

Implementing Milestones:

Historical Context, Competency-Based Medical Education, and Outcomes

April 2, 2012, 1:00 pm - 2:45 pm

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Goals: To understand the development and purpose of the ACGME Milestone Project, how to incorporate developmental milestones into EM residency, and effective tools for measuring achievement of milestones.

Objectives: Participants will be able to:

1. Describe the ACGME milestone project to faculty and residents.
2. Develop milestones for emergency medicine residents based on the six ACGME core competencies.
3. Create rubrics to measure desired outcomes.
4. Incorporate milestones into progressive responsibility and supervision policies.

1. HISTORICAL CONTEXT

- 1981 ACGME founded

"The Accreditation Council for Graduate Medical Education is a private, nonprofit council that evaluates and accredits residency programs in the United States. The ACGME was established from a consensus in the academic medical community for an independent accrediting organization. Its forerunner was the Liaison Committee for Graduate Medical Education, established in 1972. The mission of the ACGME is to improve health care by assessing and advancing the quality of resident physicians' education through exemplary accreditation."

www.acgme.org

- 1986 COGME formed by public law 92-463

"The Council on Graduate Medical Education (COGME) provides an ongoing assessment of physician workforce trends, training issues and financing policies, and recommends appropriate federal and private sector efforts on these issues. COGME advises and makes recommendations to the Secretary of the U.S. Department of Health and Human Services (HHS) and to the Senate Committee on Health, Education, Labor and Pensions, and the House of Representatives Committee on Energy and Commerce"

<http://www.hrsa.gov/advisorycommittees/bhpradvisory/cogme/index.html>

- 1986 Hubert and Stuart Dreyfus publish *Mind over Machine*. They describe five levels of skill acquisition: Novice, beginner, competent, proficient, expert. Skill acquisition associated with autonomy, coping with complexity, and perception of context.

<http://www.amazon.com/Mind-Over-Machine-Hubert-Dreyfus/dp/0743205510>

<http://www.sld.demon.co.uk/dreyfus.pdf>

- 1990s reports recommend change in current state of GME (COGME, Pew Health Professions Commission, AAMC, Federated Council of Internal Medicine, Association of Program Directors of Surgery, Royal College of Physicians and Surgeons of Canada).

Batalden P, Leach D, Swing S, Dreyfus H, Dreyfus S. General competencies and accreditation in graduate medical education. *Health Aff (Millwood)*. 2002;21(5):103-111

- 1994 ACGME internal review of GME process. Move to outcomes process.
- 1999 ACGME board approves 6 core competencies
- 2001-2012 ACGME core competencies outcomes project Phase I (2001-2002); Introduction, Phase II (2002-2006); Defining, Phase III (2006-2011); Integration with outcomes, Phase IV (2011-2012) Best practices.
- 2012 ACGME Next Accreditation System (NAS). Consists of milestones (5 levels (Dreyfus and Dreyfus), resident and faculty surveys.

Nasca TJ, Philibert I, Brigham T, Flynn TC. The next GME accreditation system - rationale and benefits. *N Engl J Med*. 2012

2. COMPETENCY-BASED MEDICAL EDUCATION (CBME)

- Valid and reliable assessment tools such as direct observation, formative feedback, learner self-directed assessment; involvement of learner in educational process; faculty development focused on curricular design and competency assessment.

Table 1. A comparison of the elements of structure- and process-based versus competency-based educational programs.

Variable	Educational program	
	Structure- and process-based	Competency-based
Driving force for curriculum	Content—knowledge acquisition	Outcome—knowledge acquisition
Driving force for process	Teacher	Learner
Path of learning	Hierarchical (teacher → student)	Non-hierarchical (teacher ↔ student)
Responsibility for content	Teacher	Student and teacher
Goal of educational encounter	Knowledge acquisition	Knowledge application
Typical assessment tool	Single subjective measure	Multiple objective measures ("evaluation portfolio")
Assessment tool	Proxy	Authentic (mimics real tasks of profession)
Setting for evaluation	Removed (gestalt)	"In the trenches" (direct observation)
Evaluation	Norm-referenced	Criterion-referenced
Timing of assessment	Emphasis on summative	Emphasis on formative
Program completion	Fixed time	Variable time

Reproduced with permission of the publisher from: Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Martin C. 2002. Shifting paradigms: from Flexner to competencies. *Acad Med* 77(5):361–367. p 362

Frank JR, Snell LS, Cate OT, et al. Competency-based medical education: Theory to practice. *Med Teach*. 2010;32(8):638-645

Frank JR, Mungroo R, Ahmad Y, Wang M, De Rossi S, Horsley T. Toward a definition of competency-based education in medicine: A systematic review of published definitions. *Med Teach*. 2010;32(8):631-637

3. ASSESSMENT

- Measurable and observable performance expectations; level-based with expected time frame for achievement. Includes assessment of Skills, Knowledge and Attitudes (KSA), some specialty-specific, others universal to physicians in training. Narrative anchors of behavior that demonstrate progress toward achievement of the identified benchmarks.
- Assessment is continuous; reporting occurs twice a year. Most residents should meet expectations in advance of the "deadline." Failure to meet expectations triggers further assessment and possible remediation.

Example from Internal Medicine:

APPENDIX 2.1 DEVELOPMENTAL MILESTONES FOR INTERNAL MEDICINE TRAINING—PATIENT CARE			
ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	General Evaluation Strategies
Clinical skills and reasoning <ul style="list-style-type: none"> Manage patients using clinical skills of interviewing and physical examination Demonstrate competence in the performance of procedures mandated by the ABIM 	Historical data gathering		Standardized patient Direct observation
	1. Acquire accurate and relevant history from the patient in an efficiently customized, prioritized, and hypothesis driven fashion	6	
	2. Seek and obtain appropriate, verified, and prioritized data from secondary sources (eg, family, records, pharmacy)	9	
	3. Obtain relevant historical subtleties that inform and prioritize both differential diagnoses and diagnostic plans, including sensitive, complicated, and detailed information that may not often be volunteered by the patient	18	
	4. Role model gathering subtle and reliable information from the patient for junior members of the health care team	30	

Green ML, Aagaard EM, Caverzagie KJ, et al. Charting the road to competence: Developmental milestones for internal medicine residency training. *J Grad Med Educ.* 2009;1(1):5-20

- Pediatrics: “commitment to engage in personal and professional development” (e.g., self-awareness, flexibility, trustworthiness, leadership, self-confidence, healthy response to stressors)
- Optimally done *with*, rather than *to*, the resident. Balance between deconstruction (analysis of microtasks) and reconstruction (integrated, complex performance)

Hicks PJ, Englander R, Schumacher DJ, et al. Pediatrics milestone project: Next steps toward meaningful outcomes assessment. *J Grad Med Educ.* 2010;2(4):577-584

Hicks PJ, Schumacher DJ, Benson BJ, et al. The pediatrics milestones: Conceptual framework, guiding principles, and approach to development. *J Grad Med Educ.* 2010;2(3):410-418

4. EMERGENCY MEDICINE MILESTONES

- EM-specific milestones developed and approved by ABEM BOD and RRC-EM. Working group includes: AACEM, AAEM, ABEM, ACEP, CORD, EMRA, SAEM, RRC-EM, ACGME. Alignment with existing core competencies and ABEM standards. Conceptual link to the “Physician Tasks” section of *Model of Clinical Practice of Emergency Medicine*.
- Includes cognitive and behavioral performance standards, including procedure-based skills. Tightly coincides with KSAs developed by ABEM for Initial Certification.
 - Domains – 6 Core Competencies, plus subcompetencies within each domain; narrative descriptions of essential KSAs.
 - 5 Levels of Proficiency – Performance along a continuum:

Entry level→ Expected performance at medical school graduation→ Experienced practitioner

- Validity and Feasibility Studies:
ABEM in conjunction with the ACGME will be conducting a validity study that will look at each of the five levels of proficiency within each Milestone, and whether a large survey group matches the Milestone Working Group's assignment levels. A second feasibility study will look at the degree of ease/difficulty in the implementation of the Milestone Accreditation System.
- Implementation – The Emergency Medicine Milestone Working Group met March 12, 2012, for a one-day meeting on Assessment related to the Milestones. Assessment will be the single most important factor in the success of the NAS as it pertains to EM. This represents a huge potential involvement by CORD in the development of one or more assessment tools based on accepted methods of evaluation, such as direct observation, simulation, chart review, etc.

5. EM MILESTONES: Approved January 2012 by ABEM BOD, and February 2012 by RRC-EM. A total of 24 milestones, with 6 procedure-based.

- PC1- Emergency Stabilization
- PC2- Performance of Focused History and Physical Exam
- PC3- Diagnostic Studies
- PC4- Diagnosis
- PC5- Pharmacotherapy
- PC6- Observation and Reassessment
- PC7- Disposition
- PC8- Multi-tasking (Task-switching)
- PC9- General Approach to Procedures
- PC10- Airway Management
- PC11- Anesthesia and Acute Pain Management
- PC12- Other Diagnostic and Therapeutic Procedures: Ultrasound (Diagnostic/Procedural)
- PC13- Other Diagnostic and Therapeutic Procedures: Wounds Management
- PC14- Other Diagnostic and Therapeutic Procedures: Vascular Access
- MK- Medical Knowledge
- PROF1- Professional values
- PROF2- Accountability
- ICS1- Patient Centered Communication
- ICS2- Team Management
- PBL11- Teaching
- PBL12- Practice Based Performance Improvement
- SBP1- Patient Safety
- SBP2- Systems-based Management

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