The Accreditation Council for Graduate Medical Education’s Next Accreditation System has ushered in the era of competency-based medical education (CBME) by describing the behaviors, attributes, and performance standards for residents. The transition from a time-based to an outcomes-based system is a challenging paradigm shift and has significant systemic implications for educators. Aside from changes in program structure, reporting, and accreditation, there are monumental shifts in how faculty practice the art of teaching and assessment. Indeed, faculty development is currently the limiting factor in the implementation of CBME.1

Beyond medical knowledge expertise, faculty must refine their proficiencies in teaching and assessing all the core competencies. Moreover, faculty need to develop skills in critically observing learners on a frequent and regular basis. Additionally, they must link observations to larger and more definable professional activities while developing consistency between multiple observations of individual learners and improving inter-rater reliability. Faculty need to effectively and efficiently learn and incorporate new assessment methods and be able to probe and evaluate critical thinking and reasoning skills.

There has been little research on the ideal structure of faculty development, but real world examples can provide some direction for starting and refining programs, as there are no one-size-fits-all models. When designing a program, consider the necessary time and logistics for faculty to participate, cost and space availability, existing skill levels of the faculty, and the mechanism by which faculty will need to directly observe learners. Another variable is the regularity and frequency of faculty contact with trainees. Is there a limited group of faculty who engage with the same trainees regularly to allow for more longitudinal experiences, or do faculty have irregular and intermittent contact with trainees? Four models currently in use are described in Table 1.

**Table 1. Characteristics of Competency-based Models**

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<tr>
<th>Bolus Model</th>
<th>Recurring Model</th>
<th>Just-In-Time Model</th>
<th>Embedded Model</th>
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<tr>
<td>Large faculty retreat</td>
<td>Small individual sessions</td>
<td>Individual learning sessions</td>
<td>No extra sessions</td>
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<tr>
<td>One time only</td>
<td>Recurrent</td>
<td>Recurrent</td>
<td>Requires ongoing auditing and individual feedback to faculty</td>
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<tr>
<td>Plenary sessions with small-group breakout</td>
<td>Variable: can include didactics or small-group breakouts</td>
<td>Largely didactic, passive learning</td>
<td></td>
</tr>
<tr>
<td>In-depth and intensive course</td>
<td>Introducing new skills briefly</td>
<td>Reinforcing already learned skills</td>
<td>Ongoing teaching</td>
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The Bolus Model

This model is organized as a large, one-time-only department-wide faculty development retreat. This retreat, spanning multiple days, can occur either on site or off site. Alternatively, a smaller scale retreat can be offered to core faculty and clinical competency committee members. These sessions may be used as a train-the-trainer system, where attendees are expected to teach the rest of the faculty. Using a mix of didactic and interactive sessions, this retreat can provide in-depth exposure to CBME in a bolus format, beginning with an “Overview of Milestones” plenary followed by small-group breakout sessions. These sessions provide an intensive education on how to incorporate milestones into each rotation and how to complete evaluation forms. They can introduce new assessment tools or observation skills. These retreats provide an opportunity for standard setting among diverse faculty and create a shared
mental model for appropriate assessments of learners. For programs seeking input on how to choose milestones for assessment, these sessions can be used to meet that need. Participants can be asked to q-sort milestones based on level of learner and rotation learning objectives. 3 The intensive nature of these retreats may be ideal for faculty who do not have a strong background in the new assessment skills required of CBME. These sessions would need to be facilitated by faculty who have expertise and could require significant time, space, and financial resources that may be prohibitive for some programs.

The Recurring Model
This model is organized into shorter, more frequent sessions delivered on a recurring basis (e.g., quarterly). These sessions provide an overview of milestones, explanation of the new evaluations, review of expectations for direct observation, and time for questions. They are ideal for introducing new concepts briefly or reinforcing skills for faculty with solid foundations in CBME skills and principles. They are less time and cost intensive than retreats but still require recurrent involvement for faculty development leaders and may not provide active faculty engagement. If there is inconsistent faculty attendance, it can be difficult to build on foundational knowledge and skills over time. It may become frustrating for faculty who consistently attend who must learn with those who intermittently attend sessions.

The Just-In-Time Model
The Just-In-Time Model is based on point-of-care or just-in-time training. These sessions can be very short (e.g., 15 to 30 minutes) and are conducted just before an evaluation cycle. They can be live or pre-recorded as webinars or podcasts and distributed to faculty electronically before their assigned evaluations. During these online learning events, faculty are given mini-tutorials on CBME, how milestones are used to assess residents’ development throughout their training, expectations for direct observation, and how to complete the evaluation. These sessions are ideal at reinforcing already learned skills and can be used to reach large numbers of faculty quickly and easily. However, they require faculty buy-in and willingness to engage with the technology, as well as adequate infrastructure to deliver the content.

The Embedded Model
This model embeds faculty development within the structure of the evaluations. As assessments for each rotation are developed by a core group of engaged educators, so are anchors and questions that clearly state how to observe learners. The assessment tools are guides for faculty without the need for the major time and cost investments of the previous three models. However, this model does require faculty to have reviewed the evaluation form prior to the start of rotations. After embedding, the competency committee and program leaders audit evaluations to identify outliers and provide feedback to calibrate faculty and improve their skills. Monitoring and feedback must be performed in an ongoing way to train new faculty and reinforce or adjust behavior in those who are more experienced with the system. This feedback process can be time consuming for the competency committee and program leadership.

We anticipate these models will provide a guide for programs looking to design new faculty development programs or refine existing ones to meet CBME needs and requirements. More than one model may be needed to effectively address the unique needs of a program. Further research is needed to determine the highest-priority learning objectives for faculty. Moreover, new research should assess the relative impact of each faculty development program.

References