



Milestones Guidebook for Residents and Fellows

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| 1

This guidebook was written by the resident and fellow members of the ACGME's Milestones Working Groups to provide the learner perspective on what the Milestones represent and how they might be used to facilitate progress during residency/fellowship education and training.

Introduction to the Milestones

- What is competency-based medical education
- What are the Milestones and how were they developed
- How the Milestones serve each key stakeholder
- How the Milestones are used in assessment and reporting to the ACGME



2

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This guidebook was written by the resident and fellow members of the ACGME's Milestones Working Groups to provide the learner perspective on what the Milestones represent and how they might be used to facilitate progress during residency/fellowship education and training.

While much can be said about competency-based medical education, the Core Competencies, and the Milestones, this slide set is designed to introduce these ideas while focusing on what is relevant to residents and fellows.

In this talk, we will review:

1. What is competency-based medical education
2. What are the Milestones and how were they developed
3. How the Milestones serve each key stakeholder
4. How the Milestones inform assessment
5. How the Milestones can be used for self-assessment and feedback

Each slide includes a reference to the page in the Milestones Guidebook for Residents and Fellows, where more information can be found. The Guidebook can be found on the Milestones section of the ACGME website, at :
<https://www.acgme.org/Portals/0/PDFs/Milestones/MilestonesGuidebookforResidentsFellows.pdf?ver=2020-05-08-150234-750>

Recommendations for Residents and Fellows



Review your specialty Milestones on an ongoing basis



Perform a self-assessment twice a year



Review and compare your self-assessment with the CCC's



Write an ongoing individualized learning plan



Actively participate in your regular assessment and feedback



3

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What's the bottom line?

The key takeaways that we would have you focus on include the following recommendations:

- Review your specialty Milestones on an ongoing basis
- Perform a self-assessment twice a year
- Review and compare your self-assessment with the Clinical Competency Committee's
- Write an ongoing individualized learning plan
- Actively participate in your regular assessment and feedback

Guidebook page 3

What is Competency-Based Medical Education (CBME)?

- Outcomes-based
- Uses an organizing framework of competencies
- Implications for design, implementation, assessment, evaluation



Frank JR, Snell LS, Cate OT, et al. Competency-based medical education: theory to practice. *Med Teach*. 2010;32:638-645.
Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Martin C. Shifting paradigms: from Flexner to competencies. *Acad Med*. May 2002;77(5):361-367.

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What is competency-based medical education?

It is an outcomes-based approach to the design, implementation, assessment, and evaluation of medical education programs using an organizing framework of competencies.

- Outcomes: are meant to be observable, measurable. CBME seeks to have educational systems driven by both educational and patient-centered outcomes.
- A framework of competencies allows all key members of the learning ecosystem to have a shared understanding of what are truly the core goals and mental model for the expertise we are trying to achieve.
- Again, these outcomes and competencies will have implications on every aspect of learning whether it is the curricula in the classroom, the design of rotations, assessments, and how learners are evaluated.

Guidebook page 4

How Is CBME Different?

Variable	Traditional Educational Model	CBME
Driving force for curriculum	Knowledge acquisition	Knowledge application
Driving force for process	Teacher	Learner
Goal of educational encounter	Knowledge acquisition	Knowledge application
Type of assessment tool	Single assessment measure	Multiple assessment measures
Assessment tool	Proxy	Authentic (mimics real profession)
Timing of assessment	Emphasis on summative	Emphasis on formative
Program completion	Fixed time	Variable time



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How is CBME different?

CBME provides key innovations from the traditional model in medical education which focuses on measuring knowledge acquisition through standardized testing rather than demonstrable skill application. CBME focuses on what competencies the learner is demonstrating, thereby making it learner centered rather than placing the focus on the teacher.

CBME suggests that to measure outcomes, many small-stakes direct observation and workplace assessments are required. A one-off, high stakes evaluation will not be sufficient for CBME.

In the traditional model, assessment is focused on being summative rather than providing coaching for an emphasis on formative feedback.

Lastly, a key difference is that CBME offers the possibility of time-variable training where a learner's training is not dependent on a fixed three years or more of residency but rather on how long or short it takes for the learner to

achieve a certain expected level of mastery.

Guidebook page 4

Why CBME?

1. Define expected graduation skill levels for the care of patients
2. Standardize training practices across institutions
3. Use evidence-based criteria to judge ability
4. Rely on direct observation of behaviors and skills



6

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CBME is about ensuring doctors have obtained an adequate level of skill or knowledge in key areas important to the practice of medicine for a given specialty.

1. All graduating learners to achieve basic abilities in key areas to care for patients in practice.
2. Ensure that education and training in a specialty/subspecialty have standard practices across institutions throughout the United States.
3. It emphasizes using evidence-based criteria to judge ability and relies more on directly observed behaviors and skills

Guidebook page 5

What are the six Core Competencies?

Patient Care

Medical Knowledge

Practice-based
Learning and
Improvement

Interpersonal and
Communication
Skills

Professionalism

Systems-based
Practice



7

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The ACGME and the American Board of Medical Specialties (ABMS) first developed six general core competencies necessary for a practicing physician.

As mentioned before, these six Core Competencies provide the framework for describing the Milestones. Within each Core Competency, the ACGME describes additional sub-competencies and lays out milestones within each.

Guidebook page 5

Milestones: What You Need to Know

Milestones are a key model to understand learner progression during residency/fellowship

- Describe progression within Core Competencies
- Represent a shared model to understand education and training
- Assessed through peer and faculty member evaluations
- Synthesized by the Clinical Competency Committees (CCC), submitted to the ACGME
- Written by key stakeholders and revised after public comment



8

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- Describe the development of specific skills, knowledge, and attitudes (i.e., abilities) organized within the six Core Competencies through the course of education in a specialty/subspecialty
- Represent a shared model for how a resident/fellow can get to the next stage towards mastery
- Created for patients, residents and fellows, faculty members, program leadership, and accrediting and specialty organizations
- Assessed through peer and health professions faculty member (including non-physician) assessments and synthesized by the Clinical Competency Committee before submission to the ACGME
- Written by key stakeholders and revised after public comment

Guidebook page 7-8

The Milestones Use the Dreyfus Stages

1. Novice
2. Advanced beginner
3. Competent
4. Proficient
5. Expert



9

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The Milestones represent a roadmap for the development of residents and fellows as they advance in clinical skills, knowledge, and values. From Level 1 to Level 5, the Milestones describe a stepwise progression towards achieving mastery using the Dreyfus Model of Development as a foundation.

Dreyfus Stage

Description (Clinical reasoning example)

Novice

Rule driven; analytic thinking; little ability to prioritize information

Advanced beginner

Able to sort through rules based on experience; analytic and non-analytic for some common problems

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.

Proficient

More fully developed non-analytic and dual process thinking; comfortable with evolving situations; able to extrapolate; situational discrimination; can live with ambiguity

Expert

Experience in subtle variations; distinguishes situations

Residents and fellows should use the Milestones as they consider where they are in their educational program, to identify areas to grow, and to understand what each stage looks like. Often the Milestones describe a progression from common or basic abilities to more complex and nuanced ones.

Guidebook page 8

Milestones are a Shared Model for Each Key Stakeholder

1. Patients
2. Residents and fellows
3. Faculty members
4. Program leadership
5. Accrediting bodies and specialty organizations



10

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The Milestones were created for several critical stakeholders within health care and medical education. Ultimately, creating a shared model for growth and development for future physicians is critical to maintain transparency and engender trust with patients and the public.

While there is a purpose for everyone, we will focus on some key specific groups: residents and fellows, programs, and the ACGME.

Guidebook page 9

Milestones for Residents and Fellows

1. Provide descriptive roadmap for education and training
2. Increased transparency of performance requirements
3. Encourage self-assessment, self-directed learning
4. Facilitate feedback to residents and fellows
5. Guide personal action plans for improvement



Residents and fellows are the central stakeholder besides patients in the development of the Milestones. The Milestones can serve learners in a number of ways:

1. Provide descriptive roadmap for education and training
2. Increase transparency of performance requirements
3. Encourage self-assessment, self-directed learning
4. Facilitate feedback to residents and fellows
5. Guide personal action plans for improvement

Guidebook page 9

Milestones for Programs

1. Guide curriculum, assessment
2. Provide explicit expectations
3. Provide framework for CCC
4. Support systems of assessment
5. Enhance opportunity for early identification of learners-in-need



12

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Residency and fellowship programs are another stakeholder. The Milestones standardize educational practices for all ACGME programs, including by:

1. Guiding curriculum and assessment tool development
2. Providing more explicit expectations of residents and fellows
3. Providing a meaningful framework for the CCC (e.g., helping to create a shared mental model of evaluation)
4. Supporting better systems of assessment
5. Enhancing opportunity for early identification of under-performers in order to support early intervention

Determination of current Milestone levels is performed by Clinical Competency Committees

Beyond a shared model for resident and fellow development, the Milestones are also reported by programs to the ACGME, which provides continued monitoring and accreditation. When a resident transitions to fellowship, the fellowship program receives the prior residency Milestones evaluations.

Milestones for the ACGME

1. Accreditation → monitoring of programs, decreases number of site visits
2. Public Accountability → report competence at an aggregated national level



Lastly, the ACGME uses the Milestones in two ways: ongoing monitoring and accreditation of residency and fellowship programs, and promoting public accountability. Competencies are also reported at an aggregated national level to our patient public.

Guidebook page 9

Milestones 2.0

Milestones: written by stakeholders and revised after public comment

Harmonized Milestones ➡ **similar throughout all graduate medical education specialties**



14

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Milestones: written by stakeholders and revised after public comment

Representatives representing patients/the public, residents and fellows, faculty members, program directors, and specialty organizations were invited to participate in the writing of the Milestones.

Harmonized Milestones provide consistency across graduate medical education

An additional update to the Milestones in version 2.0 is the creation of Harmonized Milestones for the Practice-based Learning and Improvement, Systems-based Practice, Interpersonal and Communication Skills, and Professionalism Competencies. Previously there were 100s of different ways that each of these competencies and subcompetencies were described. Now, in Milestones 2.0, there is greater uniformity across specialties.

Guidebook page 10

The Process of Milestone Assessment

1. Each program has a Clinical Competency Committee (CCC) → collates/reviews assessments for every resident/fellow → produce judgment (e.g., rating) on each milestone
2. CCC meets 2x/year to discuss each resident/fellow
3. CCC in conjunction with program leadership submits Milestones ratings to the ACGME





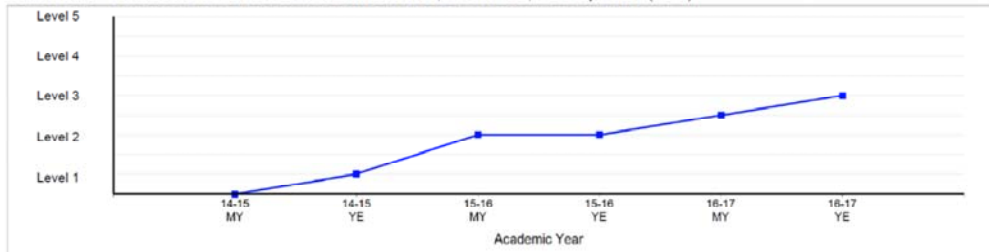
REPORTS EXAMPLE

Milestone Reports Available in ADS

Report 1: Individual Milestone Trends

This report includes a graph showing the individual's progression for each subcompetency. Notice how the resident begins at Level 1 and steadily progresses to Level 3. This is preferred over maintain the same level status throughout residency, suggesting lack of self-improvement or growth.

Patient Care - Patient Care 1: Pre-anesthetic Patient Evaluation, Assessment, and Preparation (PC-1)



Milestones are reported and viewable in ADS (a centralized, proprietary database of the ACGME) for every resident and fellow. Fellowships are able to view fellows' Milestones from residency. This graph shows an individual's Milestones progression over time. Two other reports are also available.

Guidebook page 16-17

Recommendations for Residents and Fellows



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Review and compare your self-assessment with the CCC's



Write an ongoing individualized learning plan



Actively participate in your regular assessment and feedback



18

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The key takeaways from this presentation include the following recommendations:

Review your specialty Milestones on an ongoing basis

Perform a self-assessment twice a year

Review and compare your self-assessment with the CCC's

Write an ongoing individualized learning plan

Actively participate in your regular assessment and feedback

Guidebook page 3

Other Resources

Visit the Milestones section of the ACGME website to review available resources and tools

Milestones Guidebook	<ul style="list-style-type: none">• Written to aid understanding of milestones• How and why the Milestones were created• Tips for implementation• Ideas for giving better feedback
CCC Guidebook	<ul style="list-style-type: none">• Designed for all stakeholders• Advice regarding structure, implementation, function, and utility of a well-functioning CCC
ACGME Milestones National Report	<ul style="list-style-type: none">• Snapshot of Milestones ratings, available each fall for the preceding academic year• Intended to highlight both central tendencies and meaningful variation within and across specialties



Many resources are available on the Milestones section of the ACGME website. We encourage you to review the Milestones Guidebook for Residents and Fellows to learn more about these and other important topics (e.g., feedback – giving and receiving).

Guidebook page 19



THANK YOU

If you have questions about the Milestones or this presentation, please email the Milestones staff at the ACGME:

milestones@acgme.org