

# Hematology Milestones for the Middle East



January 2019

## The Hematology Milestones for the Middle East

The Milestones are designed only for use in evaluation of fellows in the context of their participation in ACGME-I-accredited 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. 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.

## Milestones Reporting

This document presents milestones designed for programs to use in semi-annual review of fellow performance and reporting to the ACGME-I. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME-I Competencies organized in a developmental framework from less to more advanced. They are descriptors and targets for fellow performance as a learner moves from entry into their program through graduation.

For each period, review and reporting will involve selecting milestone levels that best describe each fellow's current performance and attributes. Milestones are arranged in numbered levels. Tracking from "Level 1" to "Level 5" is synonymous with moving from novice to expert in the specialty. These levels do not correspond with time in the educational program. Dependent upon previous education and experience, fellows may enter a program at varying points in the Milestones.

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

**Level 1:** The fellow demonstrates milestones expected of an incoming fellow.

**Level 2:** The fellow is advancing and demonstrating additional milestones, but is not yet performing at a mid-fellowship level.

**Level 3:** The fellow continues to advance and demonstrate additional milestones; the fellow consistently demonstrates the majority of milestones targeted for fellowship.

**Level 4:** The fellow has advanced so that he or she now substantially demonstrates the milestones targeted for fellowship. This level is designed as the graduation target.

**Level 5:** The fellow has advanced beyond performance targets set for fellowship and is demonstrating "aspirational" goals, which might describe the performance of someone who has been in practice for several years. It is expected that only a few exceptional fellows will reach this level.

## **Additional Notes**

The “Level 4” Milestones are designed as the graduation *target* and *do not* represent a graduation *requirement*. Making decisions about readiness for graduation is the purview of the program director. Study of Milestones performance data will be required before the ACGME-I and its partners will be able to determine whether milestones in the first four levels appropriately represent the developmental framework, and whether Milestone data overall are of sufficient quality to be used for high-stakes decisions.

*Answers to Frequently Asked Questions about Milestones are posted on the ACGME-I website.*

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

Systems-Based Practice 1: Patient Safety and Quality Improvement				
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 analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	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 (actual or simulated)	Participates in disclosure of patient safety events to patients and families (simulated or actual)	Discloses patient safety events to patients and families (simulated or actual)	Role models or mentors others in the disclosure of patient safety events
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes local quality improvement initiatives (e.g., community vaccination rate, infection rate, smoking cessation)	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
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not yet achieved Level 1 <input type="checkbox"/>

Selecting a response box in the middle of a level implies that milestones in that level and in lower levels have been substantially demonstrated.

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
<p>Accesses data and gathers a history standard for general internal medicine</p> <p>Performs a physical examination standard for general internal medicine</p>	<p>Gathers a disease-specific history, with assistance</p> <p>Performs a disease-specific physical examination, with assistance</p>	<p>Accesses data from multiple sources and collects disease-specific history, including psychosocial issues, from the patient and family</p> <p>Completes a disease-specific physical examination</p>	<p>Consistently synthesizes data from multiple sources and collects a disease-specific history from the patient and family</p> <p>Consistently completes a disease-specific physical examination</p>	<p>Role models gathering and synthesis of clinical information</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Patient Care 2: Diagnoses and Assigns Stage and Severity of Hematology Disorders				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Generates a differential diagnosis expected of a graduating internal medicine resident</p> <p>Orders testing without clear differential diagnosis</p>	<p>Generates an informed differential diagnosis, with assistance</p> <p>Orders and interprets diagnostic studies, with assistance</p>	<p>Generates an informed differential diagnosis</p> <p>Orders and interprets diagnostic studies, including molecular studies</p>	<p>Generates a diagnosis and assigns stage and disease severity informed by evidence-based studies and guidelines</p>	<p>Role models the generation of a diagnosis, including rare variants and atypical presentations, and assigns stage and disease severity, informed by evidence-based studies and guidelines</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			Not Yet Achieved Level 1 <input type="checkbox"/>	

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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			Not Yet Achieved Level 1 <input type="checkbox"/>	

<b>Patient Care 5: Competence in Procedures including:</b> <ul style="list-style-type: none"> <li>• Performance of bone marrow biopsies and aspirations;</li> <li>• Assessment and interpretation of complete blood count;</li> <li>• Interpretation of peripheral blood smears, and</li> <li>• Use of systemic therapies through all therapeutic routes</li> </ul>				
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	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Medical Knowledge 2: 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 utilizes clinical reasoning skills to develop personalized interventions	Serves as a subject matter expert
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			Not Yet Achieved Level 1 <input type="checkbox"/>	

Medical Knowledge 3: 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 (Middle East) or international meetings, and/or submits an abstract to regional (Middle East) or international meetings	Publication of independent research that has generated new medical knowledge, educational programs or process improvement
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			Not Yet Achieved Level 1 <input type="checkbox"/>	

Systems-Based Practice 1: Patient Safety and Quality Improvement				
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 analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	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)	Discloses patient safety events to patients and families (simulated or actual)	Role models or mentors others in the disclosure of patient safety events
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes local quality improvement initiatives (e.g., community vaccination rate, infection rate, smoking cessation)	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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			Not Yet Achieved Level 1 <input type="checkbox"/>	

Systems-Based Practice 2: System Navigation for Patient-Centered 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 using the roles of the 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
Demonstrates knowledge of population and community health needs and disparities	Identifies specific population and community health needs and inequities for their local population	Uses local resources effectively to meet the needs of a patient population and community	Participates in changing and adapting practice to provide for the needs of specific populations	Leads innovations and advocates for populations and communities with health care inequities
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Systems-Based Practice 3: Physician Role in Health Care Systems				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies components of the complex health care system	Describes the physician's role and how the interrelated components of complex health care system impact patient care	Analyzes how personal practice affects the system (e.g., length of stay, readmission rates, clinical efficiency)	Manages the interrelated components of the complex health care systems for efficient and effective patient care	Advocates for or leads change to enhance systems for high-value, efficient, and effective patient care
Describes basic health payment systems, including government, private, public, and uninsured care and different practice models	Delivers care informed by patient specific payment model	Uses shared decision making in patient care, taking into consideration payment models	Advocates for patient care understanding the limitations of each patient's payment model (e.g., community resources, patient assistance resources)	Participates in advocacy activities for health policy to better align payment systems with high-value care
		Identifies resources and effectively plans for transition to practice (e.g., information technology, legal, billing and coding, financial, personnel)	Describes basic elements needed to transition to practice (e.g., contract negotiations, malpractice insurance, government regulation, compliance)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates how to access and use available evidence, and incorporate patient preferences and values in order to care for a routine patient	Articulates clinical questions and elicits patient preferences and values in order to guide evidence-based care	Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients	Critically appraises and applies evidence even in the face of uncertainty and conflicting evidence to guide care, tailored to the individual patient	Coaches others to critically appraise and apply evidence for complex patients, and/or participates in the development of guidelines
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Accepts responsibility for personal and professional development by establishing goals</p> <p>Identifies the factors that contribute to gap(s) between expectations and actual performance</p> <p>Actively seeks opportunities to improve</p>	<p>Demonstrates openness to performance data (feedback and other input) in order to inform goals</p> <p>Analyzes and reflects on the factors that contribute to gap(s) between expectations and actual performance</p> <p>Designs and implements a learning plan, with prompting</p>	<p>Seeks performance data episodically, with adaptability and humility</p> <p>Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance</p> <p>Independently creates and implements a learning plan</p>	<p>Intentionally seeks performance data consistently, with adaptability and humility</p> <p>Challenges assumptions and considers alternatives in narrowing the gap(s) between expectations and actual performance</p> <p>Uses performance data to measure the effectiveness of the learning plan and improves it when necessary</p>	<p>Role models consistently seeking performance data, with adaptability and humility</p> <p>Coaches others on reflective practice</p> <p>Facilitates the design and implementation of learning plans for others</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Professionalism 1: Professional Behavior and Ethical Principles				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Identifies and describes potential triggers for professionalism lapses</p> <p>Describes when and how to appropriately report professionalism lapses, including strategies for addressing common barriers</p> <p>Demonstrates knowledge of the ethical principles underlying informed consent, surrogate decision making, advance directives, confidentiality, error disclosure, stewardship of limited resources, and related topics</p>	<p>Demonstrates insight into professional behavior in routine situations</p> <p>Takes responsibility for own professionalism lapses</p> <p>Analyzes straightforward situations using ethical principles</p>	<p>Demonstrates professional behavior in complex or stressful situations</p> <p>Analyzes complex situations using ethical principles</p> <p>Recognizes need to seek help in managing and resolving complex ethical situations</p>	<p>Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in self and others</p> <p>Recognizes and uses appropriate resources for managing and resolving ethical dilemmas as needed (e.g., ethics consultations, literature review, risk management/legal consultation)</p>	<p>Coaches others when their behavior fails to meet professional expectations</p> <p>Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Professionalism 2: Accountability/Conscientiousness				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Takes responsibility for failure to complete tasks and responsibilities, identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future</p> <p>Responds promptly to requests or reminders to complete tasks and responsibilities</p>	<p>Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations</p> <p>Recognizes situations that may impact own ability to complete tasks and responsibilities in a timely manner</p>	<p>Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations</p> <p>Proactively implements strategies to ensure that the needs of patients, teams, and systems are met</p>	<p>Recognizes situations that may impact others' ability to complete tasks and responsibilities in a timely manner</p>	<p>Takes ownership of system outcomes</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Professionalism 3: Self-Awareness and Help-Seeking				
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	Coaches others when emotional responses or limitations in knowledge/skills do not meet professional expectations
Recognizes limits in the knowledge/skills of self or team, with assistance	Independently recognizes limits in the knowledge/skills of self or team  Demonstrates appropriate help-seeking behaviors	With assistance, proposes a plan to remediate or improve limits in the knowledge/skills of self or team	Independently develops a plan to remediate or improve limits in the knowledge/skills of self or team	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Uses language and non-verbal behavior to demonstrate respect and establish rapport</p> <p>Identifies common barriers to effective communication (e.g., language, disability) while accurately communicating own role within the health care system</p> <p>Identifies the need to adjust communication strategies based on assessment of patient/family expectations and understanding of their health status and treatment options</p>	<p>Establishes a therapeutic relationship in straightforward encounters using active listening and clear language</p> <p>Identifies complex barriers to effective communication (e.g., health literacy, cultural)</p> <p>Organizes and initiates communication with patients/families by introducing stakeholders, setting the agenda, clarifying expectations, and verifying an understanding of the clinical situation</p>	<p>Establishes a therapeutic relationship in challenging patient encounters</p> <p>When prompted, reflects on personal biases while attempting to minimize communication barriers</p> <p>With guidance, sensitively and compassionately delivers medical information; elicits patient/family values, goals and preferences; and acknowledges uncertainty and conflict</p>	<p>Easily establishes therapeutic relationships, with attention to patient/family concerns and context, regardless of complexity</p> <p>Independently recognizes personal biases while attempting to proactively minimize communication barriers</p> <p>Independently uses shared decision making to align patient/family values, goals, and preferences with treatment options to make a personalized care plan</p>	<p>Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships</p> <p>Role models self-awareness practice while identifying teaching a contextual approach to minimize communication barriers</p> <p>Role models shared decision making in patient/family communication in situations with a high degree of uncertainty/conflict</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Interpersonal and Communication Skills 2: Interprofessional and Team Communication				
Level 1	Level 2	Level 3	Level 4	Level 5
Respectfully requests a consultation	Clearly and concisely requests a consultation	Checks own understanding of consultant recommendations	Coordinates recommendations from different members of the health care team to optimize patient care	Role models flexible communication strategies that value input from all health care team members, resolving conflict when needed
Respectfully receives a consultation request	Clearly and concisely responds to a consultation request	Checks understanding of recommendations when providing consultation	Communicates feedback and constructive criticism to superiors	Facilitates regular health care team-based feedback in complex situations
Uses language that values all members of the health care team	Communicates information effectively with all health care team members  Solicits feedback on performance as a member of the health care team	Uses active listening to adapt communication style to fit team needs  Communicates concerns and provides feedback to peers and learners		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

Interpersonal and Communication Skills 3: Communication within Health Care Systems				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Accurately records information in the patient record</p> <p>Safeguards patient personal health information</p> <p>Communicates through appropriate channels as required by institutional policy (e.g., patient safety reports, cell phone/pager usage)</p>	<p>Demonstrates organized diagnostic and therapeutic reasoning through notes in the patient record</p> <p>Demonstrates accurate, timely, and appropriate use of documentation shortcuts</p> <p>Documents required data in formats specified by institutional policy</p> <p>Respectfully communicates concerns about the system</p>	<p>Concisely reports diagnostic and therapeutic reasoning in the patient record</p> <p>Appropriately selects direct (e.g., telephone, in-person) and indirect (e.g., progress notes, text messages) forms of communication based on context</p> <p>Uses appropriate channels to offer clear and constructive suggestions to improve the system</p>	<p>Communicates clearly, concisely, in a timely manner, and in an organized written form, including anticipatory guidance</p> <p>Produces written or verbal communication (e.g., patient notes, email, etc.) that serves as an example for others to follow</p> <p>Initiates difficult conversations with appropriate stakeholders to improve the system</p>	<p>Models feedback to improve others' written communication</p> <p>Guides departmental or institutional communication around policies and procedures</p> <p>Facilitates dialogue regarding systems issues among larger community stakeholders (e.g., institution, health care system, field)</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>