Charting Learner Progress: Current Trends in Assessment

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Disclosures

- Dr. Lomis serves as the Associate Project Director for the Association of American Medical Colleges “Core EPAs for Entering Residency” (CEPAER) Pilot Project. The content presented reflects her views and does not necessarily represent the views of AAMC or other participants in this initiative.

- Dr. Lomis receives support from the American Medical Association (AMA) as a principal investigator in the Accelerating Change in Medical Education Initiative. She also serves as a co-director of the competency-based assessment group for that collaborative. The content presented here reflects her views and does not necessarily represent the views of AMA or other participants in this initiative.
Objectives

After this session, participants should be able to:

- Discuss the influence of assessment practices on learner behaviors
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Assessment *Drives* Learning

- Learners will invest energy in ways that produce reward (as conveyed by our methods of evaluating their performance) Friedlander, Armstrong, Aschenbrenner, Viggiano et al. Neurobiology of Learning. Acad Med. 2011;86:415-420

- Intentional assessment must thus be “fit for purpose”

  A programmatic approach with a deliberate and arranged set of longitudinal assessments is necessary to promote *desired outcomes*.

Van der Vleuten & Schuwirth 2005
Programmatic assessment

Design our assessment systems to drive learning in a way that:

- Provides evidence for high-stakes decisions
- Provides evidence of program effectiveness
- Guides learning with measures that benchmark performance against explicit expectations
- Promotes the skills needed for accurate and reflective self-assessment
- Is consistent with our values, culture, and intended outcomes
Curricular Design

Outcomes

ALIGNMENT

Activities

Assessment

Anderson, *Theory into Practice*, 2002
## Comparing competency-based to traditional

<table>
<thead>
<tr>
<th></th>
<th>Traditional</th>
<th>Competency-based</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal</strong></td>
<td>Knowledge acquisition</td>
<td>Knowledge application</td>
</tr>
<tr>
<td><strong>Focus</strong></td>
<td>Teacher-focused</td>
<td>Learner-focused</td>
</tr>
<tr>
<td><strong>Approach to learning</strong></td>
<td>Hierarchical (Teacher → student)</td>
<td>Non-hierarchical (Teacher ↔ student)</td>
</tr>
<tr>
<td><strong>Responsibility</strong></td>
<td>Teacher</td>
<td>Student and Teacher</td>
</tr>
<tr>
<td><strong>Typical assessment tool</strong></td>
<td>Single subject measure</td>
<td>Multiple objective measures</td>
</tr>
<tr>
<td><strong>Assessment tool</strong></td>
<td>Proxy/Indirect</td>
<td>Authentic - Mimics real tasks of profession</td>
</tr>
<tr>
<td><strong>Setting for evaluation</strong></td>
<td>Removed</td>
<td>Direct observation</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>Norm-referenced</td>
<td>Criterion-referenced</td>
</tr>
<tr>
<td><strong>Timing of assessment</strong></td>
<td>Emphasis on summative</td>
<td>Emphasis on formative</td>
</tr>
<tr>
<td><strong>Program completion</strong></td>
<td>Fixed time</td>
<td>Variable time</td>
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Competency based ≠ Minimally-competent
Desired outcomes of UME

• How clearly have we articulated desired outcomes? What is the expected "product" from UME?

• How well do our current assessment processes ensure desired outcomes? How certain are we that each graduate is ready for residency?
Approaches to articulating desired outcomes

Competencies describe (trainable) attributes of an individual

Milestones describe the developmental trajectory of the individual

EPAs describe units of work

Entrustment for a task requires the synthetic application of multiple competencies at a specified level of performance (milestone)
Functions of the assessment system

Assessment of learning

Assessment for learning
Advantage of criterion-based approach

- describes current performance
  "you are here"

- articulates behaviors necessary to attain the next level of performance
  "go this way"
## Competency Milestones

**IC51: Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds**

<table>
<thead>
<tr>
<th>Not yet Assessable</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses standard medical interview template to prompt all questions; does not vary the approach based on a patient’s unique physical, cultural, socioeconomic, or situational needs; may feel intimidated or uncomfortable asking personal questions of patients</td>
<td>Uses the medical interview to establish rapport and focus on information exchange relevant to a patient’s or family’s primary concerns; identifies physical, cultural, psychological, and social barriers to communication, but often has difficulty managing them; begins to use non-judgmental questioning scripts in response to sensitive situations</td>
<td>Uses the interview to effectively establish rapport; is able to mitigate physical, cultural, psychological, and social barriers in most situations; verbal and non-verbal communication skills promote trust, respect, and understanding; develops scripts to approach most difficult communication scenarios</td>
<td>Uses communication to establish and maintain a therapeutic alliance; sees beyond stereotypes and works to tailor communication to the individual; a wealth of experience has led to development of scripts for the gamut of difficult communication scenarios; is able to adjust scripts ad hoc for specific encounters</td>
<td>Connects with patients and families in an authentic manner that fosters a trusting and loyal relationship; effectively educates patients, families, and the public as part of all communication; intuitively handles the gamut of difficult communication scenarios with grace and humility</td>
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**Comments:**

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**Virtual Medical Education Event**

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**AAMC**
EPA 11: Obtain informed consent for tests and/or procedures

All physicians must be able to perform patient care interventions that require informed consent. From day 1, residents may be in a position to obtain informed consent for interventions, tests, or procedures they order or perform (e.g., immunizations, central lines, contrast and radiation exposures, blood transfusions). Of note, residents on day 1 should not be expected to obtain informed consent for procedures or tests for which they do not know the indications, contraindications, alternatives, risks, and benefits.

Functions
- Describes the indications, risks, benefits, alternatives, and potential complications of the procedure.
- Communicates with the patient/family and ensures their understanding of the indications, risks, benefits, alternatives, and potential complications.
- Creates a context that encourages the patient/family to ask questions.
- Enlists interpretive services when necessary.
- Documents the discussion and the informed consent appropriately in the health record.
- Displays an appropriate balance of confidence with knowledge and skills that puts patients and families at ease.
- Understands personal limitations and seeks help when needed.

Pre-Entrustable Learners

Expected behaviors for a pre-entrustable learner

The pre-entrustable learner regards obtaining informed consent as a task to be performed based on the directive of others. This learner lacks understanding of at least some key elements of informed consent. The patient's prompt. The pre-entrustable learner does not consistently enlist interpretive services when needed, especially if the family does not make an explicit request. The learner at this level also often misses emotional cues from patients, such as anger, fear, or frustration, leaving them unaddressed. The inability of the learner to recognize emotional cues and
Challenges of CBE

Variation among raters:

- Limited control in complex system
- Multiple data points will filter "noise"
- Impetus to create facile tools
- Need a balance of structured feedback and global judgment
- Rationale for shift from normative to criterion-based reporting
- Faculty development essential
- The term "entrust" reminds us that this is crucial work
Challenges of CBE

Impact of context:

- Articulating typical developmental stages
- Escalating level of difficulty over training
- Potential for temporary regression in new settings
Role for aggregate growth curves

- Describe whether learning system is attaining desired outcomes (QI)
- In context of new assessment tools, aid in interpretation of individual performance (intersection of normative and criterion bases)
Challenges in CBE

Individualization
- Educational needs differ among learners
- We need to offer a variety of paths to the same core outcomes
- This requires more agility from the curriculum and from teachers
- Empowering student self-direction will enhance outcomes and efficiency
- Eventually, time of training could be variable
Challenges in CBE

Learner perceptions of process:

• High achievers may feel pressure to conceal weaknesses
• Concept of “psychological immune system”:
  paralyzing tension between knowing they need feedback to improve, and fearing information that disconfirms their practice


• Need to train learners in new approaches
• Create a culture of trust and collective improvement
Opportunities of CBE

* paint a picture of performance...

- Multiple assessments using a variety of methods
- Digital portfolio provides longitudinal view
- Blurring "formative" and "summative"


...& use assessment to direct growth
Example

a first year student identified (by peers & faculty) for lack of contribution to team efforts
Example, continued

aggregate class data confirms outlier performances
Example, continued

The student was rated at "Threshold" in Systems-based Practice at the end of year 1, and was required to set a learning goal in teamwork for clerkships.
Example, continued: *improvement over time*

**Course Details**

**CASE - Clinical Application of Scientific Evidence - 2013-2014**

**Surgery, first rotation:**
"needs to work on being a more visible member of the team."

**Microbes and Immunity - 2013-2014**
Sep 9 - Oct 16

**Learning Communities FMB - 2013-2014**
Jul 29 - Jul 25

**Hemostasis - 2013-2014**
Oct 29 - Jan 31

**Continuity Clinical Experience I - 2013-2014**
Sep 3 - Aug 25

**Foundations of the Profession - 2013-2014**
Jul 22 - Jul 26

**Endocrine, Digestion, and Reproduction - 2013-2014**
Feb 3 - Apr 25

**Dashboard**

○ Course Scores

○ Course Scores

○ Course Scores

**Final Grade & Options**

○ Final Evaluation

○ Final Evaluation

**OB/gyn, mid-year rotation:**

"Adapted quickly to the service and was noted to gently lead the student group and foster learning and good patient management"

"A good student. Motivated. Works well with others. Showed good initiative."
Summary of competency-based frameworks

Each learner assembles the COMPETENCIES needed

The learner must synthetically apply multiple competencies to successfully execute ENTRUSTABLE PROFESSIONAL ACTIVITIES

ASSESSMENT SUPPORTS DESIRED OUTCOMES:
Health systems use assessment evidence to assemble teams of professionals with complementary skills for the care of patients. Patient outcomes help those team members continue to improve over time.
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