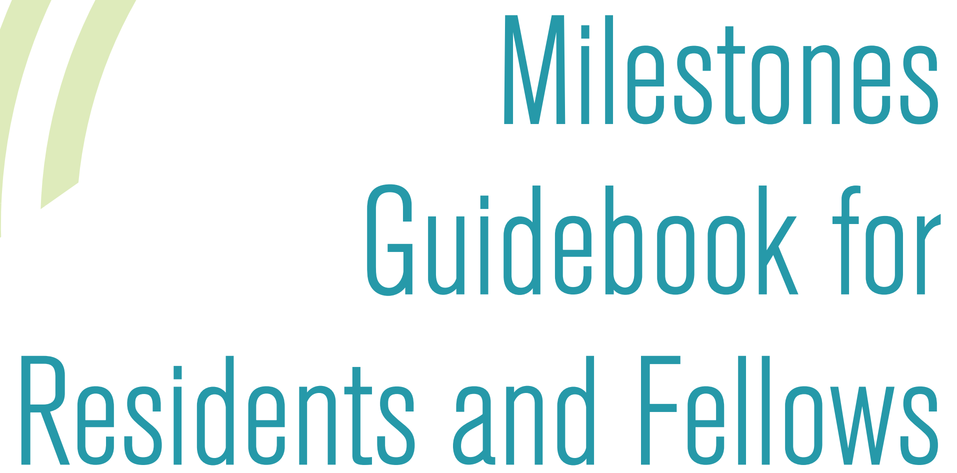


Milestones Guidebook for Residents and Fellows

Ricardo Correa MD, EsD

Maggie Curran, MD

Celeste Eno, PhD

Patricia Graese, MD

Jonathan Lim, MD

Jonathan Nahmias, MD

Annie Phung, DO

Shanice Robinson, MD

Nancy H. Stewart, DO

Andrew J. Sullivan, DO, MS

Mary Elizabeth Westerman, MD

Laura Edgar, EdD

Kate Hatlak, EdD

Eric S. Holmboe, MD

ACGME

Table of Contents

Introduction ... 3

Competency-Based Medical Education (CBME) ... 4

What Are the Milestones? ... 5

Assessment for Residents and Fellows ... 8

All about Feedback ... 9

Milestones Reports ... 12

Scenarios and Suggestions ... 14

Additional Resources ... 15

References ... 16

Introduction

This material was originally written by representatives of the resident and fellow members of the ACGME's Milestones Development Working Groups and updated by members of the ACGME's Council of Review Committee Residents (CRCR) to provide a learner perspective on what the Milestones represent and how they might be used to facilitate progress during residency/fellowship education.

Making the Most of the Milestones

1. Review your specialty/subspecialty/sub-subspecialty Milestones on an ongoing basis, especially at the start of each academic year, to help guide your professional development.
2. Perform a Milestone self-assessment twice a year, optimally before your program's Clinical Competency Committee (CCC) meets.
3. Review and compare your self-assessment with the CCC's Milestone ratings and discuss with your program director, faculty advisor, or mentor.
4. Write an individualized learning plan at least twice a year, and discuss it with your program director, faculty advisor, or mentor.
5. Be an active participant in your regular assessment and feedback.

Back to Table of Contents

Competency-Based Medical Education (CBME)

What Is CBME?

The literature defines CBME as "an outcomes-based approach to the design, implementation, assessment and evaluation of medical education programs, using an organizing framework of competencies" (Frank et al. 2010). A competency describes a key set of abilities required for learners to practice their given discipline. This model differs from one in which expectations for competence are based solely on how many years of education and training you have completed (e.g., three years for internal medicine).

A Comparison of Traditional versus Competency-Based Medical Education

Variable	Traditional Educational Model	CBME
Driving force for curriculum	Knowledge acquisition	Knowledge application
Driving force for process	Teacher	Learner
Path of learning	Hierarchal	Non-hierarchal
Responsibility of content	Teacher	Teacher and student
Goal of educational encounter	Knowledge and skill acquisition	Knowledge and skill application
Type of assessment tool	Single assessment measure (e.g., test)	Multiple assessment measures (e.g., direct observation, patient/caregiver observation, and multisource feedback)
Assessment tool	Proxy (e.g., traditional testing)	Authentic (e.g., mimics real profession/ clinical simulation)
Setting for evaluation	Removed from the work environment	In clinical and professional settings
Timing of assessment	Emphasizes summative feedback	Emphasizes formative feedback
Program completion	Fixed time (e.g., length of residency/ fellowship program is three years)	Variable time (e.g., completion dependent on meeting criteria not tied to specific time frame)

Source: Adapted from Carraccio, 2002

Why CBME?

CBME is critical to patient safety because it seeks to ensure that education and training increase standardized practices across institutions and programs throughout the US. It incentivizes creation of a learning environment that supports adoption of mastery goal orientations and self-regulated learning (Ross et al. 2022). It also provides you with timely, targeted feedback in specific areas of progress, reduces focus on high-stakes assessments, incorporates self-reflection, and relies on evidence-based criterion-referenced assessments rather than solely on norm-referenced tests. CBME creates a shared roadmap for growth and progression throughout the continuum of medical education and training. This model ultimately benefits you, your teachers (faculty members, program leadership), the ACGME, certification boards (American Board of Medical Specialties and American Osteopathic Association), and especially and the public (patients) you serve.

What Are the Milestones?

The Milestones Are a Roadmap for Growth and Development

The Milestones represent a roadmap for your development as you advance in clinical skills, knowledge, and attitudes. The Milestones are divided into six Core Competencies:

- Patient Care
- Medical Knowledge
- Professionalism
- Interpersonal and Communication Skills
- Practice-Based Learning and Improvement
- Systems-Based Practice

Each specialty/subspecialty/sub-subspecialty has created its own set of Milestones reflective of the clinical skills, knowledge, and values specific to that discipline.

From Level 1 to Level 5, the Milestones describe a stepwise progression toward achieving mastery using the Dreyfus Model of Development as a foundation. Level 1 describes what would be expected of a novice in the specialty/subspecialty/sub-subspecialty (i.e., a starting resident or fellow). Level 4 is an ideal graduation target (i.e., proficiency in the Dreyfus model), but not a requirement of the ACGME; each program or institution sets its own requirements for graduation. Level 5 describes aspirational performance for a learner who is acting as a role model or coach for others. For more information and the anatomy of a Milestone, see p.9 of **The Milestones Guidebook**.)

Dreyfus Model of Development

Stage	Description (Clinical Reasoning Example)
1. Novice	Rule driven; analytic thinking; little ability to prioritize information
2. Advanced beginner	Able to sort through rules based on experience; analytic and non-analytic for some common problems
3. Competent	Embraces appropriate level of responsibility; dual processing of reasoning for most common problems; can see big picture; complex problems default to analytic reasoning; performance can be exhausting
4. Proficient	More fully developed non-analytic and dual process thinking; comfortable with evolving situations; able to extrapolate; situational discrimination; can live with ambiguity
5. Expert	Experience in subtle variations; distinguishes situations

Source: Adapted from Edgar, 2023

Milestones Allow for Self-Driven Assessment and Growth

You should use the Milestones to understand what each stage looks like, to assess at which stage you find yourself within your educational program, and to identify areas in which you can (or should) grow. Often, the Milestones describe a progression from common or basic abilities to more complex and nuanced ones.

Imagine setting off on a hike in a park you have never visited. A map and mile markers are essential to helping you get to the end of the trail. Similarly, for any profession, knowing where you are at the present time in your abilities and what you need to focus on next helps you along a path to mastery. The Milestones can help you intentionally focus on each step toward becoming the best health care professional you can be.

The Milestones can also provide a standardized language you can use with faculty members and program leadership. You can ask about your progress in a specific competency (e.g., patient care) or subcompetency (e.g., clinical reasoning). Having a common language and model can help you and your clinical coach/mentor work together.

In addition to the Milestones, Supplemental Guides are designed to provide additional clarity and examples. These guides include the overall intent of each subcompetency, examples for each level, ideas of how it can be assessed, and additional resources.

Milestones Were Created for Multiple Stakeholders

The Milestones were created for you, your patients, and the public as several of the critical stakeholders within health care and medical education. Creating a shared model for your growth and development is critical to maintaining transparency and engendering trust with patients and the public. You are the future key critical stakeholders as you are assessed on these milestones throughout your educational program.

Clarity, transparency, and standardization of common educational specialty/subspecialty/sub-subspecialty-specific milestones creates a more fair and equitable system for you as learners. *These assessments will also help program directors determine whether you are ready to be promoted or advanced to the next stage of your educational program or to independent practice.*

Milestones are also designed to assist programs in using an evidence-based, learner-centered assessment model. They provide a framework approach to your assessment. Finally, although the Milestones are reported to the ACGME, the data is not used for program or institutional accreditation.

The Purpose and Function of the Milestones

Constituency or Stakeholder	Purpose/Function
Residents and Fellows	▪ Present a descriptive roadmap for training ▪ Provide increased transparency of performance requirements ▪ Encourage informed self-assessment and self-directed learning ▪ Facilitate better feedback ▪ Guide personal action plans for improvement
Residency and Fellowship Programs	▪ Guide curriculum and assessment tool development ▪ Provide more explicit expectations of residents and fellows ▪ Provide a meaningful framework for the Clinical Competency Committee (e.g., help create shared mental model of evaluation) ▪ Support better systems of assessment ▪ Enhance opportunity for early identification of under-performers to support early intervention
ACGME	▪ Fulfills responsibility for public accountability by reporting at an aggregated national level for competency outcomes ▪ Aids development of a community of practice for evaluation and research focusing on continuous improvement

Source: Adapted from Holmboe, 2015

Milestones Are Constantly Evolving

After several years in use, the Milestones for all specialties, subspecialties, and sub-subspecialties were revised over the course of several years. Individuals representing patients/the public, residents and fellows, faculty members, program directors, specialty organizations, and certifying boards were invited to participate in the process. Each specialty group met in person and/or via videoconference multiple times to draft their revised Milestones. Editors at the ACGME then reviewed the working drafts to ensure consistency. Subsequent drafts were put forth to the community for public comment before being finalized for implementation by each specialty.

Harmonized Milestones

An additional update to the Milestones 2.0 was the creation of Harmonized Milestones for the Practice-Based Learning and Improvement, Systems-Based Practice, Interpersonal and Communication Skills, and Professionalism Competencies. Because many of these abilities are shared and universal across specialties, the ACGME convened an interdisciplinary work group to create consistency throughout graduate medical education (GME). More information on the Harmonized Milestones is available on the **Research and Reports** page of the Milestones section of the ACGME website.

Assessment for Residents and Fellows

Why Assessment Matters

Assessment is used both for giving feedback and for making decisions about level of competence or progression to the next level of education. There are two primary types of assessment: norm-referenced and criterion-referenced.

In a norm-referenced assessment, the standard compares an individual to other residents and fellows, i.e., *"Does this resident (fellow) look like other residents (fellows) at this stage of education?"* However, norm-referenced assessment has the potential to introduce bias and to vary over time.

Criterion-referenced assessment compares an individual to a specific standard or criteria, i.e., the Milestones.

Each program has a set of tools that faculty members and other health care professionals use to assess your competence in the six Core Competencies, and each specialty has a unique set of subcompetencies. Ideally, every one of your preceptors should be in a position to observe you in the clinical setting and to rate your competence according to *objective* criteria for each subcompetency.

The Process of Milestone Assessment

The ACGME Common Program Requirements mandate that every program's Clinical Competency Committee (CCC) meets at least twice annually to discuss each resident's or fellow's evaluations. Assessments from the attendings who supervise you should include direct observation of your clinical encounters with patients and insight into your clinical reasoning skills. The CCC should strive to obtain multisource feedback assessments (i.e., 360-degree evaluations) from others with whom you may have interacted during a rotation. Such assessments may provide a more complete picture of competency domains and skills that may be difficult to assess, such as communication skills and professional behaviors. Combined with other assessments (e.g., audits, chart stimulated recall, and end-of-rotation evaluations), the CCC can create a picture of your level of competence and identify the level for each subcompetency within the specialty-specific Milestones. The specialty-specific Milestone evaluations are then used to advise your program director on your progress.

The Importance of Self-Assessment

Self-assessment using the Milestones will enable you to critically evaluate your abilities. You can then compare your self-assessments with the results from the CCC meeting for a more meaningful evaluation. If a particular subcompetency or Milestone is not clear, you can consult the Supplemental Guide for additional explanation and examples.

The Resident's/Fellow's Role in the Assessment Process

You should take an active role in your assessment. If you feel that attending faculty members are not taking the time to observe your performance in each of the subcompetencies, you should ask for specific feedback to help you improve your performance. This feedback will help you develop your abilities in a meaningful and productive manner.

All about Feedback

Regardless of educational program level and experience, we are all simultaneously educators and learners, both giving and receiving feedback on a daily basis. Thus, competence in giving and receiving feedback is crucial to the delivery and maintenance of excellent patient care (Jug, Jiang, and Bean 2019).

> ***Remember, feedback is an ACTIVE process both for those GIVING the feedback and for those RECEIVING it.***

Features of High-Quality Feedback

Feature	Evaluator	Learner
Timeliness	Give feedback when the recipient is able to implement the corrective behavior.	**TIMELINESS** is key to help you recognize and correct areas for improvement. Ask for feedback early to implement corrective actions.
Specificity	Feedback is most useful when it is specific. Provide examples of behaviors observed.	Prepare for a feedback session. Reflect honestly on yourself and ask **SPECIFIC** questions about your performance and how to improve.
Balance	Feedback should have a balance of both "reinforcing" and "corrective" comments, without one dominating the other. Deliver feedback with empathy in mind.	If the evaluator is giving too much reinforcing or corrective feedback, probe them with questions about what you could improve or your successes to **BALANCE** the evaluation.
Recipient feedback/reflection	Allow time for the recipient to process and reflect on the feedback throughout the session.	**REFLECT** on the discussion to create an "action plan" with those delivering the feedback.
Action plans	Create and develop a plan during the session by setting goals for the recipient, giving timelines, and follow-up.	Set goals and timelines for yourself in an **ACTION PLAN**. Check in frequently with advisors to ensure you are on the right track to meet your goals.

Types of Feedback

Formal feedback is the most easily recognized type of feedback. It is structured and often uses a documented formal evaluation method, such as an end-of-rotation form. Formal feedback often occurs at specified intervals (e.g., mid- or end-of-rotation). This type of feedback is intended to be thorough and reflect your performance over time. It often will incorporate milestones or other specific benchmarks for the rotation.

Informal feedback should occur a few times throughout a rotation and often involves observations of skills and/or interactions. Generally, this type of feedback involves a short meeting that occurs during or shortly after a specific encounter. Informal feedback is aimed at providing you with concise takeaways from the observed experience.

Barriers to Feedback

Evaluator Barriers. Common barriers experienced by an evaluator include time constraints, limited understanding of the recipient's expected competence level, discomfort that may be associated with giving constructive feedback, and fear of retribution. These barriers are also important to keep in mind when giving feedback to more junior residents/fellows, peers, medical students, or faculty members/supervisors (upward feedback).

Strategies for Evaluators

- Set aside time to actively give feedback, preferably in a quiet, private space.
- Focus on both constructive feedback and on areas where the learner did well. Feedback is a time to promote growth, but also to reinforce already strong behaviors.
- Practice giving feedback to colleagues or other trusted individuals.
- Ask a mentor how to effectively give upward feedback.

Recipient Barriers. Common barriers experienced by recipients of feedback include time constraints, unknown expectations, and unease asking for feedback from particular evaluators. Recipients may also feel that they are "bothering" the evaluator by asking for feedback.

Strategies for Recipients

- Be an active learner by setting specific goals.
- Schedule time for feedback.
- Self-reflect prior to the conversation and come prepared with specific questions.

Tips for Receiving and Seeking Out Feedback

Self-reflect. Take time for critical self-reflection and identify your personal strengths and weaknesses.

Develop "active" questions. The more specific your questions, the more specific and helpful the response will be. See the table below for ways to develop questions that prompt more specific, useful answers for self-improvement.

Vague - AVOID!	More specific	Even better	Other examples
How am I doing?	What should I do differently to improve my technique in X? *OR* What can I do differently next time to improve my presentation?	I found this part of my procedure challenging; how can I improve my technique to be more efficient? *OR* My presentation felt long and unorganized; how can I restructure my assessment and plan?	How can I take the next step in working toward X? *OR* I have a goal of X; how did you see me take steps toward achieving that goal and how can I continue to do so?

Ask early! Be sure to ask for feedback early and often.

Express gratitude. The fact that someone took their time to give you thoughtful feedback means they care about your success and patient care.

Tips for Giving Feedback

Do your research. Ensure you understand the role of the person you are evaluating. You want to avoid having specific expectations for someone who is not yet expected to be able to do something; similarly, you do not want to miss any crucial expectations of the person you are evaluating. Take time to reflect on their performance. If you know that you are expected to evaluate someone, it may be helpful to make a physical or mental checklist of their performance over time, so that you are prepared when it is time to give feedback.

Give feedback early. Just as you appreciate early feedback and identification of weaknesses so you can improve, offer the same to others to allow them enough time to correct their behavior.

Set aside quiet, uninterrupted time. No one likes to give or receive feedback in a public area. Ensure privacy and try to minimize interruptions.

Ask for permission. By specifically asking for permission, such as "Can we discuss this encounter later this afternoon when you have time?", it welcomes the learner into the conversation and allows the learner to reflect on their own self-assessment for a more robust and collaborative feedback session.

Use techniques you have admired in role models who have given you critical and useful feedback. Perhaps you really appreciated one mentor who gave a balance of reinforcing and corrective honest feedback.

Provide guidance or tips when delivering constructive feedback. If you are delivering corrective feedback, ensure the person you are evaluating has time to reflect. It is often difficult for people to hear corrective feedback, and even more difficult for people to take the negative feedback and use it in a useful manner. Provide guidance, tips, or action items on how to improve or correct behavior.

Practice. Ask a colleague to run through scenarios, including those in which the recipient disagrees or becomes defensive. If you practice remaining calm and focusing on the message, you will be confident in any feedback situation.

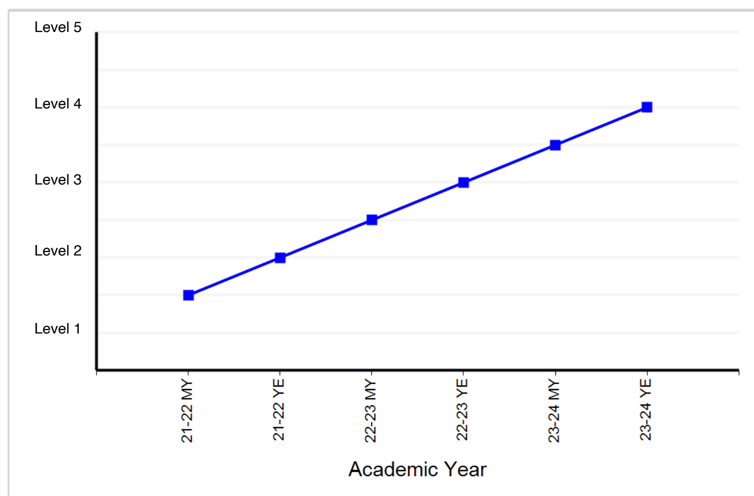
Milestones Reports

Reports of individual Milestones progression are available in the ACGME Accreditation Data System (ADS). When program directors submit Milestones evaluations twice each year, they can also download several reports on resident/fellow Milestones data including trends, summaries, and evaluation. These reports may be provided to you as a standalone evaluation or in conjunction with your semi-annual evaluation. The examples below are from a third-year anesthesiology resident.

Individual Milestone Trends

This report includes a graph showing an individual's progression for each subcompetency. In the example below, notice how the resident begins at Level 1 and steadily progresses to Level 4. This upward trajectory is preferred over maintaining the same level status throughout residency, suggesting lack of self-improvement or growth. It is also expected that residents will not progress to Level 5 in every subcompetency by the time of graduation. Remember: This is completely fine and normal; Level 4 is the target for program completion.

1. Patient Care - Patient Care 1: Pre-Anesthetic Evaluation



Individual Milestone Summary

This report provides a snapshot of an individual's most recent evaluation for each subcompetency as provided in the example below for Systems-Based Practice. While the resident effectively navigates systems for patient-centered care and has a role in the health care system, the resident could improve skills in patient safety and quality improvement.

Systems-Based Practice

	Not Yet Completed Level 1	Level 1		Level 2		Level 3		Level 4		Level 5
a). Systems-Based Practice 1: Patient Safety and Quality Improvement						●				
b). Systems-Based Practice 2: System Navigation for Patient-Centered Care								●		
c). Systems-Based Practice 3: Physician Role in Health Care Systems								●		

Individual Milestone Evaluation

This report provides the narrative text of the level assigned for each subcompetency. When an individual's evaluation lies between levels, the text for both levels is displayed with the higher-level text identifying that the resident has achieved some, but not all the requirements. In the example for Professionalism 2, below, the resident's achievement of the subcompetency lies between Levels 3 and 4.

19 Professionalism	Professionalism 2: Accountability/Conscientiousness

Dr. LastName is between Level 3 and Level 4.

Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations.

Takes responsibility for tasks not completed in a timely manner and identifies strategies to prevent recurrence.

In addition, Dr. LastName has achieved certain, but not all, elements of the competency level listed below:

Prioritizes tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations.

Proactively implements strategies to ensure that the needs of patients, teams, and systems are met.

Scenarios and Suggestions

Whether engaging in remediation or striving for mastery, the Milestones can provide a shared mental model for how to advance in your education and training, offering a tool to navigate conversations and self-reflection for improvement.

If you are being considered for remediation:

- Meet with an advisor, an associate program director, or the program director to better understand the circumstances of remediation.
- Before the meeting, review your individual evaluations and Milestones ratings to identify areas requiring improvement.
- In collaboration with your advisor, create or adjust your individualized learning plan (ILP) to focus on steps you can take to reach the next level of the Milestones.
- When creating an ILP following consideration for remediation, establish SMART (**S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**imely) goals that can help you identify areas of improvement and facilitate coaching by your mentors.
- In future clinical care, take the opportunity to identify the areas you wish to develop with your attending or supervising resident/fellow, and ask for direct observation and coaching.
- Throughout your education and training, take time to reflect on your performance and where your progress lies on the Milestones. It can be helpful to reflect with your attendings and advisors. Schedule regular interval checkups to track progress and adjust your ILP as needed.

When you are striving for mastery:

- Review the Milestones detail for the knowledge, skills, and attitudes demonstrated by an exemplary resident or fellow at Level 5 of each subcompetency.
- Consider the subcompetency(ies) for which you wish to demonstrate mastery.
- Work with advisors and faculty members to develop an ILP focused on how you might achieve higher levels toward mastery.
- Continue to emphasize SMART goals to achieve mastery and progression of Milestones. Encourage dialogue with and feedback from educators in areas toward which you wish to strive.

Additional Resources

The ACGME uses SMART resources for residents, fellows, faculty members, program administration, and leadership. As data is constantly becoming more readily available, further resources are developed regularly. Visit the **Resources** page in the Milestones section of the ACGME website to review available resources and tools including:

Milestones Guidebook
The *Milestones Guidebook* was written to aid with programs' understanding of the Milestones. Included is a look back at how and why the Milestones were created, tips for implementation, and ideas for giving better feedback.

Clinical Competency Committee (CCC) Guidebook
The *Clinical Competency Committee Guidebook* was designed for all GME stakeholders, and includes information and practical advice regarding the structure, implementation, function, and utility of a well-functioning CCC.

The ACGME publishes annual reports from aggregate data to give a snapshot of each resident and fellow cohort by specialty and subspecialty. These reports are found on the **Research and Reports** page in the Milestones section of the ACGME website.

ACGME Milestones National Report
This annual report is a snapshot of Milestone ratings and is available each fall for the preceding academic year. It is intended to highlight both central tendencies and meaningful variation within and across specialties.

ACGME Milestones Predictive Probability Values Report
This annual report demonstrates the predictive probability values (PPVs) that final Milestone ratings will fall below Level 4 (the recommended graduation target) at the time of graduation, based on national longitudinal Milestones ratings (published each year). This data can help programs and residents/fellows identify if a learning intervention is needed.

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