’s success.** | Plateau early, achieve less than my full potential. |
| **Result** | Reach ever-higher levels of achievement. |
Is Your Program Competency-based?

How would you know??
Change is Underway...
Competence = Time?
Competency-based Education:

What are the abilities needed of graduates...?
...an outcomes-based approach to the design, implementation, assessment and evaluation of an education program using an organizing framework of competencies.

CBME Defined:
Van Melle’s Core Components of CBME

1. Outcomes competency framework
2. Sequenced progression of competence
3. Tailored learning experiences
4. Tailored bedside coaching & observation
5. Programmatic assessment

(publication pending)
The CBME
“Toolkit”
Competency / Competencies

An observable ability of a health professional
- Reflects a spectrum
- Integrates multiple components such as knowledge, skills, values, & attitudes
- Multiple competencies can be combined
- Measureable with respect to a defined outcome
Milestones:
• The abilities expected of a health professional at a stage of development
• (e.g. compound x preparation)

Entrustable Professional Activities (EPAs):
• The key tasks of a discipline that a practitioner needs to be able to perform
• (e.g. med rec)
Problems Milestones
Solve

• Progression of Competence
• Comprehensive Curriculum
• Faculty guidance
• Learner transparency
• Failure to fail
Key Concept in EPAs: *Entrustment*

- “What can I safely delegate with indirect supervision?”
Examples of EPAs

In the real world:
• Teenager on an errand

In medicine:
• Run a code
1. Outcomes Defined as Competencies

- Carefully chosen abilities for those who successfully complete the curriculum
- Observable
- Practical
- Relevant to practice expertise
2. Competencies
Organized as a Progression
3. Tailored sequence of learning experiences

• Utility rules
• Ask: “what competencies can be acquired with this experience”
• Not the same as service provision
4. Competency-focused teaching methods

• Active learning
• Application
• Immersion
• Coaching & high quality feedback
• Deliberate practice
A Coaching Model for CBME

Facilitating learning and development of a learner’s competence
5. Programmatic Assessment that Promotes Learning

- Emphasis on workplace observation
- Focused on tasks performed
- Multiple observers
- Multiple methods
- Entrustment
- Curation
- Collation
- Decision-framework & benchmarks

**Article Title:** What Shape is Your Resident in? Using a Radar Plot to Guide a Milestone Clinical Competency Discussion

*David T Harrington, MD, Thomas J. Miner, Thomas Ng, MD, Kevin P. Charpentier, MD, Pam Richardson, and William G. Cioffi, MD*
Multiple Assessments
Paradigm Shift of Thinking

**Assessment OF Learning**
- “Summative assessment”
- High stakes
- Happens at the end of the learning process
- Goal: judge/evaluate learning at that particular instant in time

**Assessment FOR Learning**
- “Formative assessment”
- Low stakes, safe environment
- Embedded in the learning process (frequent and ongoing)
- Goal: monitor learning/progress and provide immediate feedback that can be used to improve teaching/learning (feedback loop)
Work Based Assessment in CBME

Situating WBA in CBD assessment framework

- EPA's and Milestones
  - Provide clear learning direction and explicit teaching assessment goals

- Work Based Assessment
  - Multiple observations
  - Verbal coaching feedback
  - Quality documentation in WBA tools

- Decisions
  - Progression or remediation

- Practice Expectancies Defined

- Practice Environment

- Competence Committee

- EPFA Portfolio
Workplace-based Assessment Strategies

- EPA / Entrustment Direct Observations (O-Score by Gofton)
- Work Product Tools (e.g. review of a chart)
- Multi-source Feedback (360s)
- Encounter cards
- Field Notes
Competence Committees

- Responsible for regular review of learner progress
- Uses integrative data from multiples observations
- Identifies patterns and trends
- Recommends progression
Van Melle’s Components of a “CBME” Curriculum:

1. Outcomes defined as **competencies**
2. Competencies organized as a **progression**
3. Tailored sequence of learning **experiences**
4. Competency-focused **teaching** methods
5. **Programmatic assessment** for learning
Data...Analytics
Maastricht Electronic portfolio (ePass)

Comparison between the score of the student and the average score of his/her peers.
CBME: A Global Movement

- Netherlands
- USA
- Singapore
- Saudi Arabia
- Kuwait
- South Africa
- Australia
- Canada
- +more
Criticisms of CBME

<table>
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<tr>
<th>Critique:</th>
<th>Response:</th>
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<tbody>
<tr>
<td>Not needed</td>
<td>Compelling need for better (see above)</td>
</tr>
<tr>
<td>Psychometric concerns about reliability</td>
<td>Greater validity/authenticity; Programmatic reliability</td>
</tr>
<tr>
<td>Reductionism</td>
<td>Not just checklists</td>
</tr>
<tr>
<td>Training based on time</td>
<td>Can be hybrid</td>
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Transformational CBME:

Competence by Design Project
Key Elements

• New CanMEDS
• Stages of physician development
• EPAs & Milestones
• New Assessment
• New Accreditation
Defining the stages of training
Next Generation Meded:

**Forget:**
- PGYs
- Objectives
- Prescriptive standards
- Ad hoc ITERs
- the Big Exam
- “Read more”
- 5 years only

**Enter:**
- Stages
- Milestones & EPAs
- Local Flexibility
- Competence Ctes
- Progress testing
- Focused observation
- Ready to practice
Milestones within an EPA

Typically, each EPA integrates multiple milestones.
Milestones and EPAs within Four Stages of Residency
Progression of Competence
ePortfolio: Learner Dashboard
ePortfolio: Observer Dashboard
ePortfolio: PD Dashboard
ePortfolio: Competence Committee Agenda
ePortfolio: PG Dean Dashboard
Van Melle’s Core Components of CBME

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(publication pending)
Is Your Program Competency-based?

How would you know?
Should it be?
What are the pros & cons for your program?
Diagnosis: The “Tea Bag Model” of HPE

Is there a better way to ensure competence than just time spent?
CBME: WHY?
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