

# The Horizon in Medical Education: From Milestones to EPAs to a New Accreditation System

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# Learning Objectives

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- ▶ What exactly is competency-based medical education?
- ▶ Why competency-based medical education?
- ▶ Set the stage for medical education at this moment in time
- ▶ Discuss next steps in advancing CBME through Milestones and EPAs
- ▶ Highlight the fundamentals of the New Accreditation System



# Early Principles: CBME

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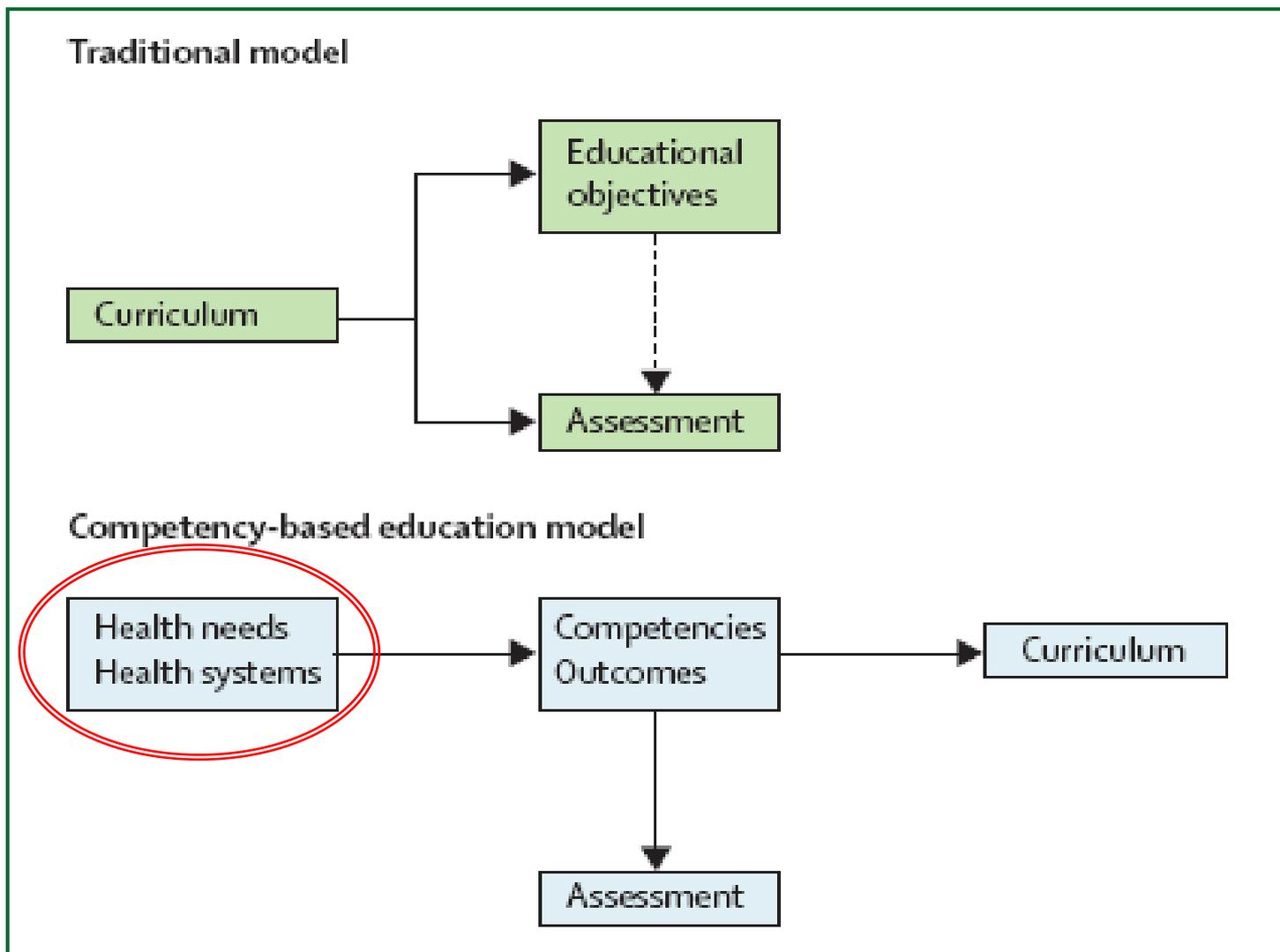
- ▶ **World Health Organization (1978):**
  - ▶ *“The intended output of a competency-based programme is a health professional who can practise medicine at a defined level of proficiency, in accord with local conditions, to meet local needs.”*

**McGaghie WC, Miller GE, Sajid AW, Telder TV. Competency-based Curriculum Development in Medical Education. World Health Organization, Switzerland, 1978.**

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# Traditional versus CBME: Start with System Needs



Frenk J. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. Lancet. 2010

# Competency-Based Medical Education

...is an outcomes-based approach to the design, implementation, assessment and evaluation of a medical education program using an organizing framework of competencies<sup>1</sup>

<sup>1</sup>Frank, JR, Snell LS, ten Cate O, et. al. Competency-based medical education: theory to practice. Med Teach. 2010; 32: 638–645

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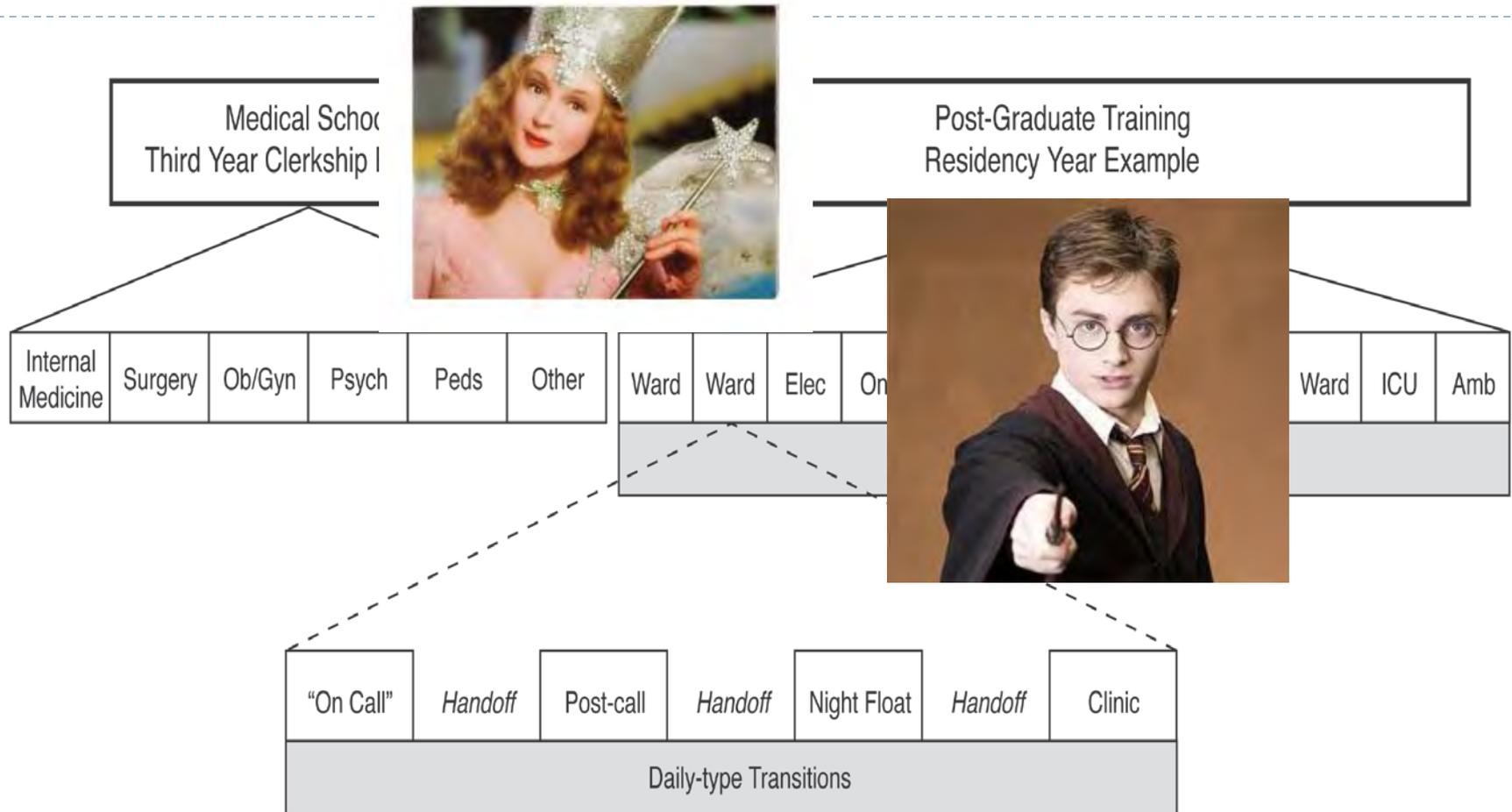
# Mandates of Outcomes-based Training

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- ▶ Programs must be able to demonstrate that students, residents and fellows graduate with high levels of abilities (e.g. competencies) appropriate for the stage of training.
- ▶ Exposure and dwell time are not sufficient proxies for competence
- ▶ Not shooting for “the floor” of competence; excellence is the goal



# Current Medical Education “Architecture”<sup>1</sup>



<sup>1</sup>Holmboe E, Ginsburg S, Bernabeo E. The rotational approach to medical education: time to confront our assumptions. *Med Educ.* 2011; 45(1):69-80.

# Educational Program

|                           | Educational Program               |  |
|---------------------------|-----------------------------------|--|
| Variable                  | Structure/Process                 | <i>Competency-based</i>                            |
| Driving force: curriculum | Content-knowledge acquisition     | <i>Outcome-knowledge application</i>               |
| Driving force: process    | Teacher                           | <i>Learner</i>                                     |
| Path of learning          | Hierarchical<br>(Teacher→student) | <i>Non-hierarchical<br/>(Teacher↔student)</i>      |
| Responsibility: content   | Teacher                           | <i>Student and Teacher</i>                         |
| Goal of educ. encounter   | Knowledge acquisition             | <i>Knowledge application</i>                       |
| Typical assessment tool   | Single subject measure            | <i>Multiple objective measures</i>                 |
| Assessment tool           | Proxy                             | <i>Authentic (mimics real tasks of profession)</i> |
| Setting for evaluation    | Removed (gestalt)                 | <i>Direct observation</i>                          |
| Evaluation                | Norm-referenced                   | <i>Criterion-referenced</i>                        |
| Timing of assessment      | Emphasis on summative             | <i>Emphasis on formative</i>                       |
| Program completion        | Fixed time                        | <i>Variable time</i>                               |

Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Martin C. Shifting paradigms: from Flexner to competencies. Acad Med. 2002;77(5):361-7.

# AHRQ Report 2010

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## ▶ **Quality is improving slowly**

- ▶ Across all **179** measures of health care quality tracked in the reports, almost two-thirds showed improvement. However, overall median rate of change was only **2.3%** per year;; the median rate of change in outcomes was only **1.6%** per year.

## ▶ **Disparities remain persistent**

- ▶ Fewer than **20%** of disparities faced by Blacks, American Indians and Alaska Natives, Hispanics, and poor people showed evidence of narrowing.



# Arnie Milstein 2010

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- ▶ *Since physician graduates of American medical education organizations typically lead or heavily influence US health care delivery, one source of indirect, broad, outcome-based evidence [of the effectiveness of the medical education enterprise] is the overall performance of the US health care system. The width of the performance gaps on the aims of effectiveness, safety and efficiency understandably reduces society's confidence that physicians are adequately honoring their Hippocratic promises.*

**- Milstein A. *Trailing Winds and Personal Risk Tolerance: An External Perspective on the Opportunity for Medical Educators to Fulfill Their Social Contract Permanently.* Presented at ABIMF Summer Forum, August 2010**

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# What's New: Substantial External Pressure

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- ▶ **Institute of Medicine (2008)**
  - ▶ Resident Duty Hours: Enhancing Sleep, Supervision, and Safety
  - ▶ Retooling for an Aging America
- ▶ **MedPAC**
  - ▶ June 2009 Report
  - ▶ October 2009 Hearing
  - ▶ ***June 2010 Report***
- ▶ **Congress (2011)**
  - ▶ Reductions in GME funding



# MedPAC June 2010

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- ▶ The Congress should authorize the Secretary to change Medicare's funding of graduate medical education (GME) to support the workforce skills needed in a delivery system that reduces cost growth while maintaining or improving quality.
- ▶ The indirect medical education (IME) payments above the empirically justified amount should be removed from the IME adjustment and that sum would be used to fund the new performance-based GME program.



# *Educating Physicians<sup>1</sup>*

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- ▶ *“Can medical education’s illustrious past serve as an adequate guide to a future of excellence? Flexner asserted that scientific inquiry and discovery, not past traditions and practices, should point the way to the future in both medicine and medical education...”*

*- <sup>1</sup>Cooke M, Irby DM and O’Brien BC.  
Educating Physicians. 2010.*



# *Educating Physicians*

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- ▶ *“...Medical training is inflexible, excessively long, and not learner-centered. We found that clinical education is overly focused on inpatient clinical experience, supervised by clinical faculty who have less and less time to teach and who have ceded much of their teaching responsibilities to residents, and situated in hospitals with marginal capacity to support their teaching mission.”*



# Recommendations

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- ▶ Standardize learning *outcomes* through assessment of competencies
- ▶ Individualize learning *process* within and across levels
- ▶ Incorporate interprofessional education and teamwork into curriculum
- ▶ Prepare learners to attain both routine and adaptive forms of expertise



# Recommendations (Cont.)

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- ▶ Engage learners in initiatives focused on population health, quality improvement and patient safety
- ▶ Locate clinical education in settings where quality patient care is delivered, not just in university teaching hospitals
- ▶ Address the underlying messages expressed in the hidden curriculum



## Francisco Varela (1946-2001)

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- ▶ *“The blind spot of contemporary science (and education) is experience”*
- ▶ How can we hold the paradox of learning from past experience and the need to let go?



# Setting the Stage

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- ▶ The 6 ACGME competencies are introduced at the cusp of the millennium
- ▶ Medical educators are invited to develop best practices around teaching and assessing the competencies
- ▶ A decade later there is still confusion & controversy



# Setting the Stage (continued)

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- ▶ **Difficulty teaching the competencies**
  - ▶ Faculty don't understand them (PBLI, SBP)
  - ▶ Often treated as an “add-on”
  
- ▶ **Even more difficulty assessing them**
  - ▶ Domains are broad and diverse
  - ▶ Reduce them to checklists of behaviors
  - ▶ Checklists often focus on isolated behaviors
  - ▶ Can the learner integrate the behaviors to care for patients?



# Where Do We Go From Here?

- Surveying the Landscape in Medical Education

# Innovations From the Field

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- ▶ Milestone Project
- ▶ “Entrustable Professional Activities”
- ▶ Assessment Strategies
- ▶ New Accreditation System



# The First Step in Advancing CBME: The Milestone Project

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- ▶ Initiated by ACGME in partnership with ABMS
- ▶ Grassroots effort by each specialty community
- ▶ Charge
  - ▶ Define and refine the 6 ACGME competencies by specialty
  - ▶ Set performance standards at each level of training
  - ▶ Identify and /or develop national tools to assess performance



# Pediatrics Approach to Milestones

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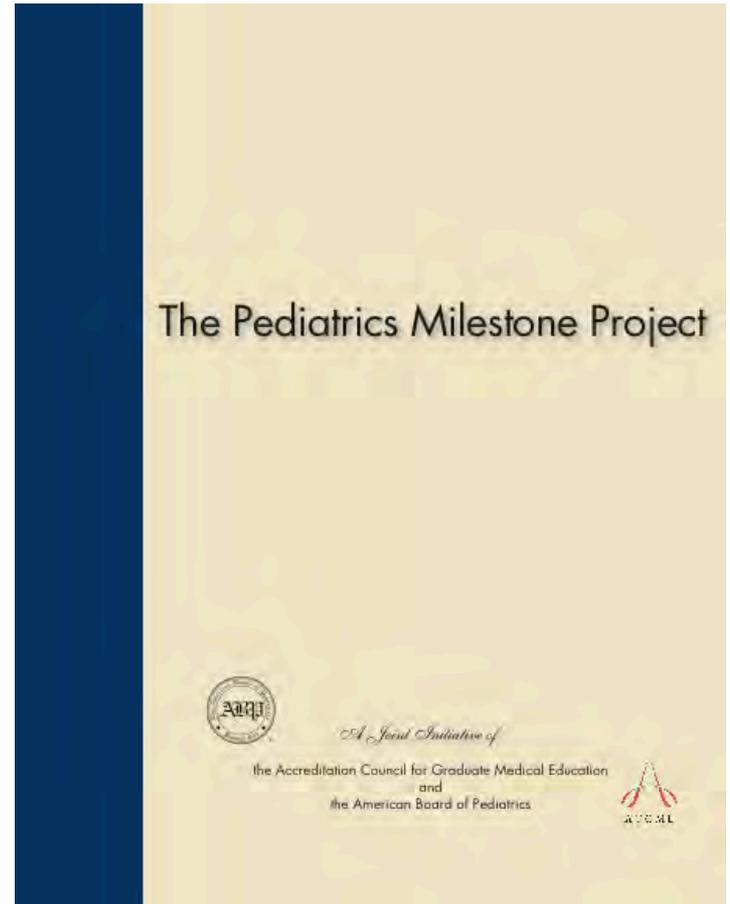
- ▶ Review primary source literature
- ▶ Synthesize literature and references in background
- ▶ Develop 4-5 levels of performance or milestones per competency



# Pediatrics Approach to Milestones (cont.)

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Create milestones that represent a **sequence of narrative descriptions of observable behaviors at advancing levels of development** across the **continuum** of education, training and practice



# The Continuum: UME, GME, & MOC

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**Now...**



**“Your Silo or mine?”**

**Future...**

- ▶ The milestones reflect the developmental continuum from medical school through residency and culminate with the master practitioner



# The Pediatrics Approach

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- ▶ The ACGME competencies are necessary but not sufficient
- ▶ Personal and Professional Development
  - Engage in help-seeking behaviors
  - Healthy response to stress
  - Manage conflict between personal and professional responsibilities
  - Practice flexibility and maturity in response to change
  - Demonstrate trustworthiness
  - Demonstrate leadership that ultimately improves patient care
  - Demonstrate confidence
  - Manage Uncertainty



# Example From Patient Care Domain

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- ▶ **Competency:**
  - ▶ Making informed diagnostic and therapeutic decisions that result in optimal judgment



## “First level”

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- ▶ Recalls and presents clinical facts in the history and physical in the order they were elicited without filtering, reorganization or synthesis
  - ▶ Non-prioritized list of all diagnostic considerations rather than the development of working diagnostic considerations
  - ▶ Difficulty developing a therapeutic plan
  - ▶ **Summary: Regurgitates history and physical and then looks to supervisor for synthesis and plan.**
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## “Second Level”

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- ▶ Focuses on features of the clinical presentation, making pattern recognition elusive and leading to a continual search for new diagnostic possibilities.
  - ▶ Often reorganizes clinical facts in the history and physical exam to help decide on clarifying tests to order rather than to develop and prioritize a differential.
  - ▶ This often results in a myriad of tests and therapies and unclear management plans since there is no unifying diagnosis
  - ▶ **Summary: Jumps from information gathering to broad evaluation without focused differential**
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## “Third Level”

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- ▶ Abstracts and reorganizes elicited clinical findings in memory, using semantic qualifiers to compare and contrast the diagnoses being considered when presenting or discussing the case.
  - ▶ Well synthesized and organized assessment of the focused differential diagnosis and management plan
  - ▶ **Summary: Synthesizes information to allow a working diagnosis and differential diagnosis that informs the evaluation and management plan**
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## “Fourth Level”

- ▶ Reorganized and stored clinical information leads to early directed diagnostic hypothesis testing with subsequent history, physical, and tests used to confirm this initial schema
- ▶ Able to identify discriminating features between similar patients and avoid premature closure
- ▶ Therapies are focused and based on a unifying diagnosis, resulting in an effective and efficient diagnostic work-up and plan
- ▶ **Summary: Early directed hypothesis testing and ability to discriminate between features leads to unifying diagnosis, and effective/efficient work-up and plan**

# The Next Step in Advancing CBME

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- ▶ Milestones give us a learning roadmap
- ▶ But the roadmap must be grounded in a clinical context to make it meaningful



# The Milestones as “Building Blocks” in the Context of Clinical Experience: Introducing EPAs\*

\*ten Cate O, Scheele F. Viewpoint: Competency-based postgraduate training: Can we bridge the gap between theory and clinical practice? *Academic Medicine*. Jun 2007;82(6):542-547



# Competencies in Context: EPAs

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- ▶ Entrustable Professional Activities
  - ▶ Professional life activities that define the specialty
  - ▶ Ground the competencies in a physician's everyday work
  - ▶ Activities lead to some outcome that can be observed
  - ▶ Complexity of the activities requires an integration of knowledge, skills and attitudes across competency domains
  - ▶ Example: Improve care for a population of patients

# Why EPAs?

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- ▶ They align what we assess with what we do
- ▶ They make sense to faculty, trainees, and the public
- ▶ Add a valuable dimension to assessment-
  - ▶ ENTRUSTMENT



# Entrustment Decisions

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- ▶ We make them every day when we work clinically with learners
- ▶ EPAs provide a mechanism for formalizing this process
  - ▶ Direct observation of pre-determined EPAs not random aspects of performance
  - ▶ Degree of supervision determines the decision to entrust
  - ▶ Entrustment is awarded when the assessor determines the learner can perform the EPA without direct supervision



# Levels of Supervision

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- Routine - preplanned and independent of the learner
- Reactive – supervisor escalates supervision in response to learner (and patient) needs
- Direct – supervisor provides “hands-on” care
- Backstage- double checking

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Kennedy TTJ, Lingard L, Baker GR, Kitchen L, Regehr G. Clinical oversight: conceptualizing the relationship between supervision and safety. *J Gen Int Med* 2007;22:1080-1085.



# Entrustment and Competence

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- ▶ Entrustment occurs when direct supervision is no longer needed
- ▶ Entrustment infers competence
- ▶ Judicious decisions about which professional activities are entrustable at completion of residency
- ▶ Opens the door for structured learning after residency as part of MOC



# The Good Doctor: Putting It All Together

**EPAs**

**DOMAINS OF  
COMPETENCE**

**COMPETENCIES**

**MILESTONES**

**The Good Doctor:  
PUTTING IT ALL TOGETHER**

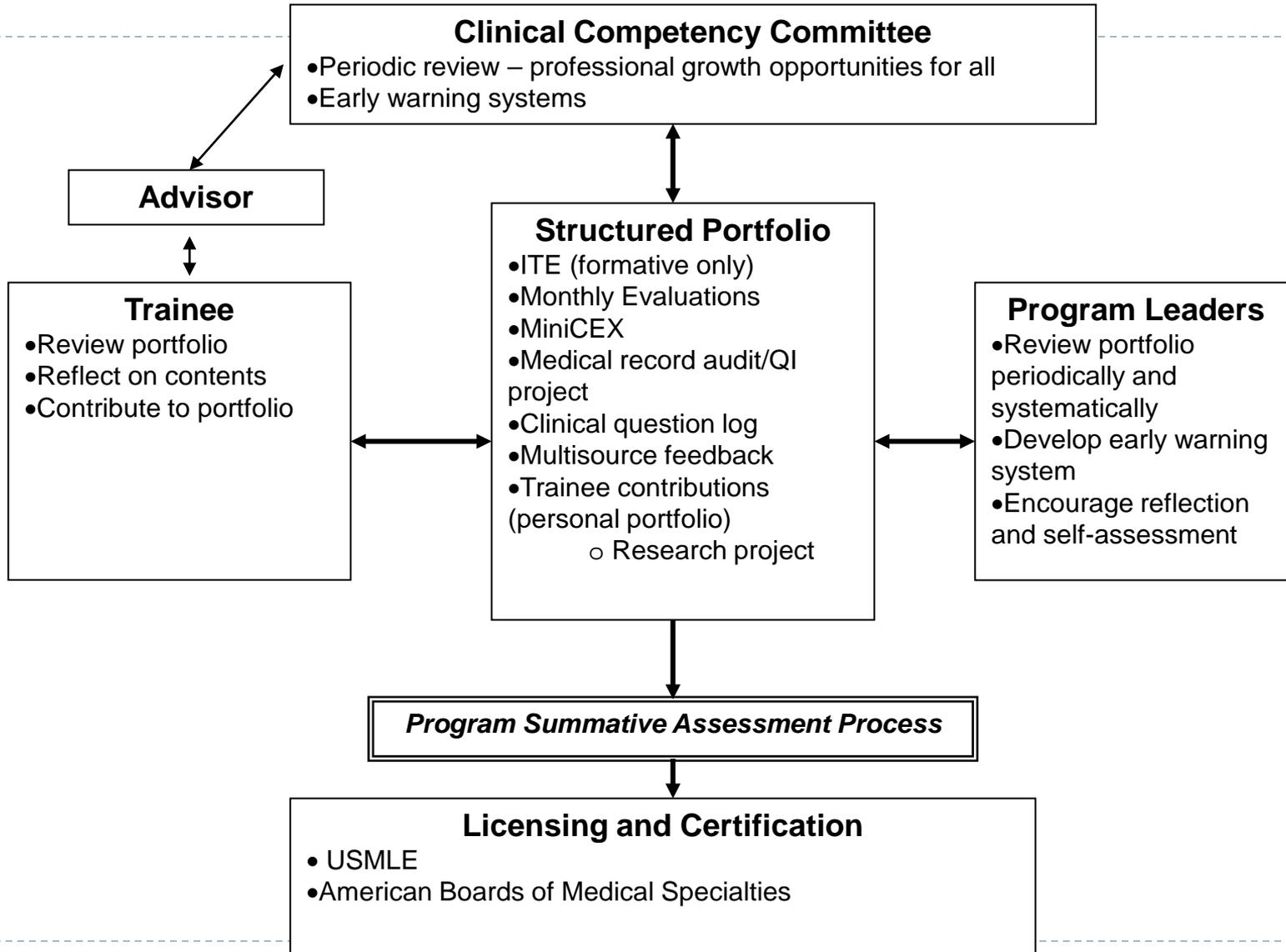
# Assessment Challenges:

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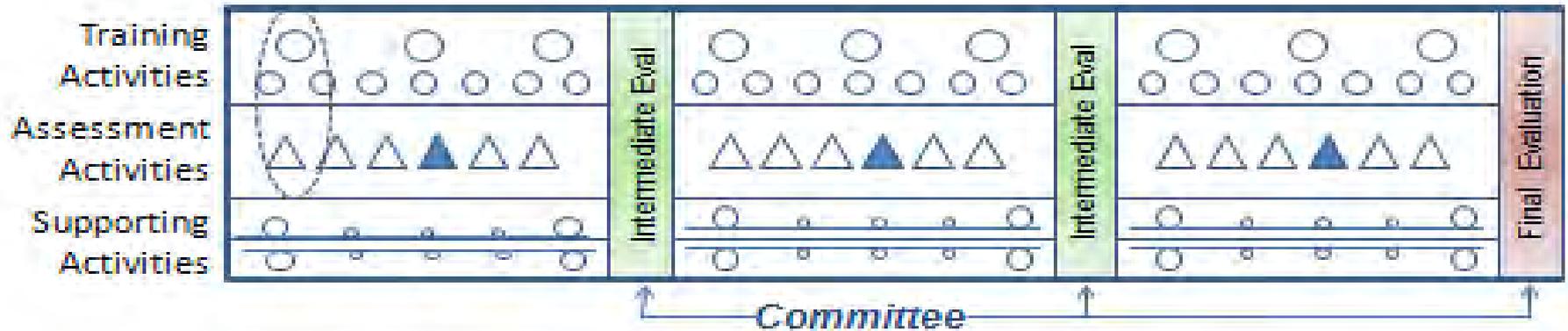
- ▶ CBME requires robust, multi-faceted assessment *systems*
  - ▶ No single assessment method “sufficient”
  - ▶ Trained faculty essential
  - ▶ Cultural change paramount
- ▶ Programs will need appropriate *structural* elements with effective programmatic assessment *processes* to produce *educational and clinical outcomes*



# Assessment During Training: Structural Components



# Model For Programmatic Assessment (with permission from CPM van der Vleuten)



- = learning task
- = learning artifact
- △ = single assessment data-point
- ▲ = single certification data point for mastery tasks
- = learner reflection and planning
- = social interaction around reflection (supervision)
- = learning task being an assessment task also

Time →

# Educational Outcomes for Patients

|                          | Resident Clinics (%) | Practicing Physicians (%) |
|--------------------------|----------------------|---------------------------|
| <i>Documentation of:</i> |                      |                           |
| Gait evaluation          | 28                   | 74**                      |
| Balance evaluation       | 22                   | 66**                      |
| Medical surrogate        | 28                   | 54**                      |
| End-of-life preferences  | 29.5                 | 49**                      |
| Vision testing done      | 40                   | 65**                      |
| Hearing assessment       | 23                   | 40*                       |
| <i>Screening for:</i>    |                      |                           |
| Falls risk               | 19                   | 61**                      |
| Cognitive impairment     | 18                   | 52**                      |
| Depression               | 34                   | 63**                      |
| * p < .01, ** p < .001   |                      |                           |

Lynn LA, Hess BJ, Conforti LN, Lipner RS, Holmboe ES. The Relationship Between Clinic Systems and Quality of Care for Older Adults in Residency Clinics and in Physician Practices. *Acad Med.* 2009; 84(12): 1732-1740

# The Next Accreditation System

## Implementing the Milestones

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL REPORT

### **The Next GME Accreditation System — Rationale and Benefits**

Thomas J. Nasca, M.D., M.A.C.P., Ingrid Philibert, Ph.D., M.B.A., Timothy Brigham, Ph.D., M.Div.,  
and Timothy C. Flynn, M.D.



# Principles of NAS:

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- ▶ Enable GME enterprise to meet responsibilities to the public
- ▶ Focus shifts from process to outcomes
- ▶ Developmental for both residents and programs
- ▶ Foster innovation
- ▶ Built on model of continuous quality improvement



Thank you

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Questions?

