Rethinking our approach to Assessment

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Conflicts of interest: None
Ground rules...

- Opportunity to learn from each other
- Interrupt when you have questions
  - chances are someone else has the same
- A dumb question is one that was not asked
- everyone participates
  - I tend to pick on the back row by the way
Upon completion of this session the participant will be able to:

1. Explain the rationale for a programmatic approach to assessment in the CBME model

2. Discuss the importance of authentic, work-based (‘point of care’) assessment in CBME

3. Recognize that ‘assessment drives learning’ and how aligning objectives, educational programs and assessments functions to optimize learning

4. Outline the role of guided self-reflection in supporting residents to develop life-long learning skills
Which One is Not the Same?

Time-based

Achievement

Achievement
Our current medical education model: the tea steeping model

Is there a better way to ensure competence than just time spent?
The most dangerous phrase in the language is ‘we’ve always done it this way’

Admiral Grace Hopper
Change is Underway...

CBME
...is an outcomes-based approach to the design, implementation, assessment and evaluation of a medical education program using an organizing framework of competencies.
Réalité : 

Formation au XXIᵉ siècle
### Commonwealth Fund Study 2013

#### Country Rankings

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<th>COUNTRY RANKINGS</th>
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#### Overall Ranking (2013)

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#### Health Expenditures/Capita, 2011**

- AUS: $3,800
- CAN: $4,522
- FRA: $4,118
- GER: $4,495
- NETH: $5,099
- NZ: $3,182
- NOR: $5,669
- SWE: $3,925
- SWIZ: $5,643
- UK: $3,405
- US: $8,508

**Notes:** Includes ties. **Expenditures shown in $US PPP (purchasing power parity); Australian $ data are from 2010.**

*Source: Calculated by The Commonwealth Fund based on 2011 International Health Policy Survey of Sicker Adults; 2012 International Health Policy Survey of Primary Care Physicians; 2013 International Health Policy Survey; Commonwealth Fund National Scorecard 2011; World Health Organization; and Organization for Economic Cooperation and Development, OECD Health Data, 2013 (Paris: OECD, Nov. 2013).*
Value = \frac{\text{Quality}}{\text{Cost}}
The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada

Adverse event rate in Cdn Hospitals = 7.5%
~ 37% preventable

CMAJ 2004;170(11):1678-86

Based on our estimate, medical error is the 3rd most common cause of death in the US.

- Cancer: 585k
- Heart disease: 611k
- COPD: 149k
- Suicide: 41k
- Motor vehicles: 34k
- Firearms: 34k
- Medical error: 251k

All causes: 2,597k

However, we’re not even counting this - medical error is not recorded on US death certificates.

Data source: http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf
Medical errors may be 3rd leading cause of death in U.S.

Death certificates do not record deaths resulting from inadequate patient care

Medical errors include preventable complications, diagnostic errors and communication breakdowns. (Shutterstock)

Medical errors are underestimated and could be the third leading cause of death in the U.S., say doctors calling for more transparency internationally.

Death certificates in Canada, the U.S. and the U.K. rely on a mortality coding system — the International Classification of Disease code, or ICD — that doesn’t capture fatal consequences due to failures in health care. The ICD is used in medical record-keeping in 117 countries, including Canada.

Estimates of how often people die not from a disease but from the care they receive is based on limited and outdated methods, Prof. Martin Makary and research fellow Michael Daniel, of Baltimore-based Johns Hopkins University, say in Wednesday’s issue of The BMJ (formerly the British Medical Journal).

"People tend to think about an individual doctor’s mistake, but we’re really talking much more broadly about system failures, about wrong diagnoses, about medication errors and communication breakdowns,” Makary said in an interview.

'Never events' lists hospital mistakes that should never happen in Canada.

" 'Never events' lists hospital mistakes that should never happen in Canada.

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- ‘Never events’ lists hospital mistakes that should never happen in Canada
NEWFOUNDLAND: HEALTH CARE

Suspended radiologist erred 708 times, review finds
TARA BRAUTIGAM
THE CANADIAN PRESS
NOVEMBER 1, 2007

ST. JOHN'S -- The work of a suspended Newfoundland radiologist was so poor that he missed glaring problems such as tumours, broken bones and cases of pneumonia, the chief of the province's largest health board said yesterday after an in-depth review of nearly 3,800 patient records.

As a result, some patients of Fred Kasirye may have missed potentially life-saving treatment, said Louise Jones, interim chief executive officer of the Eastern Health Authority.

"There have been pneumonias that have been missed, there's been fractures that have been missed, there's been some tumours that have been missed," Ms. Jones said during a news conference. "We did not go back to quantify that. We had over 5,000 reports that were going out and we left that in the hands of the physicians and the patients themselves."

Dr. Kasirye was hired at the Burin Peninsula Health Board in November. But in May, he was suspended without pay after concerns over his procedures and decision-making.

'I was defensive and overly confident pathology confessees
Last Updated: Wednesday, January 30, 2008 | 6:14 PM ET

Charles Smith confessed on Wednesday in Toronto to confidently presenting his expertise in areas where his experience was in fact limited, which in a way is the mark of a pathologist against a mother.

The public inquiry examining the disgraced pathologist's work heard testimony about several of his cases, from visiting a mother suspected of killing her child after the traits of killer mothers to police and reporters.

Smith was asked questions about the case of Sharon, a seven-year-old who he concluded died of 80 scissor stab wounds.

Second-degree murder charges against the child's mother, Louise Reynolds of Kingston, Ont., were dropped after other experts later concluded the child was mangled by a dog.

Smith said he became involved in the case despite his lack of knowledge about lacerations at the insistence of Ontario's chief coroner's office.

"I certainly recognized that I had limited experience. I now..."
Ballistic model of Medical Education
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 and process, or on the assessment of competencies that could be considered intermediate outcomes. These measures 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 more closely tethered to the clinical outcomes medical education aims to achieve. They focus on a specific clinical 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 good obstetrician and, most important, defines a good obstetrician as one whose patients in the end do well.

Editor’s Note: A commentary on this article by T.J. Nasca, K.B. Weiss, J.P. Bagian, and T.P. Brigham

Does It Matter Where the Obstetrician Trained?
Maternal complication rates

- Substantial and stable differences in complication rates across programs
  - Consistent across vaginal, cesarean, and total deliveries ($\rho = 0.51; P < 0.001$)
- Consistent across individual complications
- Adjusted for comorbidities and hospital characteristics

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<thead>
<tr>
<th>Rate</th>
<th>Rate</th>
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<td>2</td>
<td>11.3%</td>
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<td>13.6%</td>
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Surgical Skill and Complication Rates after Bariatric Surgery

John D. Birkmeyer, M.D., Jonathan F. Finks, M.D., Amanda O’Reilly, R.N., M.S., Mary Oerline, M.S., Arthur M. Carlin, M.D., Andre R. Nunn, M.D., Justin Dimick, M.D., M.P.H., Mousumi Banerjee, Ph.D., and Nancy J.O. Birkmeyer, Ph.D., for the Michigan Bariatric Surgery Collaborative
Figure 2. Spectrum of skills acquisition (Dreyfus & Dreyfus 1980).

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

CBD\textsuperscript{1,2} Competence Continuum

- Transition out of professional practice
- Continuing professional development (maintenance of competence and advanced expertise)
- Transition to practice
- ROYAL COLLEGE EXAMINATION
- Core of discipline
- Foundations of discipline
- Transition to discipline (orientation and assessment)
- Entry to residency

\textsuperscript{1} Competence by Design (CBD)
\textsuperscript{2} Milestones at each stage describe terminal competencies
Focus on the bad apple...

3%
Importance of an Assessment Program
Assessment needs to be ‘multi-modal’

- There is no single ‘best’ Assessment tool
- Need to use multiple tools to get an overall impression of the learner
Blueprinting
Need an Organizing Framework

CanMEDS
A simple model of competence

What drives learning?

- Curriculum

  Teacher
The student’s perspective

Curriculum

Teacher

Assessment

Student
What needs to happen!!!

Curriculum

Teacher

Assessment

Student
How to choose an assessment tool / program

\[ U = C \times A \times R \times V \times E \]

- \( C = \text{cost} \)
- \( A = \text{acceptability} \)
- \( R = \text{reliability} \)
- \( V = \text{validity} \)
- \( E = \text{educational impact} \)
THE KOLB LEARNING CYCLE:

AN EVENT

- Concretise Experience
- Reflective Observation
- Abstract Conceptualisation
- Active Experimentation

Retry the experience

You think about it

Learn more about it
Value of Debriefing during Simulated Crises Management

Oral versus Video-assisted Oral Feedback


Background: The debriefing process during simulation-based education has been poorly studied despite its educational importance. Videotape feedback is an adjunct that may enhance the impact of the debriefing and in turn maximize learning. The purpose of this study was to investigate the value of the debriefing process during simulation and to compare the educational efficacy of two types of feedback, oral feedback and video-assisted oral feedback, against control (no debriefing).

Methods: Forty-two anesthelia residents were enrolled in the study. After completing a preset scenario, participants were randomly assigned to receive no debriefing, oral feedback, or video-assisted oral feedback. The debriefing focused on nonclinical skills performance guided by crisis resource management principles. Participants were then required to manage a postscenario. The videos of all performances were laser reviewed by two blinded independent assessors who rated participants' nonclinical skills using a validated scoring system.

Results: Participants' nonclinical skills did not improve in the control group, whereas the provision of oral feedback, either assisted or not assisted with videotape review, resulted in significant improvement (P < 0.005). There was no difference in improvement between oral and video-assisted oral feedback groups.

Conclusions: Exposure to a simulated crisis without constructive debriefing by instructors offers little benefit to trainees. The addition of video review did not offer any advantage over oral feedback alone. Valuable simulation training can therefore be achieved even when video technology is not available.

Materials and Methods

Participation and Orientation Phase

After Institutional Research Board (St. Michael’s Hospital, University of Toronto, Toronto, Ontario, Canada) approval, anesthesia residents in postgraduate years 1, 2, and 4 from the University of Toronto were invited to participate.
% of Score Change (+/- SE)

Control  Oral  Video-assisted Oral

Posttest minus pretest total ANTS scores

* P < 0.05  ** P < 0.01
The achilles heel of CBD???
The Wisdom of Crowds
How do you make judgments using all of these pieces of information?
Promoting REFLECTION
Accuracy of Physician Self-assessment Compared With Observed Measures of Competence
A Systematic Review

David A. Davis, MD
Paul E. Mazmanian, PhD
Michael Forsias, MD
R. Van Harrison, PhD
Kevin E. Thorpe, MMath
Laure Perrier, MEd, MLIS

Self-assessment and self-directed, lifelong learning have long been mainstays of the medical profession—they are activities presumed to be linked closely to the quality of care provided to patients. Physicians in the United States must demonstrate their engagement in lifelong learning by choosing and participating in continuing medical education (CME) activities and acquiring CME credit, which is mandated by the majority of state medical boards under the rubric of states' medical practice acts. The American Medical Association's Physicians Recognition Award certificate, which is based on CME participation, meets the CME requirements of the Joint Commission on Accreditation of Healthcare Organizations related to hospital accreditation. Self-assessment and lifelong learning were adopted by the American Board of Medical Specialties explicitly as 1 of 4 elements in its Maintenance of Certification program. Furthermore, diplomates of the American Board of Internal Medicine who choose to recertify...

For editorial comment see p 1137.
CME available online at www.jama.com

JAMA. 2006;296:1094-1102

www.jama.com

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Context Core physician activities of lifelong learning, continuing medical education credit, relicensure, specialty recertification, and clinical competence are linked to the abilities of physicians to assess their own learning needs and choose educational activities that meet these needs.

Objective To determine how accurately physicians self-assess compared with external observations of their competence.


Study Selection Studies were included if they compared physicians' self-rated assessments with external observations, used quantifiable and replicable measures, included a study population of at least 50% practicing physicians, residents, or similar health professionals, and were conducted in the United Kingdom, Canada, United States, Australia, or New Zealand. Studies were excluded if they were comparisons of self-reports, studies of medical students, assessed physician beliefs about patient status, described the development of self-assessment measures, or were self-assessment programs of specialty societies. Studies conducted in the context of an educational or quality improvement intervention were included only if comparative data were obtained before the intervention.

Data Extraction Study population, content area and self-assessment domain of the study, methods used to measure the self-assessment of study participants and those used to measure their competence or performance, existence and use of statistical tests, study outcomes, and explanatory comparative data were extracted.

Data Synthesis The search yielded 725 articles, of which 17 met all inclusion criteria. The studies included a wide range of domains, comparisons, measures, and methodological rigor. Of the 20 comparisons between self- and external assessment, 13 demonstrated little, no, or an inverse relationship and 7 demonstrated positive associations. A number of studies found the worst accuracy in self-assessment among physicians who were the least skilled and those who were the most confident. These results are consistent with those found in other professions.

Conclusions While suboptimal in quality, the preponderance of evidence suggests that physicians have a limited ability to accurately self-assess. The processes currently used to undertake professional development and evaluate competence may need to focus more on external assessment.

Author Affiliations: Knowledge Translation Program of the Li Ka Shing Knowledge Institute at St Michael's Hospital (Dr Davis and Mr Thorpe), Departments of Health Policy, Management, and Evaluation (Dr Davis), Family and Community Medicine (Dr Davis), and Public Health Sciences (Mr Thorpe), and the Office of Continuing Education and Professional Development (Ms Perrier), University of Toronto, Toronto, Ontario; Departments of Family Medicine and Epidemiology and Community Health, School of Medicine, Virginia Commonwealth University, Richmond (Dr Mazmanian); Center for Collaborative and Interactive Technologies, Baylor College of Medicine, Houston, Tex (Dr Forsias); and Department of Medical Education, University of Michigan, Ann Arbor (Dr Harrison).

Corresponding Author: Laure Perrier, MEd, MLIS, University of Toronto, 500 University Ave, 6th Floor, Toronto, Ontario, Canada M5G 1V7 (lperrier@utoronto.ca).
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*JAMA. 2006;296:1094-1102*
Can an external lens help to support CBME Assessment?
Can we embrace the Subjective? Use of Narrative?
The Holy Grail – moving CBME into CPD
Towards CBME…

The Future

NEXT EXIT

Questions / Comments?
Mississippi's literacy program shows improvement

The Associated Press
Man tries armed robbery with knife in gun store

A 57-year-old Greenfield man was shot in the chest Thursday during an armed robbery attempt at Stockham Guns, 2779 W. Ramsey Ave.

Police said the suspect walked into the store and asked to see several handguns just before 3 p.m. Thursday. After handing the pistols back to the store owner, he pulled a 4-inch knife with a serrated edge from the back of his pants and demanded the owner give him one of the guns and some ammunition.

The store owner shot the man once in the chest and called 911. The suspect was taken to Froedtert Memorial Lutheran Hospital, where he was listed in satisfactory condition Monday.

Greenfield Police Department Detective Sgt. Paul Schiecht said a warrant was issued for the suspect's arrest Monday. He will be taken to the Criminal Justice Facility after his discharge from the hospital.

The Observer is not naming the man because he had not been charged in Milwaukee County courts by press deadline.

The district attorney's office is reviewing the shooting, a standard procedure whenever shots are fired during a robbery.

— Eric Deckert, CNS
Study Shows Frequent Sex Enhances Pregnancy Chances

By The Associated Press

BOSTON — A study that researchers say gives the best evidence to date that people don’t want to use other forms of birth control. Researchers say there are six days in every menstrual cycle...