CBME and Entrustable Professional Activities (EPAs) in the Clerkship

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Conflict of Interest Disclosure

No disclosures

All models are wrong
but some are useful

George E.P. Box

Objectives

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

- Design and Map an EPA

- Explore how EPAs can be integrated into clerkship assessment

Competency-based Medical Education

Shifting the paradigm from

Fixed Time: Variable Outcome
to
Fixed Outcome: Variable Time

Paradigm Shift

	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

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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

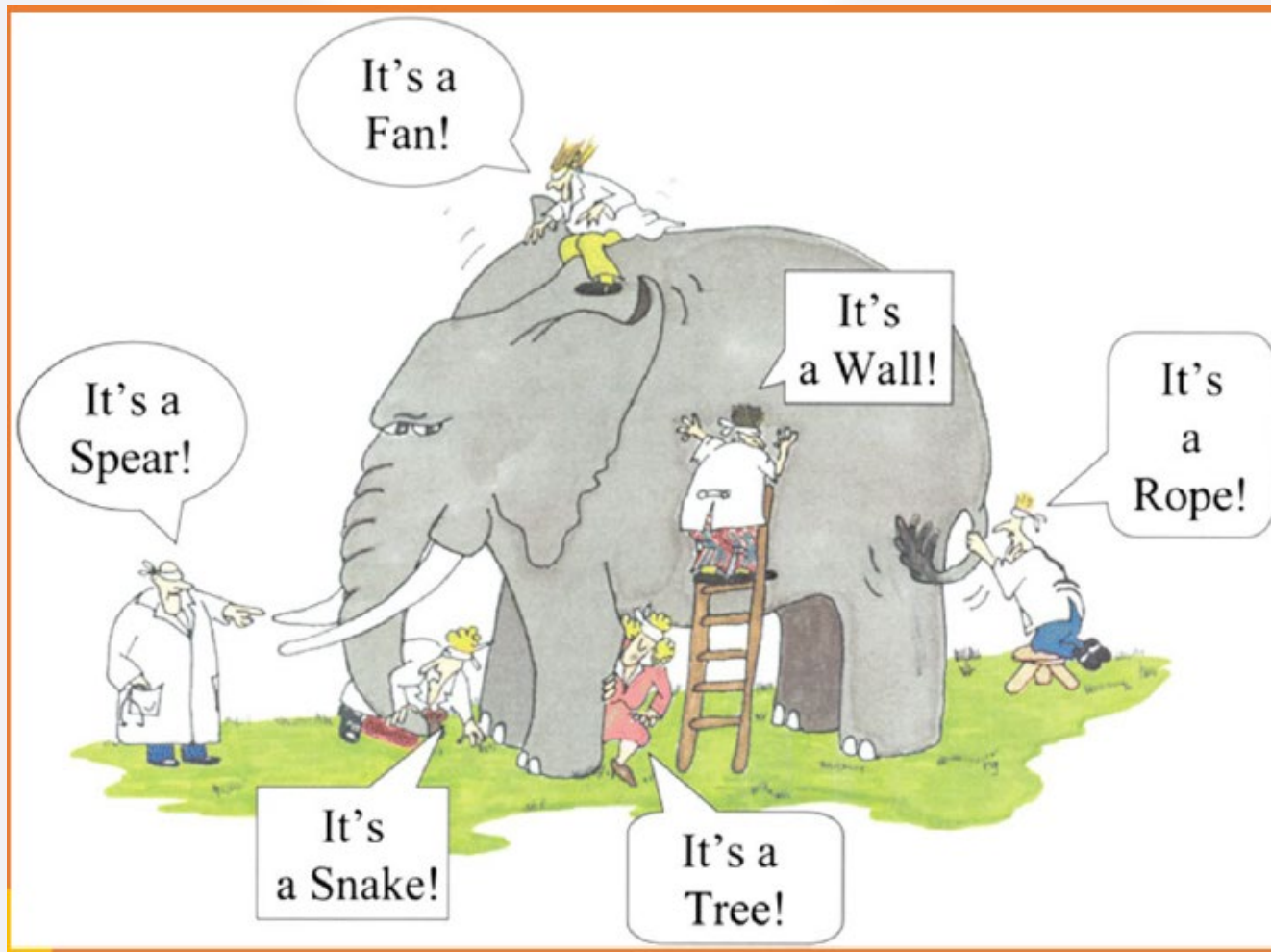Slide credit: Robert Englander, MD, MPH, OPDA, 11/18/22

Implementation of CBME

- 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)-Developmental

- 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

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

Slide credit: Robert Englander, MD, MPH, OPDA, 11/18/22

Assessment: The Challenge of CBME

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The Solution: EPAs

Create an integrative construct that places the competencies and milestones in the context of CLINICAL care.

Core Entrustable Professional Activities for Entering Residency

Curriculum Developers' Guide

Learn
Serve
Lead

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

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Professional: the P in ePa

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

Activities: the A in 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

The 13 EPAs

EPA	Description	M1/2	M3	M4
1A	Gather a history	X	X	X
1B	Perform a physical exam	X	X	X
2	Prioritize a Ddx	X	X	X
3	Recommend and interpret common tests		X	X
4	Enter and discuss orders and prescriptions			X
5	Document a clinical encounter	X	X	X
6	Provide an oral presentation	X	X	X
7	Form clinical questions and retrieve evidence to advance patient care		X	X
8	Give or receive a handoff to transition care responsibility			X
9	Collaborate as a member of an inter-professional team		X	X
10	Recognize a patient requiring urgent/emergent care			X
11	Obtain informed consent for tests and/or procedures			X
12	Perform general procedures of a physician		+/-	X
13	Identify system failures and contribute to a culture of safety and improvement			X

Anatomy of an EPA

Entrustable Professional Activity (EPA): EPAs are *units of professional practice*, defined as tasks or responsibilities that trainees are *entrusted to perform unsupervised* once they have attained sufficient specific competence. EPAs are *independently executable, observable, and measurable* in their process and outcome, and, therefore, suitable for entrustment decisions.
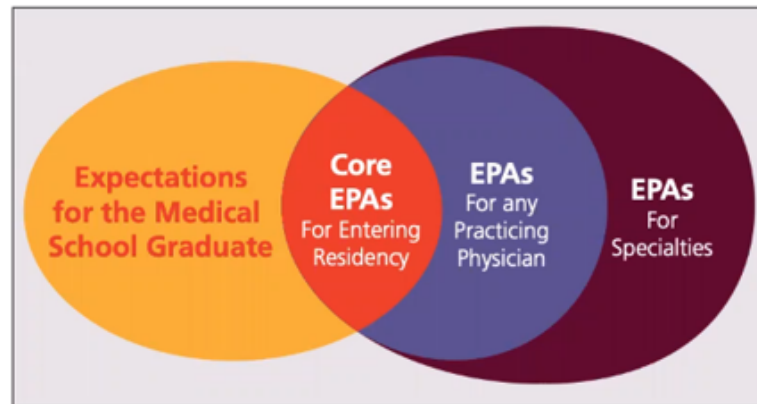
Credit: John Dalrymple, MD, Professor, Harvard Medical School

Entrustment: the E in 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 requires faculty to
  - Observe learners directly
  - Make judgments about level of supervision

- 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)

Linking Trust and Supervision

- Milestone Level 1: Observation but no execution, even with direct supervision
- Milestone Level 2: Execution with direct, proactive supervision
- Milestone Level 3: Execution with supervision on request, quickly available
- Milestone Level 4: Supervision at a distance, and/or posthoc
- Milestone Level 5: Supervision provided by the trainee to more junior colleagues

Milestones

- Milestones are behavioral descriptions of learners at advancing levels of performance along a developmental continuum
- TWO milestones for each competency
    1. Novice, pre-entrustable learner
    2. Entrustable learner
    3. ? Intermediate level-advanced beginner (Can perform EPA with minimal intervention from a supervisor)

EPAs, Competencies, and Milestones
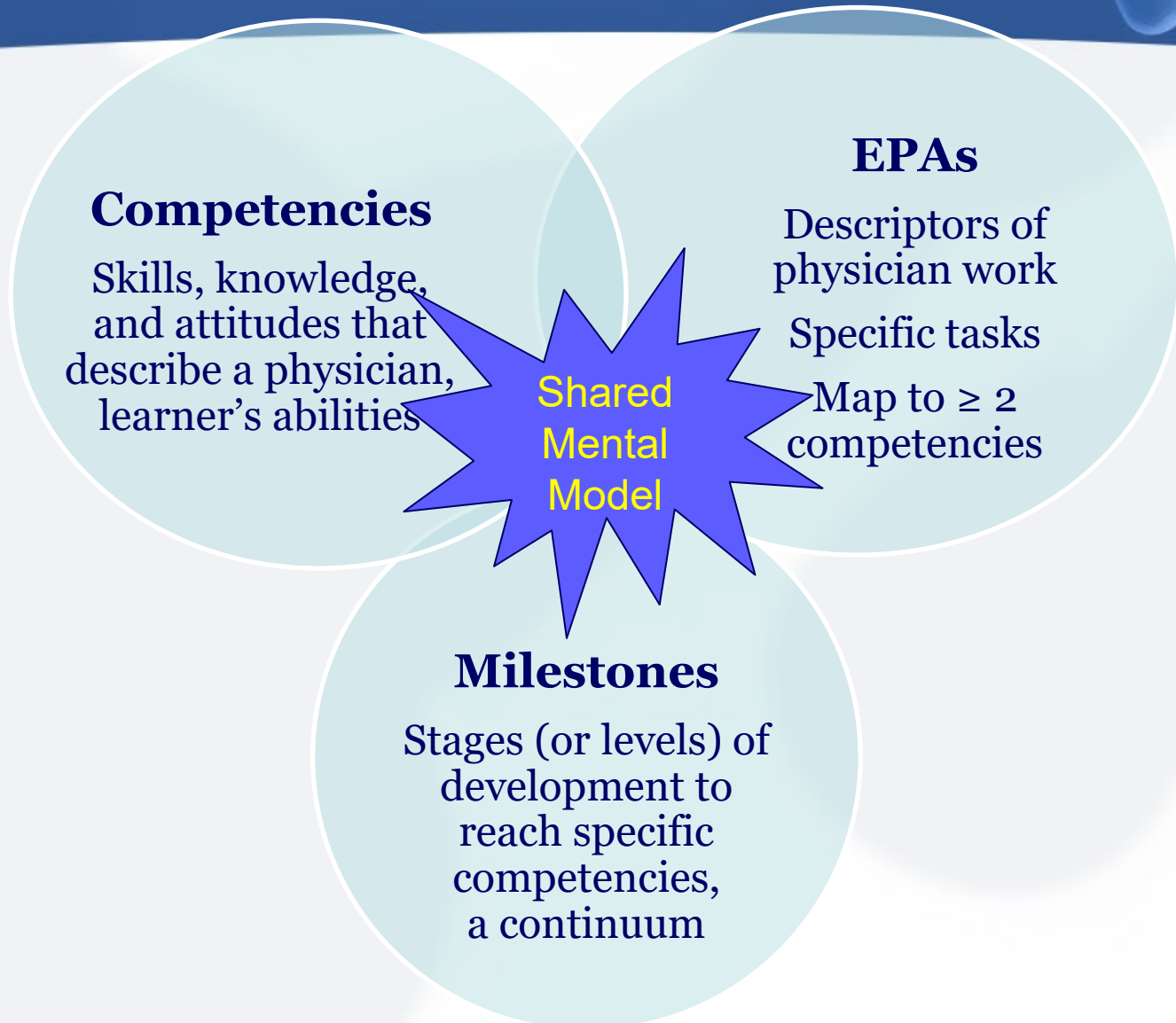
Competencies

Skills, knowledge, and attitudes that describe a physician, learner's abilities

EPAs

Descriptors of physician work

Specific tasks

Map to ≥ 2 competencies

Shared Mental Model

Milestones

Stages (or levels) of development to reach specific competencies, a continuum

BB

Anatomy of an EPA

EPA 6: Provide an oral presentation of a clinical encounter

Functions

- Present information that has been *personally gathered or verified*, acknowledging any areas of uncertainty.
- Provide an *accurate, concise, and well-organized* oral presentation.
- Adjust the oral presentation to *meet the needs of the receiver* of the information.
- Assure *closed-loop communication* between the presenter and receiver of the information to ensure that both parties have a shared understanding of the patient's condition and needs.

Relevant Competencies

- Patient care
- Practice-based Learning and Improvement
- Interpersonal and Communication Skills
- Professionalism
- Personal and Professional Development

Demonstrated Behavior Level (Level of Supervision)

- Pre-entrustable
- Emerging
- Entrustable

Credit: John Dalrymple, MD, Professor, Harvard Medical School
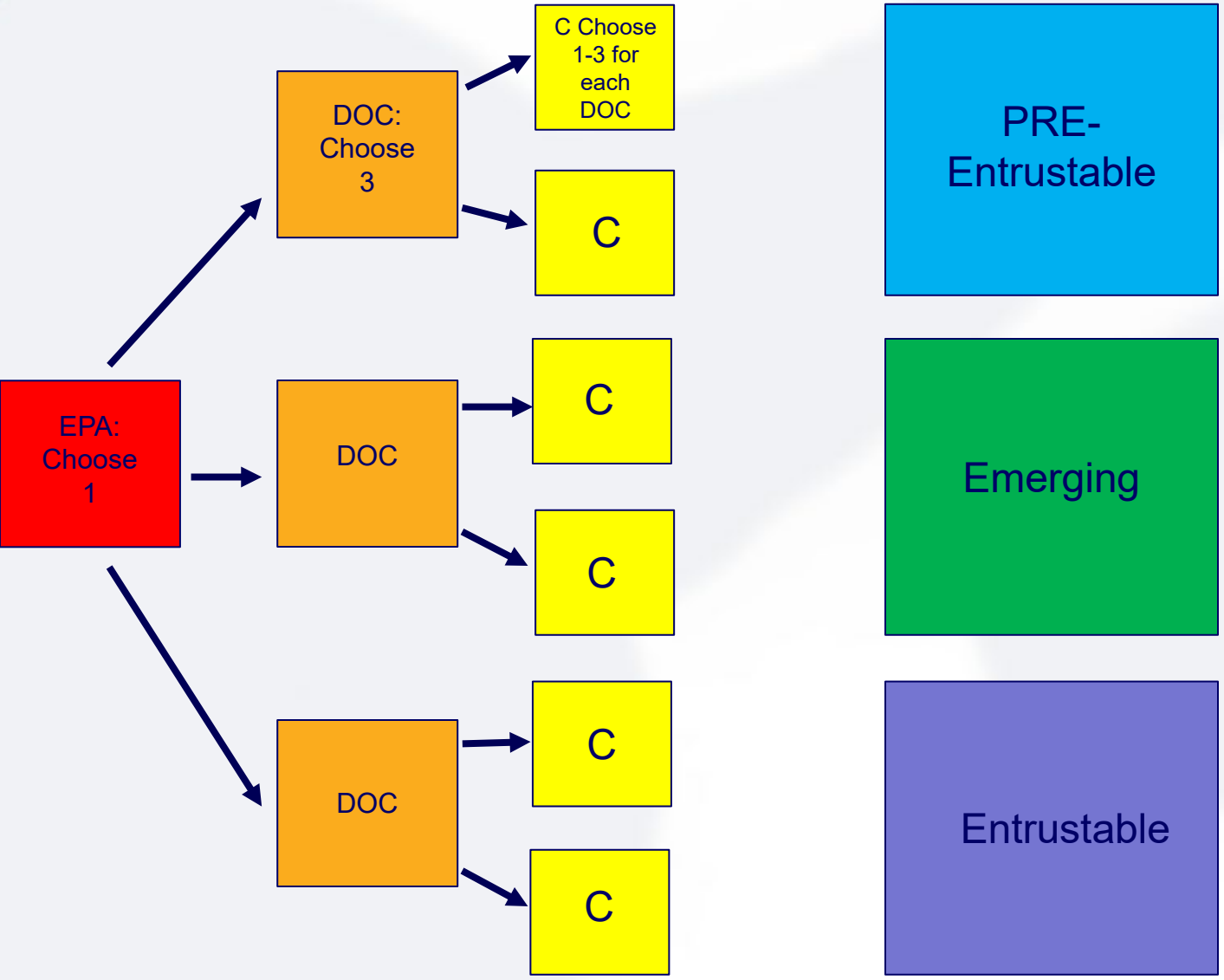
How is an EPA different from a Competency?

- EPA translate competency into clinical practice...not an alternative

- Competencies are descriptors of physicians...EPAs are descriptors of work

- EPAs usually require multiple competencies
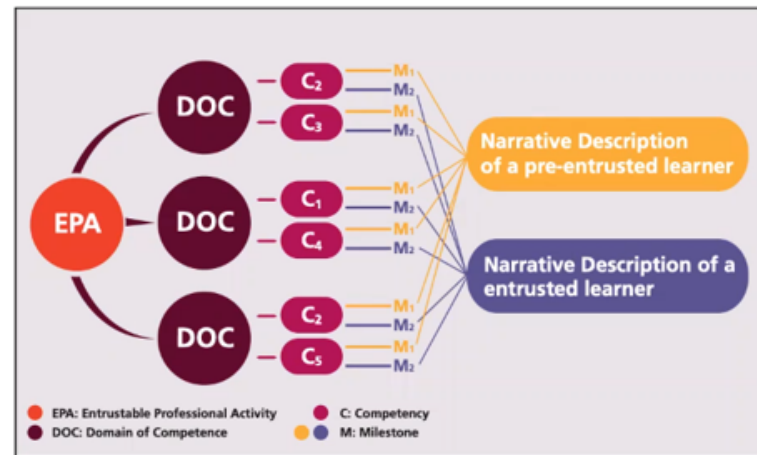
Credit: John Dalrymple, MD, Professor, Harvard Medical School

Lets Do Some Mapping!

Implementing EPA Assessments

EPA#	EPA Text	Pre-entrustable Behavior	Emerging	Entrustable Behavior
1A*	**Gather a history:**	Gathers too little/too much information, and does not link information in a clinically relevant fashion. Communication is unidirectional and not patient-focused. Does not tailor H&P to specific circumstances.	Gathers most relevant information, Links most history/PE findings in a clinically relevant fashion. Communication is mostly patient focused, but still somewhat unidirectional.	Gathers complete and/or focused and accurate history (appropriate to patient presentation and setting), demonstrates relevant clinical reasoning useful in patient care. Communication is considerate, culturally-sensitive and patient/family-centered.
1B*	**Perform a physical examination:**	Incorrectly performs or omits pertinent physical exam components. Does not tailor H&P to specific circumstances.	Correctly performs most of basic physical exam, and identifies and interprets most abnormal findings. May have trouble tailoring exam to setting.	Correctly performs basic and/or focused physical exam (appropriate to setting) and correctly identifies and interprets abnormal findings in the context of patient history.
2*	**Prioritize a differential diagnosis following a clinical encounter:**	Generates 1-2 possible Dx, largely based on pattern recognition; has difficulty generating alternative hypotheses or explaining supporting mechanisms of disease. Unable to outline diagnostic evaluations to confirm/exclude particular Dx.	Generates a short list of possible Dx based on pattern recognition and reasoning about pathophysiology. Eliminates a few Dx based on H&P and initial labs. Outlines a simple evaluation using commonly available tests to confirm/exclude particular Dx.	Generates a thorough, appropriate, and reasoned list of possible Dx based on pathophysiology and epidemiology. Determines most likely based on H&P and initial labs. Outlines high value test strategy to confirm/exclude most

Credit: John Dalrymple, MD, Professor, Harvard Medical School

Implementing Entrustment Decisions

	Pre-Entrustable	Emerging		Entrustable
Level of Supervision	**1a:** Not allowed to practice; allowed to *observe*	**2a:** Allowed to practice EPA only under ***proactive, full supervision***, as ***co-activity*** w/supervision	**2b:** Allowed to practice EPA only under ***proactive, full supervision***, with supervisor in room ready to ***step in as needed***	**3a:** Allowed to practice EPA only under ***reactive/on-demand supervision***, with supervisor immediately available, ***all findings double-checked***	**3b:** Allowed to practice EPA only under ***reactive/on-demand supervision***, with supervisor immediately available, ***key findings double-checked***
	☐	☐	☐	☐	☐
Student Behavior	Provides an incomplete, inaccurate presentation w/out logical sequence. Does not distinguish between important/unimportant details of H&P and labs (pertinent +/-'s). Requires multiple clarifying questions. Reads from ...		Provides a mostly complete, accurate presentation w/general logical sequence. Distinguishes between important/unimportant H&P elements (pertinent +/-'s). Requires more than 5 clarifying questions. Spontaneously ...	Goal by Medical School Graduation	Provides a complete, accurate and logically sequenced oral presentation. Presents pertinent +/-'s w/out prompting. Requires less than 5 clarifying questions. Spontaneously presents most H&P elements using notes only ...

Credit: John Dalrymple, MD, Professor, Harvard Medical School

The Future: Learner Portfolios

Portfolio of: Learner Jones	MS1		MS2		MS3		MS4	
EPA 1A	1	2	3	3	3	3	3	3
EPA 1B	1	1	2	3	3	3	3	3
EPA 2	1	1	1	2	2	3	3	3
EPA 3	1	1	1	1	2	2	2	3

Manageable # of EPAs for 4 year program=20-30

1. Observing the activity
2. Acting with direct supervision in the room
3. Acting with supervision available within minutes
4. Acting unsupervised (i.e. Clinical Oversight)=Proficient
5. Providing supervision to juniors=Expert

Summary: Advantages of EPAs

- The activities make sense to faculty, trainees, and the public

- Represent day to day work of caring for patients

- Cluster Competencies and Milestones into clinical activities

- Link Trust and Supervision with assessment

Credit: John Dalrymple, MD, Professor, Harvard Medical School

Summary: Advantages of EPAs

Competencies/Milestones + EPAs: Both Are Critical for Assessment

– EPAs: A Holistic Approach (Panoramic)
- Integrate competencies within a clinical context
- Assess clusters of behaviors needed to perform a professional activity
- Map to competencies & milestones
  - ❏ Allow for vignette matching

Trust is at the Core

"**Teachers must trust their learners**. The trust of teachers is won when learners attend, engage, respond, and appreciate the teachers and their volunteerism. It takes time and repeated exposure for trust to be optimally developed, which implies both available time and longitudinal engagement that is increasingly absent. In contrast, trust is easily lost if learners do not attend or are ambivalent, distracted, resistant, dismissive, defensive, or unresponsive."

TRUST IN HEALTH CARE

VIEWPOINT

JAMA   Published online May 13, 2019

Trust Between Teachers and Learners

"**Teachers make trusting judgments about their learners all the time.** Teachers must progressively relinquish control and supervision to their learners, attending to the safety of their shared patients. Based on the level of trust, students should progress from observing patient care, to performing it under continuous and direct supervision, to performing with indirect supervision with the teaching physician within close proximity to supervision from a distance; ultimately, the learner would be able to supervise others."

David P. Sklar, MD
Department of Emergency Medicine, University of New Mexico School of Medicine, Albuquerque.

Graham T. McMahon, MD, MMSc
Accreditation Council for Continuing Medical Education, Chicago, Illinois.

"**Students, residents, and peer-learners must learn to trust their teachers.** The level of trust in a teacher is associated with the engagement in the learning process. Teachers create trust by establishing and demonstrating their own competence and professionalism, showing interest in the learners, and providing meaningful feedback that helps learners grow. Reciprocally, educators who harass or otherwise lose their learners' trust may continue to teach but will be unlikely to create effective learning. Trust that is eroded or lost can be impossible to

EPA 1A: Gather a history

EPA 1B: Perform a physical examination

EPA 2: Prioritize a differential diagnosis following a clinical encounter

EPA 3: Recommend and interpret common diagnostic and screening tests

EPA 4: Enter and discuss orders and prescriptions

EPA 5: Document a clinical encounter in the patient record

EPA 6: Provide an oral presentation of a clinical encounter

EPA 7: Form clinical questions and retrieve evidence to advance patient care

EPA 8: Give or receive a patient handover to transition care responsibility

EPA 9: Collaborate as a member of an inter-professional team

EPA 10: Recognize a patient requiring urgent or emergent care and initiate evaluation and management

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

EPA 12: Perform general procedures of a physician

EPA 13: Identify system failures and contribute to a culture of safety and improvement

8 DOMAINS OF COMPETENCY (DOCs) from the Reference List of General Physician Competencies

Choose 3 DOCs

PATIENT CARE (PC): Provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

KNOWLEDGE FOR PRACTICE (KP): Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

PRACTICE-BASED LEARNING AND IMPROVEMENT (PBLI): Demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.

INTERPERSONAL AND COMMUNICATION SKILLS (IPCS): Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

PROFESSIONALISM (P): Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

SYSTEMS-BASED PRACTICE (SBP): Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

INTERPROFESSIONAL COLLABORATION (IPC): Demonstrate the ability to engage in an interprofessional team in a manner that optimizes safe, effective patient and population-centered care.

PERSONAL AND PROFESSIONAL DEVELOPMENT (PPD): Demonstrate the qualities required to sustain lifelong personal and professional growth.

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DOMAIN OF COMPETENCY (DOC): <mark>PATIENT CARE (PC)</mark>

Provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

<mark>Critical Competencies from the Reference List of General Physician Competencies in PC Domain</mark>

Choose 1-3 <mark>C</mark> for each DOC utilized in Map

</div>

PC 1 Perform all medical, diagnostic, and surgical procedures considered essential for the area of practice

PC 2 Gather essential and accurate information about patients and their condition through history-taking, physical examination, and the use of laboratory data, imaging, and other tests

PC 3 Organize and prioritize responsibilities to provide care that is safe, effective, and efficient

PC 4 Interpret laboratory data, imaging studies, and other tests required for the area of practice

PC 5 Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment

PC 6 Develop and carry out patient management plans

PC 7 Counsel and educate patients and their families to empower them to participate in their care and enable shared decision making

PC 8 Provide appropriate referral of patients including ensuring continuity of care throughout transitions between providers or settings and following up on patient progress and outcomes

PC 9 Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health

PC 10 Provide appropriate role modeling

PC 11 Perform supervisory responsibilities commensurate with one's roles, abilities, and qualification

Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

<mark>**Critical Competencies from the Reference List of General Physician Competencies in KP Domain**</mark>

Choose 1-3 <mark>C</mark> for each DOC utilized in Map

KP 1 Demonstrate an investigatory and analytic approach to clinical situations

KP 2 Apply established and emerging biophysical scientific principles fundamental to health care for patients and populations

KP 3 Apply established and emerging principles of clinical sciences to diagnostic and therapeutic decision making, clinical problem solving, and other aspects of evidence-based health care

KP 4 Apply principles of epidemiological sciences to the identification of health problems, risk factors, treatment strategies, resources, and disease prevention/health promotion efforts for patients and populations

KP 5 Apply principles of social-behavioral sciences to provision of patient care, including assessment of the impact of psychosocial-cultural influences on health, disease, care-seeking, care-compliance, and barriers to and attitudes toward care

KP 6 Contribute to the creation, dissemination, application, and translation of new health care knowledge and practices

Demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.

<mark>**Critical Competencies from the Reference List of General Physician Competencies in PBLI Domain**</mark>

Choose 1-3 <mark>C</mark> for each DOC utilized in Map

PBLI 1 Identify strengths, deficiencies, and limits in one's knowledge and expertise

PBLI 2 Set learning and improvement goals

PBLI 3 Identify and perform learning activities that address one's gaps in knowledge, skills, or attitudes

PBLI 4 Systematically analyze practice using quality-improvement methods and implement changes with the goal of practice improvement

PBLI 5 Incorporate feedback into daily practice

PBLI 6 Locate, appraise, and assimilate evidence from scientific studies related to patients' health problems

PBLI 7 Use information technology to optimize learning

PBLI 8 Participate in the education of patients, families, students, trainees, peers, and other health professionals

PBLI 9 Obtain and utilize information about individual patients, populations of patients, or communities from which patients are drawn to improve care

PBLI 10 Continually identify, analyze, and implement new knowledge, guidelines, standards, technologies, products, or services that have been demonstrated to improve outcomes

DOMAIN OF COMPETENCY (DOC): <mark>INTERPERSONAL AND COMMUNICATION SKILLS (IPCS)</mark>

Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

<mark>Critical Competencies from the Reference List of General Physician Competencies in IPCS Domain</mark>

Choose 1-3 <mark>C</mark> for each DOC utilized in Map

ICS 1 Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds

ICS 2 Communicate effectively with colleagues within one's profession or specialty, other health professionals, and health-related agencies (see also inter-professional collaboration competency (IPC) 7.3)

ICS 3 Work effectively with others as a member or leader of a health care team or other professional group (see also IPC 7.4)

ICS 4 Act in a consultative role to other health professionals

ICS 5 Maintain comprehensive, timely, and legible medical records

ICS 6 Demonstrate sensitivity, honesty, and compassion in difficult conversations (e.g. about issues such as death, end-of-life issues, adverse events, bad news, disclosure of errors, and other sensitive topics)

ICS 7 Demonstrate insight and understanding about emotions and human responses to emotions that allow one to develop and manage interpersonal interactions

Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

<mark>**Critical Competencies from the Reference List of General Physician Competencies in P Domain**</mark>

Choose 1-3 <mark>C</mark> for each DOC utilized in Map

P 1 Demonstrate compassion, integrity, and respect for others

P 2 Demonstrate responsiveness to patient needs that supersedes self-interest

P 3 Demonstrate respect for patient privacy and autonomy

P 4 Demonstrate accountability to patients, society, and the profession

P 5 Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

P 6 Demonstrate a commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations

Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

<mark>**Critical Competencies from the Reference List of General Physician Competencies in SBP Domain**</mark>

Choose 1-3 <mark>C</mark> for each DOC utilized in Map

SBP 1 Work effectively in various health care delivery settings and systems relevant to one's clinical specialty

SBP 2 Coordinate patient care within the health care system relevant to one's clinical specialty

SBP 3 Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care

SBP 4 Advocate for quality patient care and optimal patient care systems

SBP 5 Participate in identifying system errors and implementing potential systems solutions

SBP 6 Perform administrative and practice management responsibilities commensurate with one's role, abilities, and qualification

DOMAIN OF COMPETENCY (DOC): <mark>INTER-PROFESSIONAL COLLABORATION (IPC)</mark>

Demonstrate the ability to engage in an inter-professional team in a manner that optimizes safe, effective patient and population-centered care.

<mark>Critical Competencies from the Reference List of General Physician Competencies in IPC Domain</mark>

Choose 1-3 <mark>C</mark> for each DOC utilized in Map

IPC 1 Work with other health professionals to establish and maintain a climate of mutual respect, dignity, diversity, ethical integrity, and trust

IPC 2 Use the knowledge of one's own role and those of other professions to appropriately assess and address the health care needs of the patients and populations served

IPC 3 Communicate with other health professionals in a responsive and responsible manner that supports the maintenance of health and the treatment of disease in individual patients and populations

IPC 4 Participate in different team roles to establish, develop, and continuously enhance inter-professional teams to provide patient- and population-centered care that is safe, timely, efficient, effective, and equitable

DOMAIN OF COMPETENCY (DOC): <mark>PERSONAL AND PROFESSIONAL DEVELOPMENT (PPD)</mark>

Demonstrate the qualities required to sustain lifelong personal and professional growth.

<mark>**Critical Competencies from the Reference List of General Physician Competencies in PPD Domain**</mark>

Choose 1-3 <mark>C</mark> for each DOC utilized in Map

PPD 1 Develop the ability to use self-awareness of knowledge, skills, and emotional limitations to engage in appropriate help-seeking behaviors

PPD 2 Demonstrate healthy coping mechanisms to respond to stress

PPD 3 Manage conflict between personal and professional responsibilities

PPD 4 Practice flexibility and maturity in adjusting to change with the capacity to alter behavior

PPD 5 Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients

PPD 6 Provide leadership skills that enhance team functioning, the learning environment, and/or the health care delivery system

PPD 7 Demonstrate self-confidence that puts patients, families, and members of the health care team at ease

PPD 8 Recognize that ambiguity is part of clinical health care and respond by using appropriate resources in dealing with uncertainty