Hematology and Medical Oncology Milestones

The Accreditation Council for Graduate Medical Education



Second Revision: August 2019 First Revision: October 2014

Hematology and Medical Oncology Milestones

The Milestones are designed only for use in evaluation of fellows in the context of their participation in ACGME-accredited residency or fellowship programs. The Milestones provide a framework for the assessment of the development of the fellow in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.

Hematology and Medical Oncology Milestones

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The ACGME would like to thank the following organizations for their continued support in the development of the Milestones:

American Board of Internal Medicine

American Society of Clinical Oncology

American Society of Hematology

Review Committee for Internal Medicine

Understanding Milestone Levels and Reporting

This document presents the Milestones, which programs use in a semi-annual review of fellow performance, and then report to the ACGME. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME Competencies organized in a developmental framework. The narrative descriptions are targets for resident/fellow performance throughout their educational program.

Milestones are arranged into levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert fellow in the specialty or subspecialty. For each reporting period, the Clinical Competency Committee will review the completed evaluations to select the milestone levels that best describe each learner's current performance, abilities, and attributes for each subcompetency.

These levels *do not* correspond with post-graduate year of education. Depending on previous experience, a junior fellow may achieve higher levels early in his/her educational program just as a senior fellow may be at a lower level later in his/her educational program. There is no predetermined timing for a resident to attain any particular level. Fellows may also regress in achievement of their milestones. This may happen for many reasons, such as over scoring in a previous review, a disjointed experience in a particular procedure, or a significant act by the fellow.

Selection of a level implies the fellow substantially demonstrates the milestones in that level, as well as those in lower levels (see the diagram on page v).

Additional Notes

Level 4 is designed as a graduation *goal* but *does not* represent a graduation *requirement*. Making decisions about readiness for graduation and unsupervised practice is the purview of the program director. Furthermore, Milestones 2.0 include revisions and changes that preclude using Milestones as a sole assessment in high-stakes decisions (i.e., determination of eligibility for certification or credentialing). Level 5 is designed to represent an expert fellow whose achievements in a subcompetency are greater than the expectation. Milestones are primarily designed for formative, developmental purposes to support continuous quality improvement for individual learners, education programs, and the specialty. The ACGME and its partners will continue to evaluate and perform research on the Milestones to assess their impact and value.

Some milestone descriptions include statements about performing independently. These activities must occur in conformity to ACGME supervision guidelines as described in the Program Requirements, as well as to institutional and program policies. For example, a fellow who performs a procedure independently must, at a minimum, be supervised through oversight.

A Supplemental Guide is also available to provide the intent of each subcompetency, examples for each level, assessment methods or tools, and other available resources. The Supplemental Guide, like examples contained within the Milestones, is designed only to assist the program director and Clinical Competency Committee, and is not meant to demonstrate any required element or outcome.

Supplemental Guides and other resources are available on the Milestones page of each specialty section of the ACGME website. On www.acgme.org, choose the applicable specialty under the "Specialties" menu, then select the "Milestones" link in the lower navigation bar.

The diagram below presents an example set of milestones for one sub-competency in the same format as the ACGME Report Worksheet. For each reporting period, a fellow's performance on the milestones for each sub-competency will be indicated by selecting the level of milestones that best describes that fellow's performance in relation to those milestones.

| Systems-based Practice 2: System Navigation for Patient Centered Care: Coordination and Transitions of Care | | | | | |
|---|--|---|--|--|--|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | |
| Demonstrates knowledge of care coordination | Coordinates care of patients in routine clinical situations effectively utilizing the roles of their interprofessional teams | Coordinates care of patients in complex clinical situations effectively utilizing the roles of their interprofessional teams | Role models effective coordination of patient- centered care among different disciplines and specialties | Analyzes the process of care coordination and leads in the design and implementation of improvements | |
| Identifies key elements for safe and effective transitions of care and handoffs | Performs safe and effective transitions of care/handoffs in routine clinical situations | Performs safe and effective transitions of care/handoffs in complex clinical situations | ffective transitions of advocates for safe and are/handoffs in complex effective transitions of | | |
| | | | | | |
| Comments: | Comments: Not Yet Completed Level 1 | | | | |
| Selecting a respo middle of a level i milestones in that levels have been demonstrated. | mplies that level and in lower | Selecting a response box on the line in between levels indicates that milestones in lower levels have been substantially demonstrated as well as some milestones in the higher level(s). | | | |

| Patient Care 1: Accesses Data Sources to Synthesize Patient and Disease Specific Information Necessary for Clinical Assessment | | | | |
|--|---|---|--|---|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Accesses data and gathers a history standard for general internal medicine | Gathers a disease- specific history, with assistance | Accesses data from multiple sources and collects disease-specific history, including psychosocial issues, from the patient and family members | Consistently synthesizes data from multiple sources and collects a disease- specific history from the patient and family members | Role models gathering and synthesis of clinical information |
| Performs a physical examination standard for general internal medicine | Performs a disease- specific physical examination, with assistance | Completes a disease- specific physical examination | Consistently completes a disease-specific physical examination | |
| | | | | |
| Comments: Not Yet Completed Level 1 Not Applicable | | | | |

| Patient Care 2: Diagnoses and Assigns Stage and Severity of Hematology and Oncology Disorders | | | | | |
|--|---|---|---|--|--|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | |
| Generates a differential diagnosis expected of a graduating internal medicine resident Orders testing without specialty-specific differential diagnosis | Interprets initial diagnostic studies to generate a specialty-specific differential diagnosis Determines stage of disorder | Orders advanced diagnostic studies for common disorders when appropriate Determines clinical comorbidities | Diagnoses uncommon disorders and determines disease severity using evidence-based studies | Role models the assignments of stage and disease severity, informed by evidence-based studies and guidelines for specialty disorders | |
| | | | | | |
| Comments: | | | Not Yet C Not Applic | ompleted Level 1 | |

| Patient Care 3: Formulates the Management Plan | | | | | |
|--|--|--|--|---|--|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | |
| Formulates a management plan for patients without comorbidities, with assistance | Formulates a management plan using decision-support tools for patients without comorbidities | Formulates a management plan with consideration of disease and patient factors and enrollment in clinical trials | Consistently formulates management plans that include consideration of clinical trial enrollment and conforms to patient preferences and goals of care | Serves as an expert in formulating management plans | |
| | | | | | |
| Comments: | | | Not Yet C Not Applic | ompleted Level 1 | |

| Patient Care 4: Adjusts Management Plans for Acute and Chronic Issues | | | | |
|---|--|---|--|---|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Adjusts management plans according to standard guidelines and toxicities, with assistance | Adjusts management plans according to standard guidelines and toxicities | Adjusts management plans based on response to treatment, side effects of the treatment, and comorbidities | Adjusts management plans based on anticipation and recognition of subtle toxicities and long-term sequelae and/or changes in patient preferences and goals | Serves as an expert in developing and implementing pathways that influence management plans |
| | | | | |
| Comments: | | | Not Yet C Not Applic | ompleted Level 1 |

| Patient Care | 5: Com | petence | in Proc | edures: |
|---------------------|--------|---------|---------|---------|
|---------------------|--------|---------|---------|---------|

- Performance of Bone Marrow Biopsies and Aspirations
- Assessment and Interpretation of Complete Blood Count
- Interpretation of Peripheral Blood Smears
- Use of Systemic Therapies through all Therapeutic Routes

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | |
|--|---|---|---|---|--|
| Discusses the indications for and assists with all required procedures | Performs all required procedures, with direct supervision | Competently performs all required procedures, with indirect supervision | Proficiently and independently performs all required procedures | Serves as an expert for all required procedures and their complications | |
| Discusses potential procedural complications | Recognizes complications of procedures and enlists help | Manages complications of procedures, with supervision | Anticipates and independently manages complications of procedures | | |
| | | | | | |
| Comments: Not Yet Completed Level 1 Not Applicable | | | | | |

Patient Care

| The fellow is demonstrating satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training |
|---|
| program. He or she is demonstrating a learning trajectory that anticipates the achievement of competency for unsupervised practice that |
| includes the delivery of safe, effective, patient-centered, timely, efficient, and equitable care. |
| |

|) | Yes | No | (| Conditional | on l | mprovement |
|---|-----|----|---|-------------|------|------------|
| | | | | | | |

| Medical Knowledge 1: Non-Malignant Hematology (includes Pathophysiology, Diagnostics, Prognostic Information, and Treatment) | | | | | |
|--|---|--|--|-----------------------------------|--|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | |
| Demonstrates basic knowledge of specialty disorders | Demonstrates expanding knowledge of specialty disorders and development of clinical reasoning | Demonstrates sufficient knowledge of specialty disorders and clinical reasoning skills to determine evidence-based interventions | Synthesizes advanced knowledge of specialty disorders and uses clinical reasoning skills to develop personalized interventions | Serves as a subject matter expert | |
| | | | | | |
| Comments: | | | Not Yet C Not Applic | ompleted Level 1 | |

| Medical Knowledge 2: N | Malignant Hematology (inclu | ıdes Pathophysiology, Dia | gnostics, Prognostic Infor | mation, and Treatment) |
|---|---|--|--|-----------------------------------|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Demonstrates basic knowledge of specialty disorders | Demonstrates expanding knowledge of specialty disorders and development of clinical reasoning | Demonstrates sufficient knowledge of specialty disorders and clinical reasoning skills to determine evidence-based interventions | Synthesizes advanced knowledge of specialty disorders and uses clinical reasoning skills to develop personalized interventions | Serves as a subject matter expert |
| | | | | |
| Comments: | | | Not Yet Co | ompleted Level 1 |

| Medical Knowledge 3: S Level 1 | Level 2 | Ides Pathophysiology, Dia | gnostics, Prognostic Infor | mation, and Treatment) Level 5 |
|---|---|--|--|-----------------------------------|
| Demonstrates basic knowledge of specialty disorders | Demonstrates expanding knowledge of specialty disorders and development of clinical reasoning | Demonstrates sufficient knowledge of specialty disorders and clinical reasoning skills to determine evidence- based interventions | Synthesizes advanced knowledge of specialty disorders and uses clinical reasoning skills to develop personalized interventions | Serves as a subject matter expert |
| | | | | |
| Comments: | | | Not Yet C Not Applic | ompleted Level 1 |

| Medical Knowledge 4: Scholarly Activity | | | | | |
|--|---|---|---|--|--|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | |
| Identifies areas worthy of scholarly investigation | Formulates a scholarly plan under supervision of a mentor | Presents products of scholarly activity at local meetings | Disseminates products of scholarly activity at regional or national meetings, and/or submits an abstract to regional, state, or national meetings | Publication of independent research that has generated new medical knowledge, educational programs, or process improvement | |
| | | | | | |
| Comments: | | | Not Yet Co Not Applic | ompleted Level 1 | |

Medical Knowledge

| The fellow is demonstrating satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training |
|---|
| program. He or she is demonstrating a learning trajectory that anticipates the achievement of competency for unsupervised practice that |
| ncludes the delivery of safe, effective, patient-centered, timely, efficient, and equitable care. |
| |

| Yes | No | Conditional | on Im | provemen |
|-----|----|-------------|-------|----------|
| | | | | |

| Systems-Based Practice 1: Patient Safety | | | | |
|--|---|--|---|---|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Demonstrates knowledge of common patient safety events | Identifies system factors that lead to patient safety events | Participates in the analysis of patient safety events | Conducts analysis of patient safety events and offers error prevention strategies | Actively engages teams and processes to modify systems to prevent patient safety events |
| Demonstrates knowledge of how to report patient safety events | Reports patient safety events through institutional reporting systems (simulated or actual) | Participates in disclosure of patient safety events to patients and families (simulated or actual) | Leads disclosure of patient safety events to patients and families with documentation (simulated or actual) | Role models or mentors others in the disclosure of patient safety events |
| | | | | |
| Comments: | | | Not Yet C | completed Level 1 |

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|---|---|---|---|
| Demonstrates knowledge of basic quality improvement methodologies and metrics | Describes local quality improvement initiatives | Participates in local quality improvement initiatives | Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project | Creates, implements, and assesses quality improvement initiatives at the institutional or community level |
| | | | | |

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|--|--|--|---|
| Demonstrates knowledge of care coordination | Coordinates care of patients in routine clinical situations effectively using the roles of their interprofessional teams | Coordinates care of patients in complex clinical situations effectively using the roles of their interprofessional teams | Role models effective coordination of patient- centered care among different disciplines and specialties | Analyzes the process of care coordination and leads in the design and implementation of improvements |
| Identifies key elements for safe and effective transitions of care and hand-offs | Performs safe and effective transitions of care/hand-offs in routine clinical situations | Performs safe and effective transitions of care/hand-offs in complex clinical situations | Role models and advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems, including outpatient settings | Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes |
| | | | | |

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| Level 1 | e 4: System Navigation for F | Level 3 | Level 4 | Level 5 |
|--|--|---|--|--|
| Demonstrates knowledge of population and community health care needs and disparities | Identifies specific population and community health care needs and disparities | Identifies local resources to meet community health care needs and disparities | Adapts practice to provide for the needs of specific populations | Leads innovations and advocates for populations and communities with health care disparities |
| | | | | |
| Comments: | | | Not Yet C | ompleted Level 1 |

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|--|---|---|--|--|
| Identifies basic financial barriers for individual patients and basic financial components of the health care system | Considers financial barriers and quality of care when ordering diagnostic or therapeutic interventions | Incorporates value (quality/costs) into shared decision making, with interprofessional team input | Manages financial factors that affect a patient's access to care and decision making | Role models and teaches patients and interprofessional team members to consider value when making diagnostic and therapeutic recommendations |
| Identifies key components of the complex health care system | Describes how components of a complex health care system are inter-related, and how this impacts ordering therapeutic interventions | Discusses how individual practice and the broader system affect each other | Manages various components of the complex health care system to provide efficient and effective patient care | Advocates for or leads systems change that enhances high-value, efficient, and effective patient care |
| | | | | |

Systems-Based Practice

The fellow is demonstrating satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training program. He or she is demonstrating a learning trajectory that anticipates the achievement of competency for unsupervised practice that includes the delivery of safe, effective, patient-centered, timely, efficient, and equitable care.

| Yes | No | Conditional on Improvement |
|-----|----|----------------------------|

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|--|---|--|--|
| With assistance, accesses available evidence and practice guidelines for patient care | Independently identifies available evidence and practice guidelines for patient care | Critically appraises evidence and applies to patient care | Applies best available evidence, even in the face of insufficient and/or conflicting information | Serves as a role model to critically appraise and apply evidence to patient care |
| | | | | |

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|--|--|---|---|--|
| ldentifies gaps in knowledge and performance | Reflects on the factors which contribute to gaps between expectations and actual performance | Institutes changes to narrow the gaps between expectations and actual performance | Intentionally seeks performance data to narrow the gaps between expectations and actual performance | Role models reflective practice |
| Actively seeks opportunities to improve | Designs and implements a learning plan, with assistance | Independently creates and implements a learning plan | Measures the effectiveness of the learning plan and makes appropriate changes | Facilitates the design and implementation of learning plans for others |
| | | | | |
| Comments: | | | Not Vot C | ompleted Level 1 |

Practice-Based Learning and Improvement

The fellow is demonstrating satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training program. He or she is demonstrating a learning trajectory that anticipates the achievement of competency for unsupervised practice that includes the delivery of safe, effective, patient-centered, timely, efficient, and equitable care.

| Yes | No | Conditional o | n Improvement |
|-----|----|---------------|---------------|

| Professionalism 1: Professional Behavior and Ethical Principles | | | | |
|--|--|---|--|--|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Demonstrates knowledge of common ethical principles and potential triggers for professionalism lapses Describes when and how to appropriately report professionalism lapses | Analyzes straightforward situations using ethical principles Recognizes and takes responsibility for own professionalism lapses | Manages and resolves complex ethical situations, including personal lapses, with assistance | Intervenes and uses appropriate resources to prevent and manage professionalism lapses and dilemmas in self and others | Coaches others when their behavior fails to meet professional expectations |
| Comments: | | | | |
| | | | Not Yet C | Completed Level 1 |

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| Professionalism 2: Accountability/Conscientiousness | | | | | |
|---|--|---|--|---|--|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | |
| Takes responsibility for failure to complete tasks | Performs tasks in a timely manner or provides notification when unable to complete tasks | Performs tasks in a timely manner with appropriate attention to detail in complex or stressful situations | Takes responsibility in situations that impact the ability of team members to complete tasks and responsibilities in a timely manner | Exceeds expectations for supporting team responsibilities | |
| | | | | | |
| Comments: | | | Not Yet C | completed Level 1 | |

| Professionalism 3: Fellov | w Well-Being | | | |
|--|---|--|---|--|
| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Recognizes status of personal and professional well-being, with assistance | Independently recognizes status of personal and professional well-being | With assistance, proposes a plan to optimize personal and professional well-being | Independently develops a plan to optimize personal and professional well-being | Role models the continual ability to monitor and address personal and professional well-being Advocates for institutional changes to support well-being |
| | | | | |
| Comments: | | | Not Yet C | ompleted Level 1 |
| | | 's well-being, but to ensure ears rs impact well-being, and ava | | |
| program. He or she is demo | nstrating a learning trajector, , effective, patient-centered, | the knowledge, skill, and attit y that anticipates the achieve timely, efficient, and equitable t | ment of competency for un | |

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|---|---|---|--|
| Identifies common barriers to effective communication | Identifies complex barriers to effective communication | Reflects on personal biases while attempting to minimize communication barriers | Proactively improves communication by addressing barriers including patient and personal biases | Role models communication that addresses barriers |
| Recognizes the need to adjust communication strategies based on context | Verifies patient/family understanding of the clinical situation to optimize effective communication | With guidance, uses shared decision making to align patient/family values, goals, and preferences with treatment options to make a personalized care plan | Independently, uses shared decision making to make a personalized care plan | Role models shared decision making in patient/family communication, including those with a high degree of uncertainty/conflict |
| | | | | |

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|--|---|---|--|
| Uses respectful communication (verbal, non-verbal) with all members of the health care team | Communicates effectively within and across all health care teams | Adapts communication style within and across all health care teams to ensure mutual understanding | Coordinates recommendations from different members of the health care team to optimize patient care | Role models flexible communication strategies that solicits and values input from all health care team members, resolving conflict when needed |
| Demonstrates openness to feedback | Responsive to feedback | Seeks and provides performance feedback | Uses feedback to improve own performance and provides actionable feedback to team members | Role models giving and receiving of feedback |
| | | | | |

| information in the patient record diagnor reason | nstrates organized ostic and medical ning through notes patient record | Documentation reflects level of complexity and severity of disease | Documentation reflects medical reasoning, | Role models optimal documentation |
|--|--|--|---|---|
| | patient record | , | patient preferences, and management recommendations and plans | |
| personal health forms | priately selects of communication on context | Communication includes key stakeholders | Achieves written or verbal communication that is exemplary | Guides departmental or institutional communication policies |
| | | | | |

Interpersonal and Communication Skills

The fellow is demonstrating satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training program. He or she is demonstrating a learning trajectory that anticipates the achievement of competency for unsupervised practice that includes the delivery of safe, effective, patient-centered, timely, efficient, and equitable care.

| Yes | No | Conditional on | Improvement |
|-----|----|----------------|-------------|

Overall Clinical Competence

| This rating represents the assessment of the fellow's development of overall clinical competence during this year of training: |
|--|
| Superior: Far exceeds the expected level of development for this year of training |
| Satisfactory: Always meets and occasionally exceeds the expected level of development for this year of training |
| Conditional on Improvement: Meets some developmental milestones but occasionally falls short of the expected level of development for this year of training. An improvement plan is in place to facilitate achievement of competence appropriate to the level of training. |
| Unsatisfactory: Consistently falls short of the expected level of development for this year of training. |