CBME and Entrustable Professional Activities (EPAs)

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OPDA

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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

Disclaimer

All models are wrong but some are useful

George E.P. Box

SPECIAL THEME ARTICLE

Shifting Paradigms: From Flexner to Competencies

Carol Carraccio, MD, Susan D. Wolfsthal, MD, Robert Englander, MD, MPH, Kevin Ferentz, MD, and Christine Martin, PhD

ABSTRACT

Realizing medical education is on the brink of a major paradigm shift from structure- 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 Clearinghouse from the 1960s until the present, reviewed the titles and abstracts of the 469 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 many medical disciplines. Little attention, however, was devoted to defining the benchmarks of specific competencies, how to attain them, or the evaluation of competence. Lack of evaluation strategies was likely one of the forces responsible for the three-decade lag between initiation of the movement and widespread adoption. Lessons learned from past experiences include the importance of strategic planning and faculty and learner buy-in for defining competencies. In addition, the benchmarks for defining competency and the thresholds for attaining competence must be clearly delineated. The development of appropriate assessment tools to measure competence remains the challenge of this decade, and educators must be responsible for studying the impact of this paradigm shift to determine whether its ultimate effect is the production of more competent physicians.
Acad. Med. 2002;77:361–367.

The challenge to medical education at the turn of the 20th century took the form of the Flexnerian revolution.[1] 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 reform. 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 Accreditation Council for Graduate Medical Education (ACGME) to establish competency-based training for all physicians. The current structure- and process-based system defines the training experience by exposure to specific contents for specified periods of time (e.g., one month of adolescent medicine), while a competency-based system defines the desired outcome of training, the outcome driving the educational process (e.g., competence 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 Flexnerian revolution of the 21st century.

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

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Shifting the paradigm from **fixed time:variable outcome** to **fixed outcome:variable time** Medical Education

	Structure/Process	Competency-based
Driving Force for Curriculum	Content & Knowledge Acquisition	Outcomes & Knowledge Application
Driving Force for Process	Teacher	Learner(s)
Path of Learning	Hierarchy	No Hierarchy
Responsibility for Learning	Teacher	Student and Teacher partnership

The Paradigm Shift

Framework for Assessment of Competence

|	Structure/Process	Competency-based
Typical Assessment Context	Proxy / Removed	Authentic / "In the trenches" Direct observation
Typical Assessment Tool	Single or few, often Multiple Choice Questionnaires (MCQs)	Multiple, subjective as well as objective Portfolios
Timing of Assessment	Emphasis on summative	Emphasis on formative
Type of Evaluation	Norm-referenced	Criterion-referenced

The Paradigm Shift

- 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[1])

- Step 3: Define the Curriculum (Tailored Learning Experiences/Competency-focused Instruction[1])

- Step 4: Define the Assessment Framework (Programmatic Assessment[1])

- Step 5: Evaluate the new Educational Program

1) Van Melle E, et al. A Core Components Framework for Evaluating Implementation of Competency-Based Medical Education Programs. Acad Med. 2019 Jul;94(7):1002-1009.

Assessment: The Achilles Heel of CBME
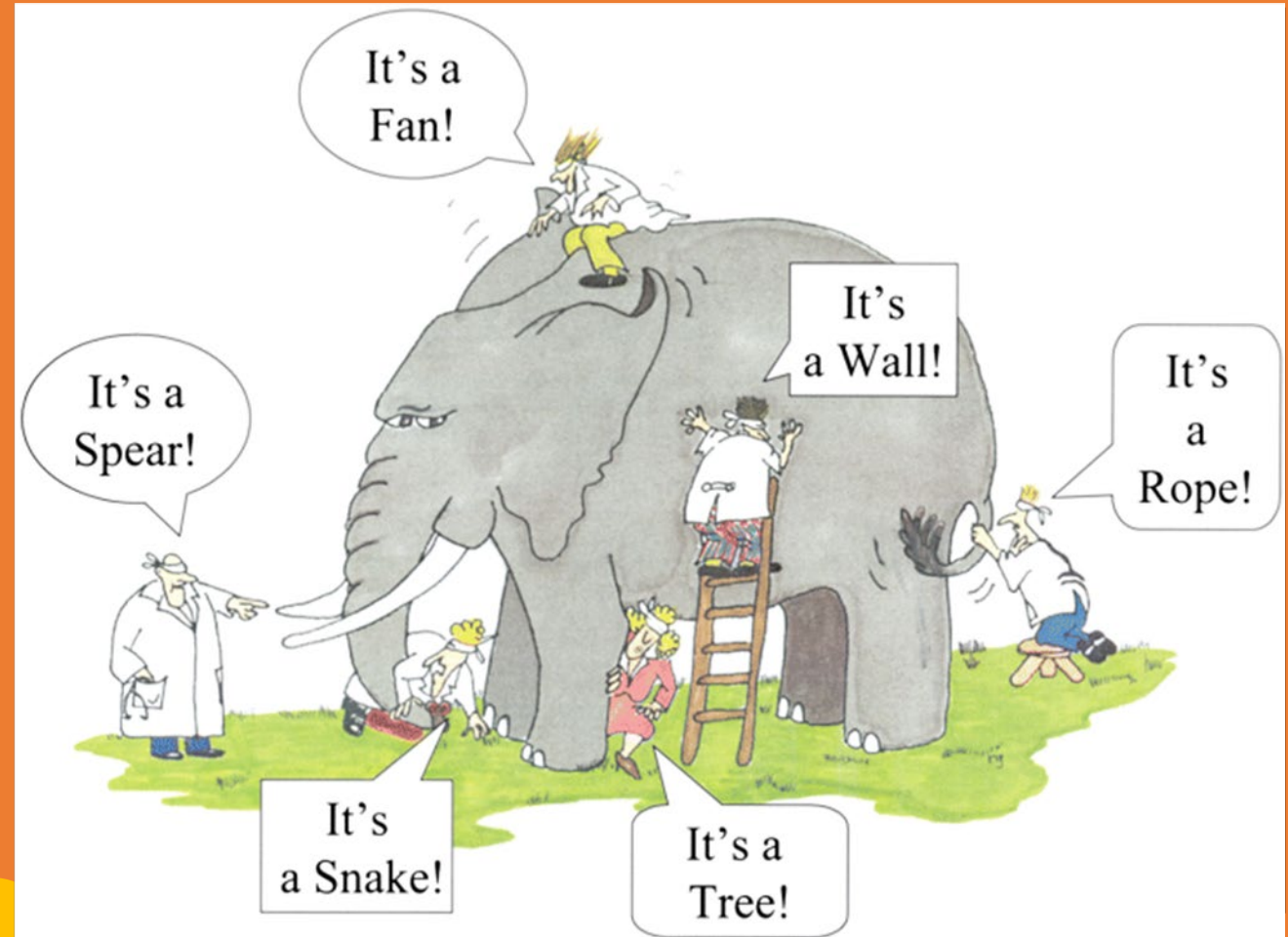
Resolution

Provide an integrative construct that places the competencies and milestones in the context of clinical care

Putting it Back Together….

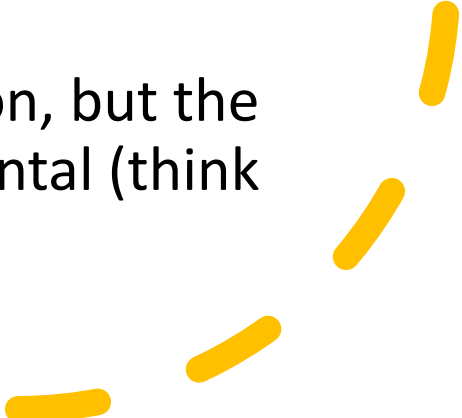**Entrustability of professional activities and competency-based training**

Olle ten Cate

The idea of competency-based training (CBT) seems to have entered medical education with a

fields other than medical education.[4,5] The way in which we suc-ceed in defining competencies
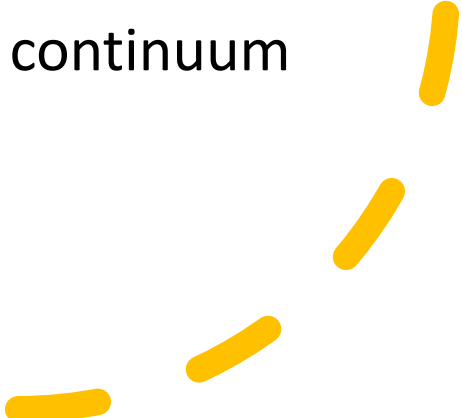
respect, supervisors to delegate

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

EPA

- 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)

E**P**A

Professional is a modifier of activities that refers specifically to:

- Area of practice (e.g., specialty)

- Scope of practice (e.g., profession)
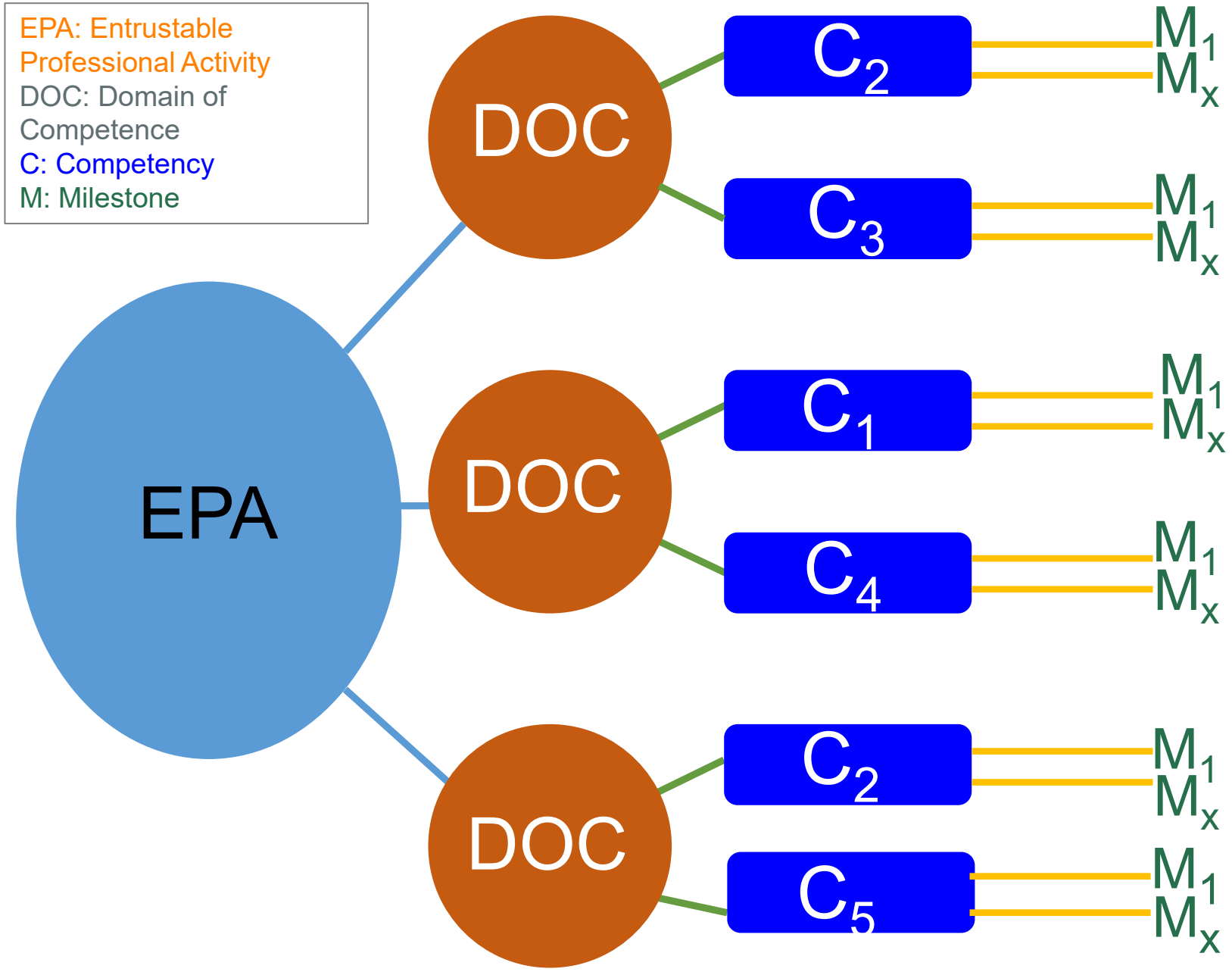
- Learner's place on the educational continuum
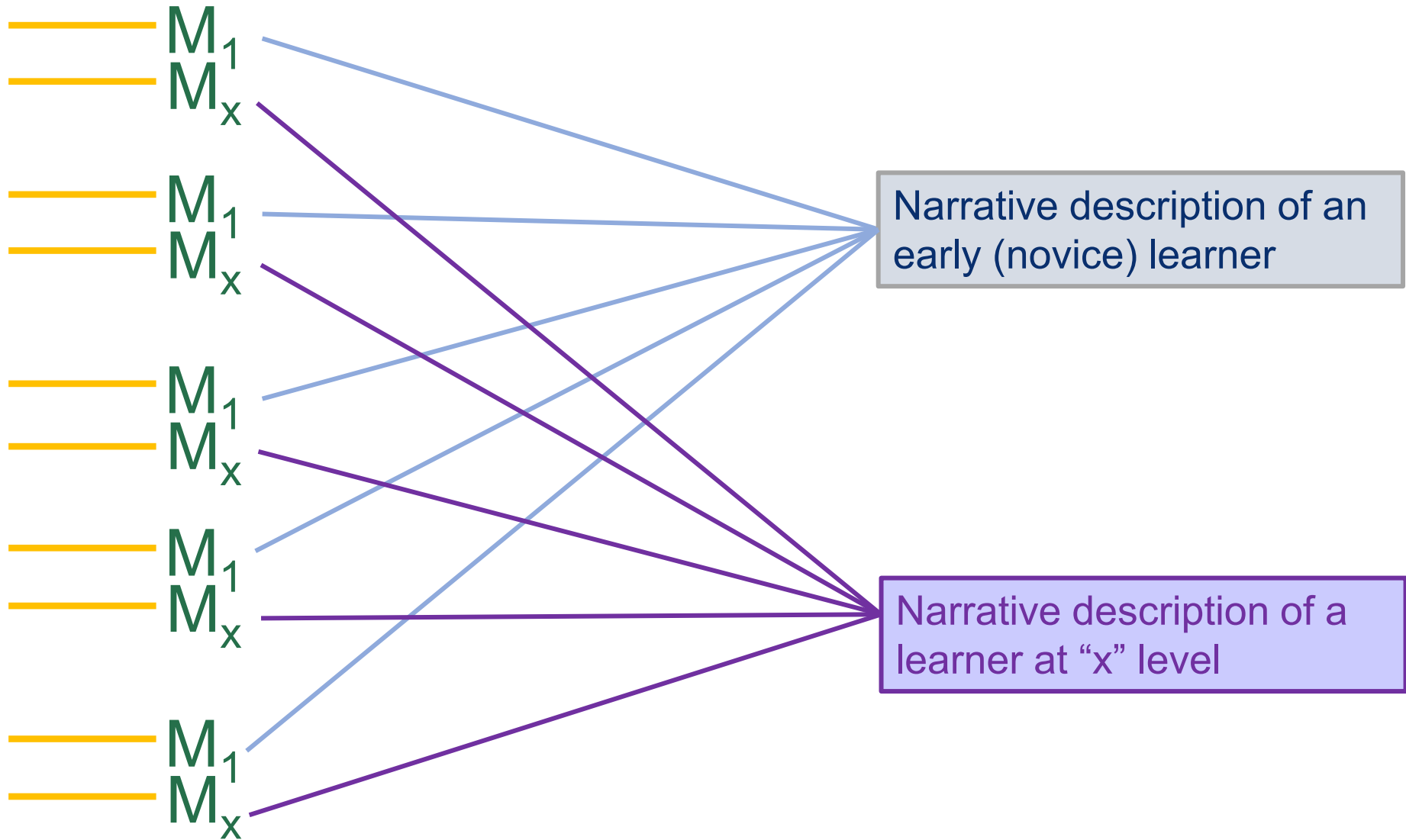
EPA

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
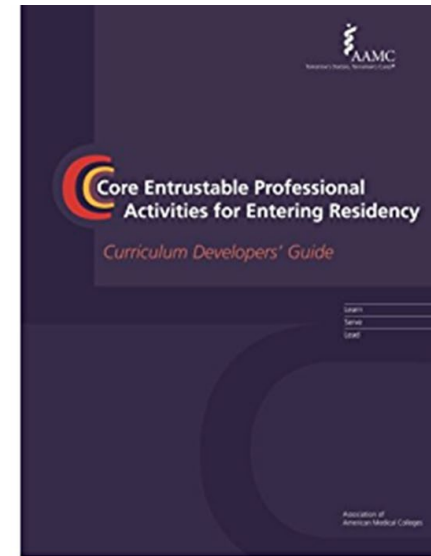- Require integration of critical competencies and milestones

M_1
M_x

M_1
M_x

M_1
M_x

M_1
M_x

M_1
M_x

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
- ¾ 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

Schwartz A, et al. Shared Mental Models Among Clinical Competency Committees in the Context of Time-Variable, Competency-Based Advancement to Residency. Acad Med. 2020 Nov;95(11S Association of American Medical Colleges Learn Serve Lead: Proceedings of the 59th Annual Research in Medical Education Presentations):S95-S102.
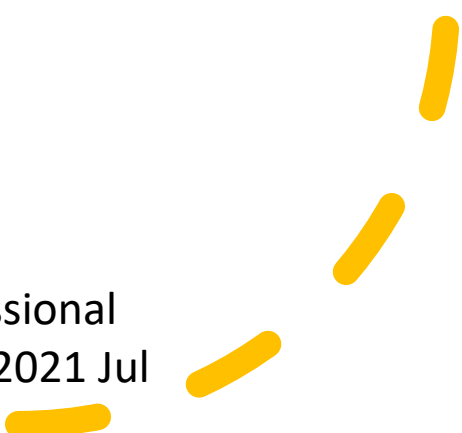
The UME EPAs: University of Minnesota

- EPAC model scaled to 250 students in the Core Clerkships

- Demonstration of validity evidence for the assessment system used in EPAC[1]

- Development of Assessment and Coaching Experts

- UME CCCs designed to assess level of entrustment based on multiple EPA observations

Violato C et al. Validity Evidence for Assessing Entrustable Professional Activities During Undergraduate Medical Education. Acad Med. 2021 Jul 1;96(7S):S70-S75.
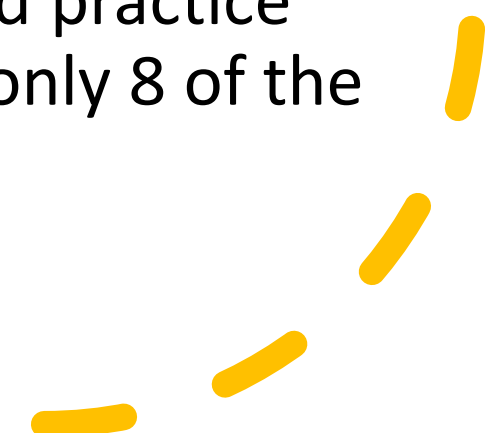
Pediatric EPAs: The General Pediatrics EPA study

- 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

- Schumacher DJ, et al; Longitudinal Assessment of Resident Performance Using Entrustable Professional Activities. JAMA Netw Open. 2020 Jan 3;3(1):e1919316.

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%)

- Schumacher DJ, et al; Longitudinal Assessment of Resident Performance Using Entrustable Professional Activities. JAMA Netw Open. 2020 Jan 3;3(1):e1919316.

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 assessment[1]

- Found validity evidence for using EPA Level of Supervision scales to assess pediatric subspecialty trainee performance[2]

1) Mink RB, et al. Validity of Level of Supervision Scales for Assessing Pediatric Fellows on the Common Pediatric Subspecialty Entrustable Professional Activities. Acad Med. 2018 Feb;93(2):283-291.

2) Pitts S et al. Fellow Entrustment for the Common Pediatric Subspecialty Entrustable Professional Activities Across Subspecialties. Academic Pediatrics. August, 2022: 22 (6); 881-886.
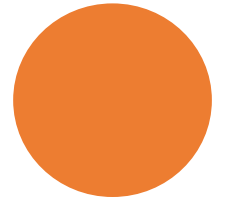
Competencies/Milestones + EPAs: Both Are Critical for Assessment

- <u>Competencies & Milestones</u>: 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
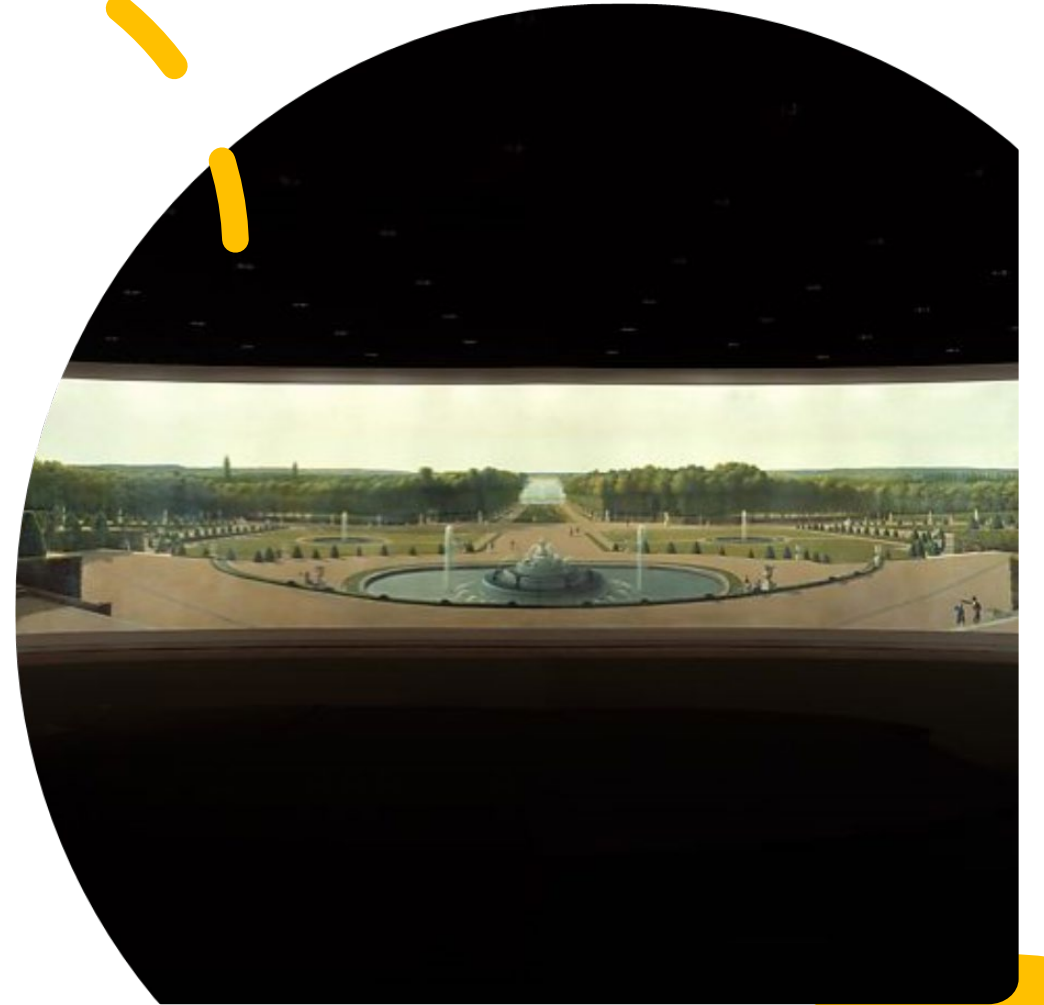
Summary: Why EPAs?

- 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

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Questions/Reflections