CBME and Entrustable Professional Activities (EPAs)

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Objectives

• Understand the paradigm shift to CBME and the specific conundrums of assessment

• Develop a working knowledge of EPAs and their relationship to competencies and milestones

• Explore the use of EPAs in UME, General Pediatrics, Pediatric Subspecialties
All models are wrong but some are useful

George E.P. Box
Shifting Paradigms: From Flexner to Competencies

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Kevin Fenster, MD, and Christine Marlin, PhD

ABSTRACT

Reforming medical education is seen in the rank of a major paradigm shift from structures- and process-based to competency-based education and measurement of outcomes. The authors reviewed the existing medical literature to provide practical insight into how to accomplish full implementation and evaluation of this new paradigm. They searched Medline and the Educational Resource Information Clongs now. From the 1990s to the present, the titles and abstracts of the 609 articles the search produced, and chose 68 relevant articles for full review.

The authors found that in the 1970s and 1980s, much attention was given to the need for and the development of professional competencies for medical education. Little attention, however, was devoted to defining the benchmarks of specific competencies, how to attain them, or the evaluation of competency. Lack of evaluation criteria was likely one of the forces responsible for the three-decade lag between recognition of the movement and widespread adoption. Lessons learned from past experiences include the importance of integrity, planning, and facility and learning for defining competencies. In addition, the benchmarks for defining competency and the thresholds for attaining competency should be clearly delineated. The development of appropriate assessment tools to measure competency remains the challenge of this decade, and policies must be developed to determine whether its ultimate effect is the production of more competent physicians.

The challenge to medical education at the turn of the 20th century took the form of the Flexner revolution. Exposure of poor educational content and processes in the early 1900s captured public attention and concern, precipitating a chain of events that led to drastic reforms. In the early 21st century, accountability and responsibility to the public for the competency of practicing physicians have become a driving force behind an initiative of the American Board of Medical Specialties (ABMS) and the Academic Council for Graduate Medical Education (ACGME) to establish competency-based training for all physicians. The current structure- and process-based system delineates the teaching experience by exposure to specific subjects for specified periods of time (e.g., one month of adolescent medicine), while a competency-based system delineates the desired outcome of training, the core defining the educational process (e.g., competency in the care of adolescent patients). The paradigm shift from the current structure- and process-based curriculum to a competency-based curriculum and evaluation of outcomes is the Flexner revolution of the 21st century.

We reviewed the literature on competency-based education in medicine in (1) understanding the evolution of this educational paradigm, (2) assessing the evidence to date of the efficacy of competency-based education, and (3) providing practical insights into how to accomplish full implementation and evaluation of the paradigm shift.

Medical Education
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<th>Competency-based</th>
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<td><strong>Typical Assessment Tool</strong></td>
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<td>Single or few, often Multiple Choice Questionnaires (MCQs)</td>
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Step 1: Define the Outcomes (Competencies) required to meet the public’s needs= 6 Core Competencies outlined by the ACGME

Step 2: Define the Performance Levels (Milestones: Competencies Sequenced Progressively)

Step 3: Define the Curriculum (Tailored Learning Experiences/Competency-focused Instruction)

Step 4: Define the Assessment Framework (Programmatic Assessment)

Step 5: Evaluate the new Educational Program

Assessment: The Achilles Heel of CBME
Resolution

Provide an integrative construct that places the competencies and milestones in the context of clinical care
Putting it Back Together....

Entrustability of professional activities and competency-based training

Olle ten Cate

The idea of competency-based training (CBT) seems to have entered medical education with a respect, to define competencies.
EPAs

• Provide a practical framework for assessment of competence
  – Competencies: Focus on a single ability but care delivery requires integration of abilities
  – EPAs: Focus on integration of competencies needed to deliver care

• Bring the concept of entrustment to workplace-based assessment
  – Entrustment implies competence but uses a lens of supervision which is a more intuitive framework for clinicians
• Entrustment refers to the ability to safely and effectively perform a professional activity without supervision

• Brings trust and supervision into assessment which are intuitive for faculty working with trainees

• Entrustment decisions allow inference about a learner’s competence

• Entrustment itself is a “yes-no” decision, but the pathway to entrustment is developmental (think milestones)
Professional is a modifier of activities that refers specifically to:

- Area of practice (e.g., specialty)
- Scope of practice (e.g., profession)
- Learner’s place on the educational continuum
The Activities:

• Represent the essential work that defines a discipline (in aggregate)
• Lead to a recognized outcome
• Should be independently executable within a given time frame
• Are observable and measurable units of work in both process and outcome
• Require integration of critical competencies and milestones
Narrative description of an early (novice) learner

Narrative description of a learner at “x” level
Using EPAs to define the foundation of the UME to GME transition
The UME EPAs: EPAC

- Feasibility study for competency-based, time variable advancement
- Sponsored by the AAMC
- Received a three year $900,000 Macy Foundation grant
- Four schools in pilot
- Transition from UME to GME using the Core EPAs for Entering Residency
- Transition from GME to fellowship or practice using the General Pediatric EPAs
EPAC Participants

• Four cohorts in pilot, seven cohorts to date
• Began in year 1-3 of medical school (year 1 in one school, year 2 in 2 schools, year 3 in one school)
• 2-4 (mostly 4) students/year/school
EPAC Outcomes

- Few changed pathways
- First two cohorts now through residency
- \( \frac{3}{4} \) pilot schools able to transfer students from UME to GME in time variable fashion
- Almost all students who could transition in time variable fashion transitioned early
EPAC Outcomes

• Consequence Validity

• Process validity

The UME EPAs: University of Minnesota

- EPAC model scaled to 250 students in the Core Clerkships
- Demonstration of validity evidence for the assessment system used in EPAC
- Development of Assessment and Coaching Experts
- UME CCCs designed to assess level of entrustment based on multiple EPA observations

Pediatric EPAs: The General Pediatrics EPA study

- Led by Carol Carraccio (now David Turner) and Dan Schumacher
- Association of Pediatric Program Directors Longitudinal Educational Assessment Research Network General Pediatrics Entrustable Professional Activities Study Group
- Assessed use of the General Pediatrics EPAs across multiple programs
- Developed understanding for where residents are/should be at the end of training for each EPA

Pediatric EPAs: The General Pediatrics EPA study

- 1987 residents across all three years in 23 programs
- 5 data collection points
- 25,503 supervision level reports
- At the time of graduation (36 months), the % of trainees who were rated at “unsupervised practice” varied by EPA from 53% to 98%.
- If performance standards were set to 90% of trainees achieving “unsupervised practice” this standard would be met for only 8 of the 17 EPAs (with one more at 89%)

Pediatric Subspecialty EPAs: The SPIN Network

• Led by Rich Mink and implemented by the Subspecialty Pediatrics Investigator Network (SPIN)
• Found validity evidence for level of supervision scales used in EPA assessment¹
• Found validity evidence for using EPA Level of Supervision scales to assess pediatric subspecialty trainee performance²

Final Thoughts
Competencies/Milestones + EPAs: Both Are Critical for Assessment

• **Competencies & Milestones: A Granular Approach (Telephoto)**
  
  • Assess a learner’s ability in a requisite aspect of a professional activity (e.g., communicating with respect)
Competencies/Milestones + EPAs: Both Are Critical for Assessment

• EPAs: A Holistic Approach (Panoramic)
  
  • Integrate competencies within a clinical context and assess clusters of behaviors that allow one to carry out a professional activity
  
  • Map to competencies & milestones – allow for vignette matching
Summary: Why EPAs?

• Make sense to faculty, trainees and the public
• Make assessment more practical and feasible by clustering competencies and their milestones into meaningful professional activities
• Add meaning to assessment by focusing on integration of competencies in the context of care delivery
• Align what we assess with what we do
Objectives

• Understand the paradigm shift to CBME and the specific conundrums of assessment

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Questions/Reflections