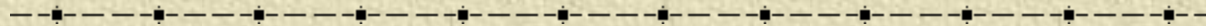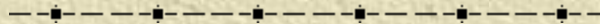# Milestones and Entrustment:
Next steps for competency-based medical education

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APPD Forum for

Directors of Small Programs

Acknowledgements:

- **Dr. Carol Carraccio**
- **Dr. Robert Englander**
- **Dr. Joseph Gilhooley**
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…and the many others from whose ideas and work I have borrowed shamelessly.

Medical Education

* **"Medical education seems to be in a perpetual state of unrest."**

Cooke et al. American Medical Education: 100 Years After the Flexner Report. NEJM 2006; 355:1339-1344.

* **Good news: Progress has been made.**

* **More news: We are not there yet**

Goal

- **Successfully incorporate milestones and entrustment into assessment**
  - Meet new regulatory expectations
  - Improve Competency-based Medical Education (CBME)

Objectives

* **Perspective: history**

* **Orientation: current state**

* **Challenges to implementation of the next steps:**
  * **Curricular development**
  * **Program and faculty development**
  * **Building across the continuum**
  * **Scholarly examination of solutions**
  * **Resources**

THE QUICK FIX…

THE REAL FIX…

BACKGROUND: FLEXNER

- **To the public:**
  - Mediocre quality
  - Profit motives
  - Inadequate curricula
  - Nonscientific approach
- **To medicine:**
  - Formal analytic reasoning
  - Balance of research and patient care

BACKGROUND: FLEXNER

- **Set in motion basis for standards**
- **Requirements for accreditation**
- **Requirements for certification**
- **GME to replace apprenticeship**
  - **Still linked only to service**
  - **Still assessed by "sniff test"**

Competence in the 1980s

- **Goals and objectives**
- **Global assessment of performance**
- **Confirming competence by:**
  - **Program documentation**
  - **Global assessments**
  - **Ill-defined requirements for observation**
  - **Attestation for the ABP**
  - **Certification by Exam**

Limitations

- **Almost exclusively Global assessment**
  - Lack of specific criteria for success
  - Limited authenticity/direct observation
  - Lack of Faculty development/change
  - Still a "sniff test"

Outcomes Project

✳ **David Leach:**

- ◆ **Called for true competency-based GME**
- ◆ **Authentic and specific determinants in assessment**

"Things that we wish to assess and improve upon, we must measure"

Outcomes Project

- **ACGME and ABMS**
- **Identified 6 areas of general competence**
- **Relevant areas of "subcompetence"**
- **Taught and assessed for accreditation and certification**
- **Direct observation**

Educational Transformation

- **Outcomes vs. Process**
- **Learner centered vs. program centered**
- **Competency-based**
- **Observed directly**
- **Reliable and valid assessment tools**

Proposed Strategies

* **Revise curriculum:**
  * **Outcomes in terms of competence**
  * **Activities to achieve outcomes**
  * **Competency-based assessment of activities**
* **Conduct educational research:**
  * **Rigorous investigation**
  * **Evidence that competence is linked to outcomes desired**

Requirements for Evaluation

Direct observation

- Structured skills and knowledge assessments
- Specific criteria for competence
- Reliably by different evaluators
- Relevant, fair and setting specific

Requirements for Evaluation

❋ **Documentation:**

◆ **Linked to observed or reviewed performance**

◆ **Interpretable**

◆ **Timely and available for review**

Assessment Process

- **Match outcomes/competence with goals**
- **Match goals with activities**
- **Match activities with assessment markers**
- **Match markers with assessment tools**

Descriptive Assessment Tools

* **Developing and reinforcing clear performance guidelines**
* **Adding behavior-based, level-specific performance descriptors**
* **Faculty development of evaluation skills**

What Has Been Achieved?

- **Curriculum defined in competency terms**
- **Set the framework for measurement**
- **More and better observed performance**

"I think you should be more explicit here in step two."
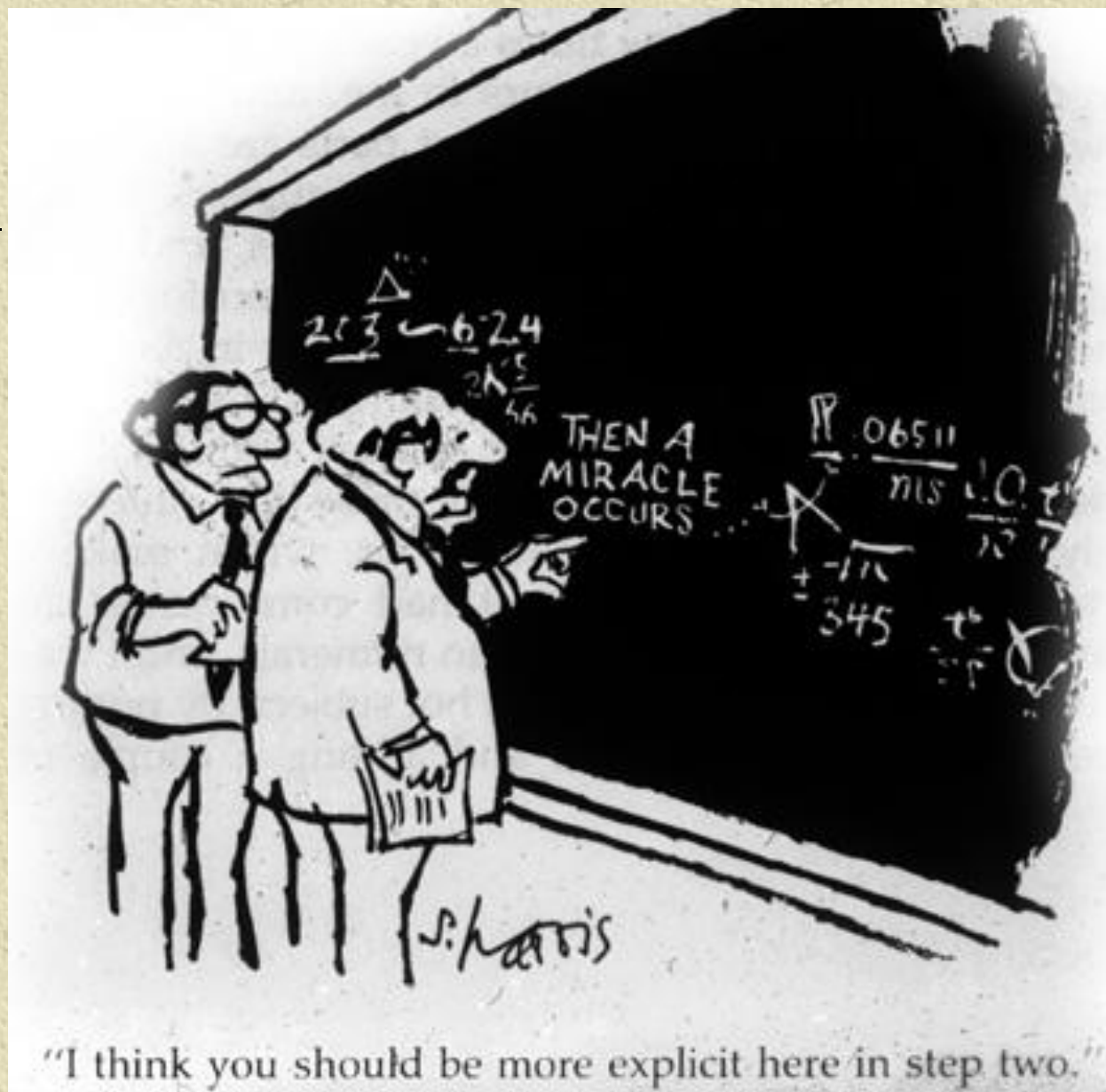
What is Still Needed?

- **Reliable and valid assessments**
- **Evidence to relate assessment to competence**
- **Relevant, specific and identifiable milestones for areas of subcompetence**
- **Performance/competence defined entrustment that relates to need for supervision and safety**

Next Steps

- **Develop relevant curricula**
- **Include reliable and valid assessments**
- **Faculty development**
- **Educational research**

Requirements for Transformation

- **Flexibility: creative redesign of program**
- **Mentoring residents and faculty in their roles and responsibilities**
- **Align health outcomes with medical education outcomes**

Challenges

- **Multiple competing new demands:**
  - **Shift to competency-based education**
  - **Shift to team implemented, patient centered care**
  - **Focus on quality and safety**
  - **Restriction in duty hours**
  - **Need for work-life balance**
- **In context of:**
  - **Scientific information explosion**
  - **Changing and business driven medical system**
  - **Shrinking resources for increasing demands**

New Strategies

- **Faculty development and support**
  - **Identify existing resources**
  - **Regularly scheduled faculty development**
  - **Time to teach in directly observed, competency-based way**
- **Develop partnerships among stakeholders**
  - **Address escalating needs**
  - **Manage and share scarce resources**

Particularly Needed

- **Educational research:**
  - **Rigorous investigation**
  - **Demonstrate performance relates to outcomes**
 - **Link educational outcomes to patient outcomes**

Lessons Learned in CBME:

- **Assessment is still the biggest challenge:**
  - ◆ **Reliability and validity**
  - ◆ **Faculty development and time**
- **Competence is best**
  - ◆ **Described in a developmental way**
  - ◆ **Assessed in a clinical context**
  - ◆ **Linked to entrustment, supervision and safety**

The Pediatric Milestones Project

* **Joint initiative of the ACGME and ABP**
* **January 2012**
* **First attempt**
* **Welcoming feedback**
* **Asking for scholarly investigation of use**

Dynamic Understanding
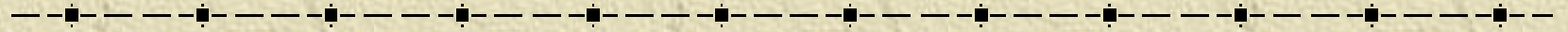
- **Competence as the point at which one is ready to practice independently is a static view**
- **Competence is dynamic and content and context specific**
- **Context fits well with Milestones and "entrustable professional activities" (EPAs)**

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"Entrustable Professional Activities" (EPAs)

- **Professional life activities that define a specialty**
- **Place competencies in the everyday work of the physician**
- **Activities lead to some observable output or outcome**
- **Complexity of the activities requires an integration of knowledge, skills and attitudes across competence domains**
- **Specific number for each specialty**

Sample EPA

- **Caring for a well newborn**
  - **Know maternal conditions that affect the infant**
  - **Perform a comprehensive exam to discover congenital anomalies**
  - **Apply evidence-based guidelines for newborn care**
  - **Speak to the mother using language that she understands**
  - **Demonstrate respect for the mother's cultural background and child rearing practices**
  - **Connect with the community pediatrician in transfer of care**

Sample: Curricular Milestones

Hand-over

- Aware of importance and committed
- With template, guidance and supervision-effective and efficient
- Structure is internalized, less supervision
- Mastery: troubleshoot others

Sample: Curricular EPA

✳ **Hand-over: Identify, organize and present hand-over information**

- ◆ **Knows what is important to transfer**
- ◆ **Arrives on time prepared for the hand-over**
- ◆ **Orderly, efficient and effective/safe manner**
- ◆ **Without omissions or unnecessary information**
- ◆ **Ensure seamless care from provider to provider**
- ◆ **Troubleshoot information provided to achieve the desired information transfer**

Back to the Future?

- **Similarities with Apprenticeship Model**
  - ◆ **Relationships are critical**
  - ◆ **Assessment is embedded in a clinical setting taking care of real patients**
  - ◆ **Direct observation is key**
- **Differences from Apprenticeship Model**
  - ◆ **Defined by specific elements of competence**
  - ◆ **Moved from random to deliberate curriculum**

Presumptions Moving Forward

✳ **Competence is meaningful**

♦ **In a developmental context**

♦ **In the context of clinical care**

✳ **Milestones of competence and EPAs provide this context for both teaching and assessing learners**

✳ **Entrustment is recognized by assessing the development of competence in context of care**

New Process

* **Performance linked to defined clinical activities**
* **Clinical activities linked to reliable and valid assessment**
* **Assessment linked to development of competence**
* **Development of competence linked to EPAs**
* **EPAs linked to supervision, safety and clinical care outcomes**

Relates to the NAS

* **ACGME data collection**
  * **Core set of milestones**
  * **Every six months**
* **Clinical Competence Committee**
  * **Evaluations in milestones that link to core sets**
  * **Gather data from evaluations**
  * **Determine progress and advancement**
* **Committee reviews link to defined set of EPAs for each specialty**
  * **Clusters of milestone achievements linked to entrustment**
  * **Specialty-defined EPAs linked to competence in practice**