The Language of Competency-Based Medical Education
At the Association of American Medical Colleges (AAMC), Competency-Based Medical Education (CBME) is a major focus across the continuum of learners, from premedical students through physicians in practice. CBME is an outcomes-based approach to the design, implementation, and evaluation of medical education programs that uses an organizing framework of competencies. The shift from the style of medical education referred to as structure/process education, originally outlined by Abraham Flexner in 1910, to a competency-based system of education requires four components:

1. Defining the competency-based outcomes
2. Identifying the outcomes: Competency Frameworks, Domains of Competence, and Competencies
3. Developing a framework for assessing competencies
4. Evaluating the CBME program continuously to see whether it is indeed producing the desired outcomes—in this case, competent physicians.

Identifying the Outcomes: Competency Frameworks, Domains of Competence, and Competencies
CBME requires a structured set of interrelated competencies organized into a competency framework. Examples of common frameworks are the ACGME/ABMS Outcomes Project1 and the CanMEDS Roles.2 The broad, distinguishable areas of competence that, in the aggregate, define the desired outcomes for a physician are called Domains of Competence within the ACGME/ABMS framework and Roles within CanMEDS.

Using the ACGME/ABMS framework as a reference, the AAMC analyzed more than 150 competency lists for health professionals and synthesized a list of competencies consisting of 58 competencies in 8 domains called the Physician Competency Reference Set, or PCRS. These competencies define the desired outcomes across the continuum of education, training, and practice. The AAMC has also defined a set of 15 core competencies for entering medical students, which are organized into four clusters: Interpersonal, Intrapersonal, Thinking and Reasoning, and Science Competency. These foundational competencies relate directly to the domains listed in the Table 1. The relationship between the Core Competences for Entering Medical Students and the Domains of Competency is depicted in Figure 1.

Defining the Performance Levels for the Competencies: Milestones
Milestones are used to report progress toward achieving expected competencies. Milestones are behavioral descriptors of performance at levels of performance along a developmental sequence, roughly corresponding to novice, advanced beginner, competent individual, proficient individual, and expert.3 In the ACGME Milestone Project for graduate medical education (GME), five milestones are generally defined for each competency in each specialty.4 The first was designed to describe a resident early in training and the last, to define either the resident graduate or a practicing physician (called an aspirational milestone). Milestones are also being used in undergraduate medical education (UME), but performance levels for practicing physicians have not yet been defined for many specialties.

Developing a Framework for Competency Assessment: Entrustable Professional Activities (EPAs)
An emerging approach to meaningfully assessing a learner’s performance is to do so through an assessment of the capability to perform a given task with increasing autonomy until the level of performance is sufficient for the task to be performed with increasing independence. This approach requires that the tasks are observable and measurable and that the levels of performance along a developmental sequence be defined. The task is then described as an EPA.

Entrustable Professional Activities (EPAs) are the essential day-to-day activities of a specialty or a profession that an individual must be able to perform at levels of performance along a developmental sequence, roughly corresponding to novice, advanced beginner, competent individual, proficient individual, and expert. These EPAs are the essential day-to-day activities of a specialty or a profession that an individual must be able to perform without direct supervision (for the transition from undergraduate to graduate medical education), or unsupervised (for the transition from graduate medical education to practice or fellowship). These tasks are observable and measurable and that the levels of performance along a developmental sequence be defined. The task is then described as an EPA.

A set of EPAs is defined for each specialty or profession as a framework for accumulating evidence of competence that is required to be or already is being done. These EPAs are the essential day-to-day activities of a specialty or a profession that an individual must be able to perform at levels of performance along a developmental sequence, roughly corresponding to novice, advanced beginner, competent individual, proficient individual, and expert. These EPAs are the essential day-to-day activities of a specialty or a profession that an individual must be able to perform without direct supervision (for the transition from undergraduate to graduate medical education), or unsupervised (for the transition from graduate medical education to practice or fellowship). These tasks are observable and measurable and that the levels of performance along a developmental sequence be defined. The task is then described as an EPA.

Table 1. Domains of Competence in the Physician Competency Reference Set

<table>
<thead>
<tr>
<th>Domain</th>
<th>Description</th>
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<tbody>
<tr>
<td>Patient Care (PR)</td>
<td>Knowledge for Practice (KP)</td>
</tr>
<tr>
<td>Practice-Based Learning and Improvement (PBLI)</td>
<td>Interpersonal Communication Skills (ICS)</td>
</tr>
<tr>
<td>System-Based Practice (SBP)</td>
<td>Professionalism (Prof)</td>
</tr>
<tr>
<td>Interprofessional Collaboration (IPC)</td>
<td>Personal and Professional Development (PPD)</td>
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Figure 1. Competency framework from pre-matriculation through career as a physician.

Table 2. Competencies within the Domain of Systems-Based Practice

<table>
<thead>
<tr>
<th>Domain</th>
<th>Description</th>
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<tbody>
<tr>
<td>Core Competencies</td>
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<td>PCRS</td>
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<tr>
<td>Milestones</td>
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<td>EPAs</td>
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Figure 2. Relationships among entrustable professional activities (EPAs), domains of competency (DoC), competencies (C), and milestones (M). The domains of competency and the competencies themselves make up the Physician Competency Reference Set (PCRS). The subscripts in Figures 2 indicate specific EPAs; Domains, Competencies, and Milestones. For example, C1, C2, C3, and C4 represent the competencies within Domain, Competency, and Milestone, respectively. These EPAs are core units of work for use in UME and GME that one can expect to be assessed on a day of one’s residency without direct supervision. Specialty-specific EPAs are in various stages of development.


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