Chapter 3
Using Backward Design for Competency– Based Undergraduate Medical Education

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ABSTRACT

This chapter focuses on strategies for approaching competency-based medical education (CBME) in the undergraduate medical curriculum (UME). CBME uses national professional standards, typically set by accrediting bodies or professional organizations, to shape curricular design and assessment of learner outcomes as well as to provide clarity to the learner about the knowledge, skills, and attitudes needed for successful practice. Wiggins and McTighe's (2015) Backward Design instructional design model provides a practical structure for approaching CBME since it proposes beginning with the national standards, defining outcomes and assessment methods, and then developing curricular content. The chapter will describe the backward design model, the history of CBME in the United States, current issues with CBME, and use of an integrated curriculum to successfully implement CBME. It will culminate with a discussion of creating action plans for individual programs to align assessment and outcome measures more directly to curriculum.

INTRODUCTION

Competency-based medical education (CBME), organized around a set of national competencies and learner outcomes, has inspired a transformational shift in our conversations about what it means to educate learners in medicine (Accreditation Council Graduate Medical Education [ACGME], 2016; Carraccio, Wolfstal, Englander, Ferentz, & Martin, 2002; Carraccio and Englander, 2013; Harden,

1999). This transformational shift required medical education programs to re-examine curricular content and outcome measures used to determine whether graduates have acquired the knowledge, skills, and attitudes necessary for independent practice. During the 1990's, the transition to CBME was prompted by The Accreditation Council of Graduate Medical Education (ACGME) to improve physician training, and address the skills necessary for the practice of medicine in the 21st century. Following an extensive stakeholder review, the accrediting body identified the need to focus on educational outcomes, increase the rigor in process requirements, and the need to build a learning community across many specialties focused on implementing CBME (Bataldan, Leach, Swing 2002). All specialties were required to begin implementing CBME over the next ten years (Bataldan, Leach, Swing 2002).

The impact on curricular design and assessment measures was significant, and many programs struggled with designing curricula that leads to the desired outcomes. Competency-based outcomes, in the form of national standards, have been added to existing curriculum without determining whether the curriculum directly relates to the desired outcomes. Learners may find this approach confusing since there can be a disconnect between what they are learning and what they are expected to know or do. Competency-based standards for a profession are meant to shape curricular design and measurement of outcomes, and to provide clarity to the learner about knowledge, skills, and attitudes needed for successful practice.

Backward Design is an instructional design model that proposes instructors start with outcomes and work backward to design appropriate assessment tools and curricular content (Wiggins & McTighe, 2005). This model is used in K-12 education to align curriculum and assessment with national standards. "To begin with the end in mind means to start with a clear understanding of your destination. It means to know where you're going so that you better understand where you are now, so the steps you take are always in the right direction" (Covey, 1989, p. 98). Backward design can be applied to medical education by beginning with the national standards or competencies for medical education, defining outcomes and assessment methods, and then defining curricular content.

There are three components to the Backward Design model. The first component is 'Identify Desired Results.' This component encourages educators to define what criteria or performance standards are necessary for students to demonstrate the required knowledge and skills for independent practice. The second component is 'Determine Acceptable Evidence.' What is the evidence the learner has achieved the desired skill? This component encourages the medical educator to operationalize the learning outcomes and identify appropriate assessment methods to determine whether the learner possess the desired skill set. The third component is 'Plan Learning Experiences and Instruction' Careful planning of curricular experiences encourages educators to analyze what is "enduring knowledge" (the key concepts necessary for practice), "important to know or do" (prerequisite knowledge), and "worth being familiar with" (detail). Lastly, teaching strategies are considered. These three categories can help educators align their curriculum with key components of national standards for medical education and hone in on content that is essential for independent practice (Wiggins & McTighe, 2005).

Medical educators may find backward design a useful instructional design methodology as they begin to shift their curriculum to competency-based outcomes. It provides a framework and strategy for thinking through measurement of competency as well as for identifying key curricular content and linking it to outcomes. The net result of a curricular revision using this model is likely to result in learners having clearer expectations of what they need to learn and outcomes related to national standards.

This chapter will cover the history of CBME in the United States. A review of the backward design model, with examples of application to CBME, will be discussed. Opportunities to use this curriculum design model for curricular integration will also be discussed. The chapter will culminate with a discus-

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