

Course-Level Contributions Toward EPA Implementation

Matt Henry, PhD¹ & Leslie Wimsatt, PhD² • Physiology & Pharmacology¹, Academic Affairs² • Des Moines University - College of Osteopathic Medicine (DMU-COM)

Institutional Goals

- Develop longitudinal EPA-based learning threads
- Support student knowledge/skill retention
- Improve value of feedback
- Balance formative vs. summative feedback

Project Overview

Background/context

- At DMU-COM, parallel use of a “top down” and “bottom up” approach to EPA development and assessment
 - Institution level - foundational work initiated to develop key processes, structures and inventories
 - Course level - assessment piloted to explore measurement of EPA building blocks (knowledge, skills, attitudes, behaviors)

Project focus

- To explore the potential use of course-level knowledge assessments for tracking student progress toward EPA knowledge acquisition
 - Targeted measurement of functional EPA components
 - Feedback to students on specific EPA learning components
- “Bottom up” pilot within a Year 2, 3-credit GI systems course

Core components

1. Course objectives written to support performance-based outcomes
2. Bloom’s taxonomy used to guide review of knowledge acquisition across several domains – factual, conceptual, procedural and metacognitive¹
3. Assessment items linked to course objectives
4. Competency mapping leveraged to link competencies with core EPA functions^{2,3}

Concept example³

- **EPA 3 states** - Incoming residents can “recommend and interpret common diagnostic and screening tests.”
- **Related function** - Ability to “interpret the results of basic and diagnostic studies (both lab and imaging); know common lab values.”
- **Related competencies** - Patient Care, Knowledge for Practice.

Key Resources

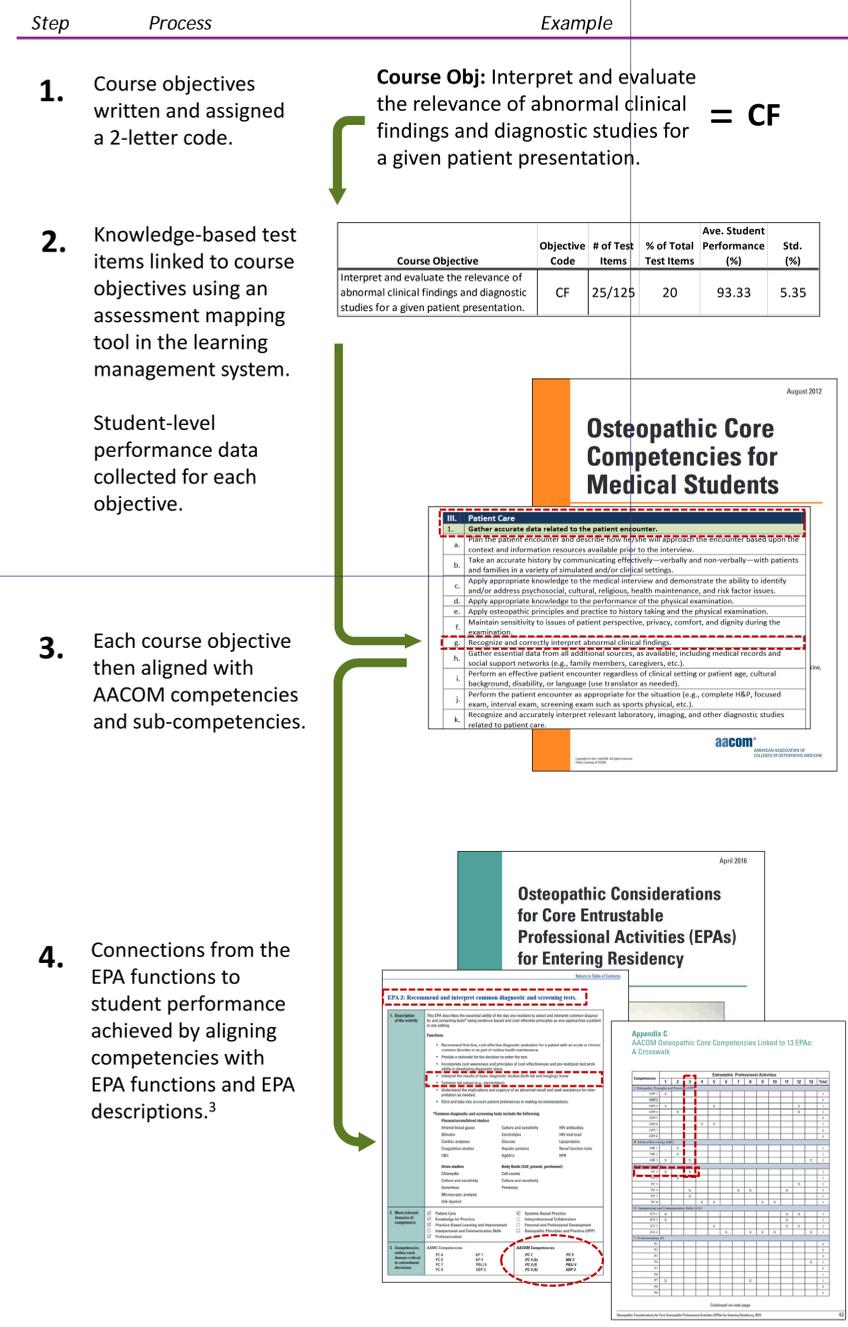
¹ Englander R, Carraccio, C. Domain of Competence: Medical Knowledge. Academic Pediatrics 2014; 14; S36-S37.

² American Association of Colleges of Osteopathic Medicine (AACOM). Osteopathic Core Competencies for Medical Students. Chevy Chase, MD: AACOM; August 2012.

³ American Association of Colleges of Osteopathic Medicine (AACOM). Osteopathic considerations for core Entrustable Professional Activities (EPAs) for entering residency. Chevy Chase, MD: AACOM; April 2016.

Mapping Methods

The mapping process involved redefining course level objectives around physician tasks, tagging assessment items with course level objectives, and mapping objectives to AACOM sub-competencies and competencies.² A final (key) step established the competency and EPA linkages³ and the alignment between assessment data and the EPAs.



Learning Outcomes

Table 1. Sample approach to tracking student progress toward EPA readiness by aligning student course performance with AACOM competencies and EPAs. Competencies that align most closely with EPA functions are noted by (*).

EPA	EPA Function	Core Competency ID	Course Objective	Objective Code	# of Test Items	% of Total Test Items	Avg. Student Performance Level (%)	(SD)
EPA 2: Prioritize a differential diagnosis following a clinical encounter.	EPA 2 Function: Integrate the scientific foundations of medicine with clinical reasoning skills to develop a differential diagnosis and a working diagnosis.	II.1.b* II.3.a	Integrate basic biomedical science with clinical science principles related to patient presentation in the area of digestive and metabolic diseases. (Basic Science) AND Integrate scientific concepts when evaluating, diagnosing and managing clinical patient presentations. (Basic Science)	BS	29/125	23	86.16	8.09
		I.2.a I.2.b	Integrate OMT as a method of improving the anatomic and physiologic functioning of the patient both as a stand-alone treatment and as a component of a treatment plan. (Osteopathic Medicine) AND Explain how the biomedical sciences; such as functional anatomy, physiology, biochemistry, histology, pathology, and pharmacology, supports the appropriate application of osteopathic principles and OMT. (Osteopathic Medicine)	OM	3/125	2	91.17	15.74
EPA 2: Prioritize a differential diagnosis following a clinical encounter.	EPA 2 Function: Integrate the scientific foundations of medicine with clinical reasoning skills to develop a differential diagnosis and a working diagnosis.	I.4.b*	Determine the key history and physical examination findings pertinent to the differential diagnosis. (History & Physical)	HP	14/125	11	90.67	9.01
EPA 1: Gather a history and perform a physical examination.	EPA 1 Function: Identify pertinent history elements in common presenting situations, symptoms, complaints, and disease states (acute and chronic).	II.3.g*	Attribute risk factors to the development and presentation of digestive and metabolic diseases. (Risk Factors)	RF	11/125	9	89.66	8.39
EPA 3: Recommend and interpret common diagnostic and screening tests.	EPA 3 Function: Interpret the results of basic diagnostic studies (both lab and imaging); know common lab values (e.g., electrolytes).	III.1.g* III.1.k*	Interpret and evaluate the relevance of abnormal clinical findings and diagnostic studies for a given patient presentation. (Clinical Findings)	CF	25/125	20	93.33	5.35
EPA 7: Form clinical questions and retrieve evidence to advance patient care.	EPA 7 Function: Demonstrate basic awareness and early skills in assessing applicability/generalizability of evidence and published studies to specific patients.	VI.5.d*	Use public health surveillance and vital statistics to distinguish between different digestive and metabolic diseases. (Public Health)	PH	1/125	<1	88.58	31.87
EPA 2: Prioritize a differential diagnosis following a clinical encounter.	EPA 2 Function: Integrate the scientific foundations of medicine with clinical reasoning skills to develop a differential diagnosis and a working diagnosis.	I.4.g*	Generate a differential diagnosis based on findings from the history and physical examination of the patient. (Differential Diagnosis)	DD	24/125	19	90.28	7.08
		III.4.d III.4.e	Design a management plan for a patient that includes the appropriate therapeutic procedures, surgical procedures, pharmacotherapy, and/or OMM. (Management Plan)	MP	18/125	14	84.47	10.01

Conclusions

LESSONS LEARNED	CHALLENGES	FUTURE DIRECTIONS
An opportunity exists for traditional didactic courses to support broader college-wide monitoring of student progress toward EPA readiness.	A knowledge-based assessment format is limiting, particularly with multiple choice questions.	What other types of assessments are needed during traditional didactic course work to assess building toward EPAs?
	The learning management system allowed for only one “tag” to an assessment item, thus limiting a test item to one course objective.	What is the role for courses/academic departments/faculty in the collection of EPA data?
	Data collection will become more complex as the pilot project expands to additional courses.	
AACOM competency and EPA document guides provide an excellent framework for mapping and aligning course content with competencies and EPAs.	AACOM EPA alignment schemes are broader in scope and do not distinguish between sub-competencies, this may present challenges when aligning course level objectives with EPAs.	Are the linkages and alignments from knowledge-based assessments to EPAs appropriate?
	There is potential for inconsistency in interpretation of the alignment between objectives and competencies.	Is the cross-walking process being applied appropriately to meet project goals?

Acknowledgments

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