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

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Welcome

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
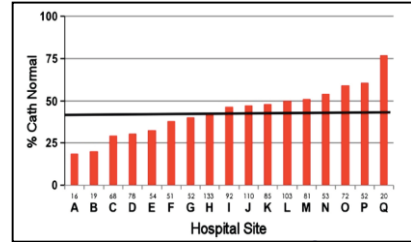
Current HPE?

- 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, Jagh Herrin, PhD, and Andrew J. Epstein, PhD, MPP

Abstract

Variable outcomes…

Current HPE?

**Time spent, not ability =
Variable outcomes**

What do we mean by the
"CBME Era"?

ICBME
COLLABORATORS
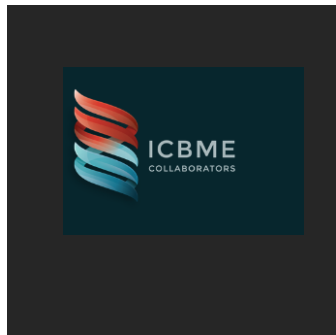
Quiz: Origins of "CBME"?

Teacher Education?	Engineering?
Medicine?	Nursing?
Astronaut training?	Submarine training?
1910?	2000?
1930?	1999?

COMPETENCY-BASED
CURRICULUM DEVELOPMENT
IN MEDICAL EDUCATION

An Introduction
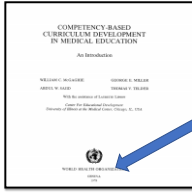
1978!

CBME = Competency Based
Medical Education

Competency-based Education:

"What are the abilities needed of graduates?"

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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…

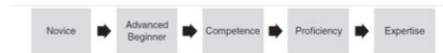| Novice | Advanced Beginner | Competence | Proficiency | Expertise |

Figure 2. Spectrum of skills acquisition (Dreyfus & Dreyfus 1980).

Expert
Proficient
Competent
Advanced
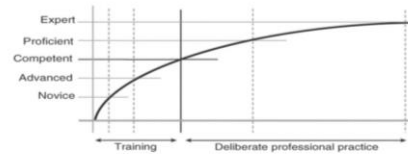Novice

Training | Deliberate professional practice

Figure 3. General curve of skills acquisition reproduced from ten Cate (2010).

	FIXED MINDSET Belief that my intelligence, personality and character are carved in stone; my potential is determined at birth	GROWTH MINDSET Belief that my intelligence, personality and character can be developed! A person's true potential is unknown (and unknowable).
DESIRE	Look smart in every situation and prove myself over and over again. Never fail!!	Stretch myself, take risks and learn. Bring on the challenges!
EVALUATION OF SITUATIONS	Will I succeed or fail? Will I look smart or dumb?	Will this allow me to grow? Will this help me overcome some of my challenges?
DEALING WITH SETBACKS	"I'm a failure" (identity) "I'm an idiot"	"I failed" (action) "I'll try harder next time"
CHALLENGES	Avoid challenges, get defensive or give up easily.	Embrace challenges, persist in the face of setbacks.
EFFORT	Why bother? It's not going to change anything.	Growth and learning require effort.
CRITICISM	Ignore constructive criticism.	Learn from criticism. How can I improve?
SUCCESS OF OTHERS	Feel threatened by the success of others. If you succeed, then I fail.	Finds lessons & inspiration in other people's success.
RESULT...	Plateau early, achieve less than my full potential.	Reach ever-higher levels of achievement.

Is Your Program Competency-based?

How would you know??

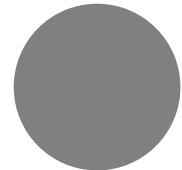## Change is Underway...

Competence = Time?
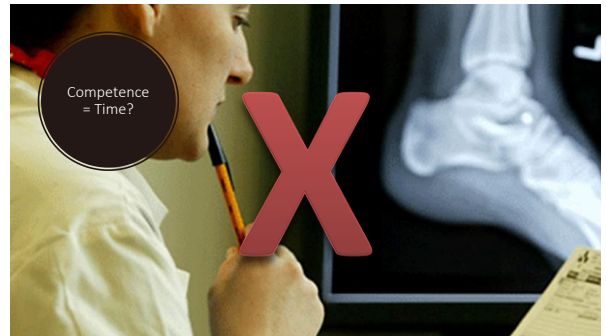
Competency-based Education:

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

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Milestones in Medical Education: Progression

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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)

Defining Milestones & EPAs

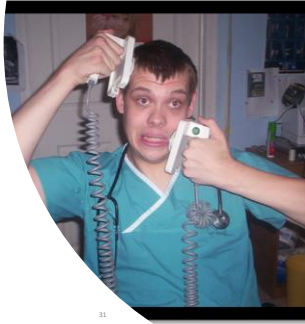## Problems Milestones Solve

- Progression of Competence
- Comprehensive Curriculum
- Faculty guidance
- Learner transparency
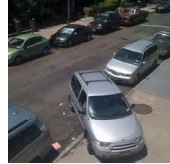- Failure to fail

Key Concept in EPAs: *Entrustment*

- "What can I safely delegate with indirect supervision?"

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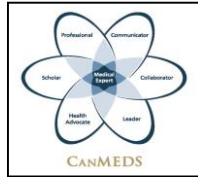## Examples of EPAs

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
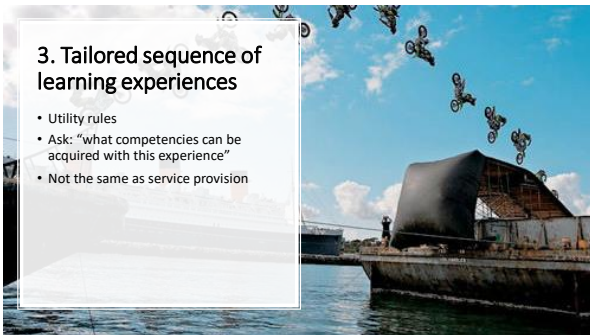
CanMEDS

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
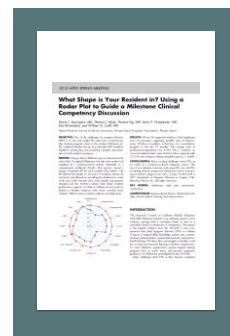- Coaching & high quality feedback
- Deliberate practice

ACTIVE LEARNING

A Coaching Model for CBME

Facilitating learning and development of a learner's competence

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5. Programmatic Assessment that Promotes Learning

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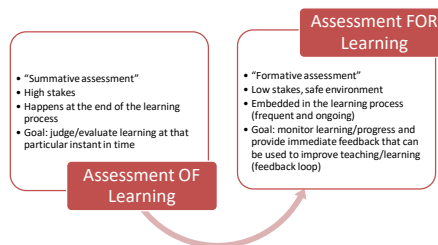- Decision-framework & benchmarks

Multiple Assessments

Caverzagie and Iobst

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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)

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Work Based Assessment in CBME

Situating WBA in CBD assessment framework

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Competence Committees

- Responsible for regular review of learner progress
- Uses integrative data from multiples observations
- Identifies patterns and trends
- Recommends progression
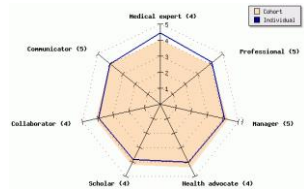
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A Spectrum of CBME Innovations

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

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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

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Transformational CBME:

Competence by Design Project

CanMEDS

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Key Elements

- New CanMEDS
- Stages of physician development
- EPAs & Milestones
- New Assessment
- New Accreditation

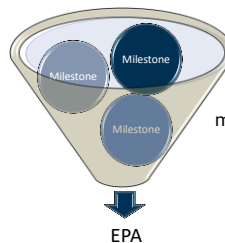## Defining the stages of training

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.

EPA

Milestones and EPAs within Four Stages of Residency

Progression of Competence

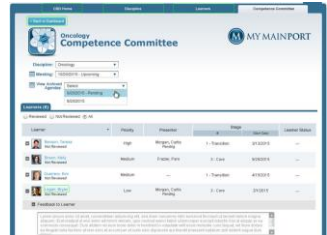ePortfolio:
Learner
Dashboard

ePortfolio:
Observer
Dashboard

ePortfolio: PD
Dashboard

ePortfolio:
Competence
Committee
Agenda

ePortfolio: PG
Dean
Dashboard

Van Melle's Core Components of CBME

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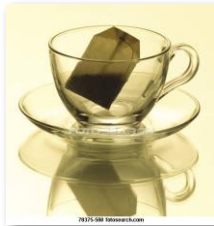5. Programmatic assessment

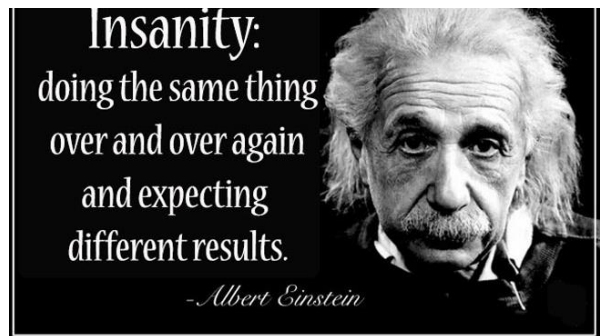(publication pending)

Is <u>Your</u> 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**…

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