The Rising Tide of Competency-based Medical Education: A Global View

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

- Emergency MD
- Working in Meded 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 → Definitions & Elements → 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
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, Jeph Herrin, PhD, and Andrew J. Epstein, PhD, MPP

Abstract

The goal of medical education is the production of a workforce capable of improving the health and health care of patients and populations, but it is hard to use a goal that lofty, that broad, and that distant as a standard against which to judge the success of schools or training programs or particular elements within them. For that reason, the evaluation of medical education often focuses on elements of its structure that are more practical because they are easier to collect, and they are valuable when they reflect activities in important positions along the pathway to clinical outcomes. But they are all substitutes for measuring whether educational efforts produce doctors who take good care of patients.

The authors argue that the evaluation of medical education can become outcome—maternal complications of obstetrical delivery—and show how examining various observable elements of physicians’ training and experience helps reveal which of those elements lead to better outcomes. Does it matter where obstetricians trained? Does it matter how much experience they have? Does it matter how good they were to start? Each of these questions reflects a component of the production of a...
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>
</tr>
</thead>
<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>
</tr>
<tr>
<td>1930?</td>
<td>1999?</td>
</tr>
</tbody>
</table>
CBME = Competency Based Medical Education

1978!
Competency-based Education:

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

1. Focus on outcomes: graduate abilities
2. Ensure progression of competence
3. Time is a resource, not framework
4. Promote learner centredness
5. 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><strong>DESIRE</strong></th>
<th><strong>GROWTH MINDSET</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Look smart in every situation and prove myself over and over again. Never fail!!</td>
<td>Stretch myself, take risks and learn. Bring on the challenges!</td>
</tr>
<tr>
<td>Will I succeed or fail? Will I look smart or dumb?</td>
<td>Will this allow me to grow? Will this help me overcome some of my challenges?</td>
</tr>
<tr>
<td>“I’m a failure” (identity) “I’m an idiot”</td>
<td>“I failed” (action) “I’ll try harder next time”</td>
</tr>
<tr>
<td>Avoid challenges, get defensive or give up easily.</td>
<td>Embrace challenges, persist in the face of setbacks.</td>
</tr>
<tr>
<td>Why bother? It’s not going to change anything.</td>
<td>Growth and learning require effort.</td>
</tr>
<tr>
<td>Ignore constructive criticism.</td>
<td>Learn from criticism. How can I improve?</td>
</tr>
<tr>
<td>Feel threatened by the success of others. If you succeed, then I fail.</td>
<td>Finds lessons &amp; inspiration in other people’s success.</td>
</tr>
<tr>
<td>Plateau early, achieve less than my full potential.</td>
<td>Reach ever-higher levels of achievement.</td>
</tr>
</tbody>
</table>
Is Your Program Competency-based?

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

What are the abilities needed of graduates...?
CBME Defined:

...an outcomes-based approach to the design, implementation, assessment and evaluation of an education program using an organizing framework of competencies
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

© 2009 Royal College and The International CBME Collaborators
Milestones in Medical Education: Progression
Milestones:
• The abilities expected of a health professional at a stage of development

Entrustable Professional Activities (EPAs):
• The key tasks of a discipline that a practitioner needs to be able to perform
• (e.g. run a clinic)
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
Multiple Assessments

Caverzagie and Iobst
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
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
Figure 2. Spectrum of skills acquisition (Dreyfus & Dreyfus, 1980).
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
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
4. It’s your turn...
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)
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 Med Ed

Is there a better way to ensure competence than just time spent?
Insanity: doing the same thing over and over again and expecting different results.

-Albert Einstein
CBME: WHY?
...Ultimately, a move to CBME is about a better way to train health professionals...
The Rising Tide of Competency-based Medical Education: A Global View

Jason R Frank  MD MA(Ed) FRCP C FAOrthA(hon)
Director of Specialty Education
Royal College of Physicians & Surgeons of Canada