Competency Based Medical Education

Coming Soon to A University Near You!

Dr. Janice Chisholm
October 21, 2015
Disclosure

I have no actual or potential conflict of interest in relation to this presentation.
Objectives

• Discuss the rationale to changes in medical education
• Describe competency based medical education
• Recognize the importance of programmatic assessment in medical education
“None of you guys are students, right? ‘Cause I’m not gonna sit here and play Guinea pig for some schmuck in training.”
What is different now?

- Technology
- Rate of new medical knowledge
- Millenial learners
- Duty hour restrictions
- Accountability
- Emphasis on patient safety
- Ethics of practicing on patients
TRADITION

Just because it's always been done doesn't mean it was ever a good idea.
How do we adjust?

• Work with the strengths of the millenial learner
• Deliberate and planned curriculum
• Maximize active learning
• More assessment!
“Competency requires experience, experience requires time, but time alone does not produce competence”

Holcombe E and Batalden P. *Academic Medicine.* Sept 2015

- Competency – the thing(s) they need to do
- Competent – can do all of the things
- Competence – does all of the things consistently, adapting to contextual and situational needs

Caverzagie, K. *Making Milestones Matter,* 2011 APDM
A COLLECTIVE VISION FOR POSTGRADUATE MEDICAL EDUCATION IN CANADA
FMEC PGME 2012 Recommendations

• #4 Introduce competency based curricula into post graduate programs
• #6 Implement effective assessment systems
• #7 Develop, support and recognize clinical teachers
“competency-based education is an approach to preparing physicians for practice that is fundamentally oriented to graduate outcome abilities and organized around competencies derived from an analysis of societal and patient needs. It deemphasizes time-based training and promises greater accountability; flexibility, and learner-centeredness”

The International CBME Collaborators, 2009
More simply....

Educational programs designed to ensure that learners **attain pre-specified levels of competence** in a given field. Emphasis is on achievement of specified performance objectives.

- **Traditional medical education** is based on **time & rotations**

- **Competency based education** focuses on **outcomes**
FOR A FAIR SELECTION EVERYBODY HAS TO TAKE THE SAME EXAM: PLEASE CLIMB THAT TREE
CBD¹² Competence Continuum

Transition out of professional practice

Continuing professional development (maintenance of competence and advanced expertise)

CERTIFICATION

Transition to practice

ROYAL COLLEGE EXAMINATION

Core of discipline

Foundations of discipline

Transition to discipline (orientation and assessment)

Entry to residency

MD

¹ Competence by Design (CBD)
² Milestones at each stage describe terminal competencies
100% CBME???

- Pure CBME
  - Time independent
  - Rotations are irrelevant
- Hybrid CBME
  - Predetermined time
  - Rotations are a resource

“Mutt” or pure breed?

Is one ‘better’ than the other?
Entrustable Professional Activities

“A core unit of professional work that can be identified as a task to be entrusted to a trainee once sufficient competence has been reached”
EPAs – Stage specific

• Transition to Discipline
  • Establishing peripheral vascular access for uncomplicated adult patients

• Foundations
  • Providing anesthesia for ASA 1 or 2 adult patients undergoing scheduled, uncomplicated, non-subspecialty surgery

• Core
  • Managing patients presenting with a complex, anticipated difficult airway, including appropriate extubation plans

• Transition to Practice
  • Managing all aspects of care for patients and organizational aspects related to the management of the operating room case load for an elective day list
Milestones

• Abilities expected of a resident at a defined stage of training
<table>
<thead>
<tr>
<th>Key and enabling competencies</th>
<th>Requirements for residency</th>
<th>Transition to discipline</th>
<th>Foundations of discipline</th>
<th>Core of discipline</th>
<th>Transition to practice</th>
<th>Advanced expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3 Prioritize procedures, taking into account clinical urgency, potential for deterioration, and changing clinical circumstances</td>
<td>Perform simple procedures under direct supervision</td>
<td>Demonstrate effective procedure preparation, including the use of a pre-procedure timeout or safety checklist as appropriate</td>
<td>Appropriately set up and position patients for procedures</td>
<td>Triage procedures, taking into account clinical urgency, potential for deterioration, and changing clinical circumstances</td>
<td>Prioritize procedures, taking into account clinical urgency, potential for deterioration, and changing clinical circumstances</td>
<td>Triage and schedule procedures in complex situations, demonstrating a flexible and adaptable approach</td>
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**Perform procedures in a skilful and safe manner, adapting to unanticipated findings or changing clinical circumstances**

**Demonstrate effective procedure preparation, including the use of a pre-procedure timeout or safety checklist as appropriate**

**Perform common procedures in a skilful, fluid, and safe manner with minimal assistance**

**Seek more supervision as needed when unanticipated findings or changing clinical circumstances are encountered**

**Competently and efficiently execute discipline-specific procedures**

**Establish and implement a plan for post-procedure care**

**Recognize uncertainty and the need for assistance in situations that are complex or new to the physician**

**Independently perform procedures in a skilful and safe manner, adapting to unanticipated findings or changing clinical circumstances**

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4 Establish plans for ongoing care and, when appropriate, timely consultation

| 4.1 Establish the roles of physicians, other health care professionals, and the patient in the provision of a patient-centred care plan that supports ongoing care, including follow-up on investigations, response to treatment | Describe the importance of consultation and follow-up in patient care | Coordinate investigation, treatment, and follow-up plans when multiple physicians and health care professionals are involved | Ensure follow-up on results of investigation and response to treatment | Establish plans for ongoing care for the patient, taking into consideration his or her clinical state, circumstances, preferences, and actions, as well as available resources, best practices, and research evidence | Develop a novel system of follow-up that is flexible and adaptable to the patient, families, and community resources |

**Establish the roles of physicians, other health care professionals, and the patient in the provision of a patient-centred care plan that supports ongoing care, including follow-up on investigations, response to treatment, and further consultation**

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**Dalhousie University**

**Department of Anesthesia, Pain Management and Perioperative Medicine**

**Nova Scotia Health Authority**
### Royal College Implementation Plan

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<tr>
<td>Cohort 1: Med. Onc. &amp; Otolaryngology</td>
<td>Implementation into Training</td>
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<td>Cohort 2: 6 disciplines (Urology etc..)</td>
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<td>Cohort 6: 10-12 adopting disciplines</td>
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#### 2017 Implementation
- Anesthesiology
- Forensic Pathology
- Gastroenterology
- Internal Medicine
- Surgical Foundations
- Urology
I passed!
Implications for Assessment in CBME

• Multifaceted assessment is essential
  • Use various assessment methods
• Assessment has to be:
  • more continuous and frequent
  • authentic, robust and work-based
  • And include narrative
• Direct observation is essential
• Regular feedback is essential
Assessment in CBME

- **Goal:** Collect enough information to promote a resident  
  NOT data to fail a resident
- **Supervisors**
  - Collect data
  - Coach learners
- **Competence committees**
  - Make decisions about competence
MILLER'S PRISM OF CLINICAL COMPETENCE (aka Miller's Pyramid)

it is only in the "does" triangle that the doctor truly performs

- Performance Integrated Into Practice
  eg through direct observation, workplace based assessment

- Demonstration of Learning
  eg via simulations, OSCEs

- Interpretation/Application
  eg through case presentations, essays, extended matching type MCQs

- Fact Gathering
  eg traditional true/false MCQs

Based on work by Miller GE, The Assessment of Clinical Skills/Competence/Performance; Acad. Med. 1990; 65(9); 63-67
Adapted by Drs. R. Mehay & R. Burns, UK (Jan 2009)
Assessments: Valid and Reliable?

• **Validity**
  - Need multiple types of assessments
  - Need standardized and non-standardized

• **Reliability**
  - Need multiple assessments in a variety of contexts and assessors (large sample size)
  - No one method is better than another
  - Subjective assessments can be both reliable/reproducible
<table>
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<tr>
<th>Testing Time in Hours</th>
<th>MCQ(^1)</th>
<th>Cae Based Short Essay(^2)</th>
<th>PMP(^1)</th>
<th>Oral Exam(^3)</th>
<th>Long Case(^4)</th>
<th>OSCE(^5)</th>
<th>Mini CEX(^6)</th>
<th>Practice Video Assessment(^7)</th>
<th>InCognito SPs(^8)</th>
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1 Norcini et al, 1985  
2 Stalenhoef-Halling et al, 1990  
3 Swanson, 1987  
4 Wass et al, 2001  
5 Van der Vleuten, 1988  
6 Norcini et al, 1999  
7 Ram et al, 1999  
8 Gorter, 2002

Slide adapted from Dr. Cees Van der Vleuten, Cudmore Lecture 2015
“Windows to Competence”
Caverzagie and lobst
Continuum of Stakes

- No stake
  - One data point: focused on information
  - Feedback oriented
  - Not decision oriented

- Intermediate stakes
  - More data points needed
  - Focus on diagnosis, remediation, prediction

- Very high stake
  - Final decisions on promotion or selection:
    - Many data points needed
    - Focused on a (non-surprising) heavy decision

Slide adapted from Dr. Cees Van der Vleuten, Cudmore Lecture 2015
Overall Assessment

• Portfolios
• Competence Committee

• Residents must **PROVE** competence, we can not assume competence
“It’s worse than we thought – there’s going to be random testing for competence”
Coaching vs. Feedback

• Assessment/evaluation/feedback: *tells you where you stand, how you measure up, what’s expected of you*
  • It’s often intimidating, emotional
  • Often evokes fear

• Coaching: *enables you to learn and improve and helps you play at a higher level*
  • It’s learner-centered, outcome-oriented, supports success
  • It guides progression from one competency level to the next

Heen, Stone 2014
**Figure 2.** Spectrum of skills acquisition (Dreyfus & Dreyfus 1980).

**Figure 3.** General curve of skills acquisition reproduced from ten Cate (2010).
Justified entrustment decisions
Change is coming...

- Identify key champions
- Develop a change management plan
- Faculty development
- More assessment
- Portfolio management
In Summary....

• Medical education is changing
• Focus on outcomes
  • Need to demonstrate competency as opposed to assuming competency
• Assessment, assessment assessment!
  • Coaching and feedback are essential!
Questions?