

KEEPING PACE WITH THE ACGME OUTCOME PROJECT: BUILDING A COMPETENCY-BASED CURRICULUM

CHAPTER OVERVIEW:

- Define the program’s critical learning objectives.
- Develop learning objectives for each rotation, based on the program’s critical learning objectives.
- Link teaching, learning, and assessment methods to each learning objective in each rotation.

The Accreditation Council for Graduate Medical Education (ACGME) Outcome Project began in September 1997. ACGME announced a shift in the focus of residency accreditation from structure and process to educational outcomes. The Outcome Project entered its third phase in July 2006 with the goal of “full integration of the competencies and their assessment with learning and clinical care” (1). ACGME recommends a number of steps for residency programs to implement Outcome Project principles, which include:

- » Develop learning outcomes and objectives that reflect the general competencies.
- » Align the program’s current assessment procedures with competency-based learning objectives and principles of sound evaluation practice (2).

This chapter presents a structured approach to building a foundation for competency implementation through development of a competency-based curriculum. This curriculum must incorporate learning objectives and teaching, learning, and assessment methods. This approach is presented in 3 steps:

1. Define the program’s critical learning objectives.
2. Develop learning objectives for each rotation, based on the program’s critical learning objectives.
3. Link teaching, learning, and assessment methods to each learning objective in each rotation.

STEP 1: DEFINE CRITICAL LEARNING OBJECTIVES

The importance of this step cannot be overemphasized. While the core competencies can

act as an organizing principle, they cannot replace locally developed learning objectives reflecting the unique core values of the program and its learning environment. These locally developed objectives help define the program’s mission and philosophy, and provide a rallying point for program leadership and for residents. In addition, the existence of critical learning objectives greatly simplifies the process of developing explicit learning objectives for each rotation.

Critical learning objectives can be defined through the following process:

- » Identify a group of faculty members and residents to develop critical learning objectives. These individuals must be deeply invested in the program and must understand its traditions and values.
- » Ask each individual to devise a list of 10 to 15 learning objectives most important to the program.
- » Meet as a group to compare lists and define a single list of critical learning objectives.
- » Assign each critical learning objective to a competency using the core competency definition that fits best.

As this process goes forward, emphasize building an evolving document that can change as the program continues to develop. To force the group to decide what is really critical, impose some limits, such as assigning no more than 4 critical learning objectives per competency or limiting the final document to no more than 2 pages. Using this process, below is an example of a critical learning objective for each competency.

Patient Care

Prior to completing the program, each resident will be able to:

- » Perform an efficient and accurate physical examination incorporating all elements appropriate to the patient's clinical needs and interpret physical findings using the principles of evidence-based physical diagnosis.

Medical Knowledge

Prior to completing the program, each resident will be able to:

- » Know and apply current best practice guidelines for diagnosis and treatment of common inpatient and outpatient conditions.

Practice-Based Learning and Improvement

Prior to completing the program, each resident will be able to:

- » Understand and apply principles of quality improvement through participation in systematic efforts to improve patient care and education in the residency program.

Interpersonal and Communication Skills

Prior to completing the program, each resident will be able to:

- » Enthusiastically and effectively help other clinicians learn by using a variety of teaching techniques.

Professionalism

Prior to completing the program, each resident will be able to:

- » Demonstrate respect, compassion, integrity, and altruism in relationships with patients, families, and colleagues in all health professions.

Systems-Based Practice

Prior to completing the program, each resident will be able to:

- » Lead an inpatient team: conduct daily rounds, prioritize and assign tasks, monitor efficient completion of responsibilities by all team members,

and mobilize all necessary services and resources to meet the needs of the team's patients.

The complete version of the University of Rochester School of Medicine and Dentistry Department of Medicine critical learning objectives is available on the Alliance for Academic Internal Medicine website (3).

STEP 2: DEVELOP ROTATIONAL LEARNING OBJECTIVES BASED ON THE CRITICAL LEARNING OBJECTIVES

Each rotation director should be provided with a copy of the program's critical learning objectives and asked to develop learning objectives for the rotation. For rotations in which residents at different levels participate, objectives for each level of learner must be developed. As with the critical learning objectives, limiting the number of rotation learning objectives will force rotation directors to decide what is most important and result in a concise document useful to residents when they begin the rotation. Some rotations may not have learning objectives for all 6 competencies.

Two examples of patient care learning objectives for a general internal medicine inpatient floor rotation follow:

- » Prior to completing post-graduate year (PGY)-1, each resident will perform an efficient and accurate physical examination incorporating all elements appropriate to the clinical needs of general medicine inpatients.
- » Prior to completing PGY-2, each resident will interpret physical findings in patients on the inpatient general medicine service using the principles of evidence-based physical diagnosis.

Note that both rotation learning objectives are derived from a critical learning objective, but PGY-1s are expected only to perform an efficient and accurate physical examination, while PGY-2s are expected to display competence in evidence-based interpretation of physical findings.

For a subspecialty rotation, a similar approach can be taken. An example of a rotation learning objective for cardiology based on the same critical learning objective might be:

- » Prior to completing the cardiology rotation, each resident will perform an efficient and accurate physical examination of the cardiovascular system.

Because the critical learning objectives provide a template and starting point for the development of rotation learning objectives, the task of the rotation directors is dramatically simplified.

STEP 3: LINK TEACHING, LEARNING, AND ASSESSMENT METHODS TO EACH LEARNING OBJECTIVE IN EACH ROTATION

The final step in preparing a competency-based curriculum is to link appropriate teaching, learning, and assessment methods to each learning objective:

- » The program director decides it is important that residents learn an objective.
- » The program devises a method for residents to learn the objective.
- » The program devises a method for faculty to teach the objective.
- » The program director devises a method to measure resident progress towards learning the objective.

As each rotation director formulates learning objectives and develops teaching, learning, and assessment strategies, the rotation curriculum can be assembled into a 3-column table (**Table**).

Completing this process for every rotation in a program is a monumental task. However, the payoff

is equally immense. The result is an organized and consistently structured competency-based curriculum that provides a clear and unified educational roadmap for each rotation and for the program as a whole. This process does not have to be completed for all rotations at once. Leaders committed to outcomes-based education who understand principles of curriculum development should be asked to write their curricula first, as examples. Curriculum tables developed for these rotations can be used as templates for other rotations as the process moves forward.

RESOURCES

This chapter is not intended to be a comprehensive review of the ACGME Outcome Project or the core general competencies. For more information, please review the ACGME website for the Outcome Project (5). On the website are links to the rationale and timetable for the Outcome Project, detailed competency definitions, answers to frequently asked questions, and descriptions of innovative approaches to teaching and assessing the core competencies that have already been implemented at various institutions. Also available are a wide variety of potentially useful evaluation forms in Adobe portable document format that can be adapted for use in local programs.

While the ACGME website is designed to address the needs of all specialties, there is also information pertaining specifically to internal medicine residency program directors. In response to ACGME

TABLE

Competency-Based Curriculum for an Inpatient General Medicine Rotation		
PATIENT CARE		
Learning Objectives	Teaching/Learning Methods	Assessment Methods
Prior to completing PGY-1, each resident will perform an efficient and accurate physical examination incorporating all elements appropriate to the clinical needs of general medicine inpatients.	<ul style="list-style-type: none"> » Direct patient care activities. » Attending rounds. » Bedside teaching rounds. 	<ul style="list-style-type: none"> » Attending global evaluations. » Peer global evaluations. » Mini-Clinical Evaluation Exercise (CEX) by supervising attending. » End of PGY-1 year Objective Structured Clinical Examination (OSCE).
Prior to completing PGY-2, each resident will interpret physical findings in patients on the inpatient general medicine service using the principles of evidence-based physical diagnosis.	<ul style="list-style-type: none"> » Attending rounds. » Bedside teaching rounds. » Core readings from Evidence-Based Physical Diagnosis (4). 	<ul style="list-style-type: none"> » Presentations during bedside teaching rounds observed and evaluated by supervising attending.

endorsement of the 6 general competencies, the Association of Professors of Medicine, the Association of Program Directors in Internal Medicine (APDIM), the Association of Specialty Professors, the American Board of Internal Medicine, the American College of Physicians, and the Society of General Internal Medicine developed working definitions of the competencies for internal medicine and presented them at the 2001 APDIM Spring Meeting. In conjunction with the development of internal medicine-specific competency definitions, these internal medicine organizations have also developed a *Portfolio for Internal Medicine Residency Programs* as an aid to program directors (6). This extremely useful booklet includes the competency definitions, guidelines for evaluation, competency-based vignettes, and sample resident evaluation forms for use by program directors and faculty. Copies are available through the APDIM website (7). See also “Structured Learning Portfolios” in Section IV.

Since choosing appropriate assessment methods is a critical component of the 3rd phase of the process outlined in this chapter, program directors need to become familiar with the strengths and weaknesses of assessment tools already in use. The ACGME *Toolbox of Assessment Methods* critically reviews 13 different methods of competency assessment and discusses the pros and cons of each method (8). A table of recommended best evaluation methods for each of the competencies is also available (9). A 1998 review article by Eric S. Holmboe, MD, and Richard E. Hawkins, MD, also provides a thoughtful review of assessment methods in use in internal medicine training (10).

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