

Hematology Milestones for Singapore



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The Hematology Milestones for Singapore

The Milestones are designed only for use in evaluation of fellows in the context of their participation in ACGME International (ACGME-I)-accredited fellowship programs. The Milestones provide a framework for assessing the development of the fellow in key dimensions of physician competence in a subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competence, 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 demonstrates 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 demonstrates the majority of milestones targeted for residency in this sub-competency.

- 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.

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth				
Level 1	Level 2	Level 3	Level 4	Level 5
Accepts responsibility for personal and professional development by establishing goals	Demonstrates openness to performance data (feedback and other input) in order to inform goals	Seeks performance data episodically, with adaptability and humility	Intentionally seeks performance data consistently, with adaptability and humility	Role models consistently seeking performance data, with adaptability and humility
Identifies the factors that contribute to gap(s) between expectations and actual performance	Analyzes and reflects on the factors that contribute to gap(s) between expectations and actual performance	Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance	Challenges assumptions and considers alternatives in narrowing the gap(s) between expectations and actual performance	Coaches others on reflective practice
Actively seeks opportunities to improve	Designs and implements a learning plan, with prompting	Independently creates and implements a learning plan	Uses performance data to measure the effectiveness of the learning plan and, when necessary, improves it	Facilitates the design and implementation of learning plans for others
<input type="checkbox"/>	<input type="checkbox"/>	<input 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).

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Patient Care 1: Gathers and Synthesizes Essential and Accurate Information to Define Each Patient's Clinical Problem(s)				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Occasionally collects accurate historical data</p> <p>Performs an incomplete physical exam, or misses key physical exam findings</p> <p>Relies exclusively on documentation of others to generate own database or differential diagnosis or is overly reliant on secondary data</p> <p>Requires assistance to determine the patient's central clinical problems</p> <p>Requires prompting to recognize potentially life-threatening problems</p>	<p>Consistently acquires accurate and relevant histories</p> <p>Consistently performs accurate and appropriately thorough physical exams</p> <p>Recognizes patient's central clinical problem or develops limited differential diagnoses</p>	<p>Acquires accurate histories in an efficient, prioritized, and hypothesis-driven fashion</p> <p>Performs accurate physical exams that are targeted to the patient's problems</p> <p>Uses and synthesizes collected data to define a patient's central clinical problem(s) to generate a prioritized differential diagnosis and problem list</p>	<p>Obtains relevant historical subtleties, including sensitive information that informs the differential diagnosis</p> <p>Identifies subtle or unusual physical exam findings</p> <p>Efficiently uses all sources of secondary data to inform differential diagnosis</p> <p>Effectively uses history and physical examination skills to minimize the need for further diagnostic testing</p>	<p>Role models and teaches the effective use of history and physical examination skills to minimize the need for further diagnostic testing</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"/>

Hematology Milestones for Singapore

Patient Care 2: Develops and Achieves Comprehensive Management Plan for Each Patient				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Care plans are inappropriate or inaccurate</p> <p>Requires prompting to react to situations that require urgent or emergency care</p> <p>Occasionally seeks additional guidance when needed</p>	<p>Occasionally develops an appropriate care plan</p> <p>Seeks additional guidance and/or consultation as appropriate</p>	<p>Consistently develops appropriate care plan</p> <p>Recognizes situations requiring urgent or emergency care</p>	<p>Appropriately modifies care plans based on patient's clinical course, additional data, patient preferences, and cost-effectiveness principles</p> <p>Recognizes disease presentations that deviate from common patterns and require complex decision-making, incorporating diagnostic uncertainty</p> <p>Manages complex acute and chronic conditions</p>	<p>Role models and teaches complex and patient-centered care</p> <p>Develops customized, prioritized care plans for the most complex patients, incorporating diagnostic uncertainty and cost-effectiveness principles</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"/>

Hematology Milestones for Singapore

Patient Care 3: Manages Patients with Progressive Responsibility and Independence				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Requires direct supervision in the delivery of patient care</p> <p>Requires direct supervision to manage patients who require urgent or emergency care</p> <p>Requires direct supervision for all patient management decisions</p> <p>Rarely supervise care provided by other members of the physician-led team</p>	<p>Requires direct supervision to ensure patient safety and quality care</p> <p>Requires direct supervision to manage problems or common chronic diseases in all appropriate clinical settings</p> <p>Occasionally provides preventive care in all appropriate clinical settings</p> <p>Requires direct supervision to manage patients with straightforward diagnoses in all appropriate clinical settings</p> <p>Able to manage complex inpatients or patients requiring intensive care</p> <p>Occasionally supervise care provided by other members of the physician-led team</p>	<p>Requires indirect supervision to ensure patient safety and quality care</p> <p>Provides appropriate preventive care and chronic disease management in all appropriate clinical settings</p> <p>Provides comprehensive care for single or multiple diagnoses in all appropriate clinical settings</p> <p>Under supervision, provides appropriate care in the intensive care unit</p> <p>Initiates management plans for urgent or emergency care</p> <p>Regularly supervises care provided by other members of the physician-led team</p>	<p>Independently manages patients across applicable inpatient, outpatient, and ambulatory clinical settings who have a broad spectrum of clinical disorders, including undifferentiated syndromes</p> <p>Seeks additional guidance and/or consultation as appropriate</p> <p>Appropriately manages situations requiring urgent or emergency care</p> <p>Effectively supervises the implementation and management decisions of the team in all appropriate clinical settings</p> <p>Effectively supervises care provided by other members of the physician-led team</p>	<p>Effectively manages unusual, rare, or complex disorders in all appropriate clinical settings</p> <p>Is fully competent in the implementation and management decisions of the team in all appropriate clinical settings</p> <p>Competently supervises care provided by other members of the physician-led team</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"/>

Hematology Milestones for Singapore

Patient Care 4: Demonstrates Skill in Performing and Interpreting Invasive Procedures				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Attempts to perform invasive procedures without sufficient technical skill or supervision</p> <p>Occasionally recognizes cases in which invasive procedures are unwarranted or unsafe</p> <p>Requires prompting to discuss procedure indications, processes, or potential risks with patients</p> <p>Requires prompting to engage the patient in the informed consent process, and/or does not effectively describe risks and benefits of procedures</p>	<p>Possesses insufficient technical skill for safe completion of common invasive procedures with appropriate supervision</p> <p>Occasionally adheres to patient safety and comfort when performing invasive procedures</p> <p>Rarely recognizes appropriate patients, indications, and associated risks in the performance of invasive procedures</p> <p>Recognizes the need to obtain informed consent for procedures, but ineffectively obtains it</p> <p>Understands and communicates ethical principles of informed consent</p>	<p>Possesses basic technical skill for the completion and interpretation of some common invasive procedures with appropriate supervision</p> <p>Frequently manages patient safety and comfort when performing invasive procedures</p> <p>Occasionally recognizes appropriate patients, indications, and associated risks in the performance of invasive procedures</p> <p>Obtains and documents informed consent</p>	<p>Consistently demonstrates technical skill to perform and interpret invasive procedures successfully and safely</p> <p>Maximizes patient comfort and safety when performing invasive procedures</p> <p>Consistently recognizes appropriate patients, indications, and associated risks in the performance of invasive procedures</p> <p>Effectively obtains and documents informed consent in challenging circumstances (e.g., language or cultural barriers)</p> <p>Quantifies evidence for risk-benefit analysis during obtainment of informed consent for complex procedures or therapies</p>	<p>Demonstrates skill to independently perform and interpret complex invasive procedures that are anticipated for future practice</p> <p>Demonstrates expertise to teach and supervise others in the performance of invasive procedures</p> <p>Designs consent instrument for a human subject research study; files an Institution Review Board (IRB) application</p> <p>Competently recognizes appropriate patients, indications, and associated risks in the performance of invasive procedures</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"/>

Hematology Milestones for Singapore

Patient Care 5: Demonstrates Skill in Performing and Interpreting Non-Invasive Procedures and/or Testing				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Occasionally recognizes patients for whom non-invasive procedures and/or testing is not warranted or is unsafe</p> <p>Requires supervision to perform or interpret non-invasive procedures and/or testing without sufficient skill or supervision</p> <p>Requires prompting to discuss procedure indications, processes, or potential risks with patients</p> <p>Requires prompting to engage the patient in the informed consent process and/or does not effectively describe risks and benefits of procedures</p>	<p>Possesses insufficient skill to safely perform and interpret non-invasive procedures and/or testing with appropriate supervision</p> <p>Rarely adheres to patient safety and comfort when performing non-invasive procedures and/or testing procedures</p> <p>Recognizes need to obtain informed consent for procedures but ineffectively obtains it</p> <p>Understands and communicates ethical principles of informed consent</p>	<p>Occasionally recognizes appropriate patients, indications, and associated risks in the utilization of non-invasive procedures and/or testing</p> <p>Occasionally integrates procedures and/or testing results with clinical features in the evaluation and management of patients</p> <p>Can safely perform and interpret selected non-invasive procedures and/or testing procedures with minimal supervision</p> <p>Occasionally recognizes high-risk findings and artifacts/normal variants</p> <p>Obtains and documents informed consent</p>	<p>Consistently recognizes appropriate patients, indications, limitations, and associated risks in use of non-invasive procedures and/or testing</p> <p>Integrates procedures and/or testing results with clinical findings in the evaluation and management of patients</p> <p>Recognizes procedures and/or testing results that indicate high-risk state or adverse prognosis</p> <p>Recognizes artifacts and normal variants</p> <p>Consistently performs and interprets non-invasive procedures and/or testing in a safe and effective manner</p> <p>Effectively obtains and documents informed</p>	<p>Demonstrates skill to independently perform and interpret complex non-invasive procedures and/or testing</p> <p>Demonstrates expertise to teach and supervise others in the performance of advanced non-invasive procedures and/or testing</p> <p>Designs consent instrument for a human subject research study; files an IRB application</p>

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			<p>consent in challenging circumstances (e.g., language or cultural barriers)</p> <p>Quantifies evidence for risk-benefit analysis during obtainment of informed consent for complex procedures and/or tests</p>						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:								Not Yet Achieved Level 1	<input type="checkbox"/>

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Patient Care 6: Requests and Provides Consultative Care				
Level 1	Level 2	Level 3	Level 4	Level 5
Rarely manages patients as a consultant to other physicians/health care teams	Provides consultation services for patients with clinical problems	Provides consultation services for patients with basic and complex clinical problems	Provides consultation services for patients with basic and complex clinical problems	Provides consultation services for patients with very complex clinical problems requiring extensive risk assessment
Rarely formulates a clinical question for a consultant to address	Asks meaningful clinical questions that guide the input of consultants	Mostly able to integrate recommendations from other consultants to effectively manage patient care	Appropriately integrates recommendations from other consultants to effectively manage patient care	Models management of discordant recommendations from multiple consultants
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

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Patient Care 7: Laboratory Consultation				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Understands the use of test results in generating a consultative report</p> <p>Answers basic hematopathology questions with assistance</p>	<p>Prepares a draft consultative report (verbal or written)</p> <p>Answers routine hematopathology questions, drawing upon appropriate resources</p>	<p>Prepares a full consultative report with a written opinion for common diseases under supervision</p> <p>Answers more complex hematopathology questions, drawing upon appropriate resources</p>	<p>Independently prepares a full consultative written report with comprehensive review of medical records on common and uncommon hematopathology disorders</p> <p>Suggests evidence-based management, prognosis, and therapeutic recommendations based on the consultation</p>	<p>Proficient in hematopathology consultations with comprehensive review of medical records</p> <p>Proficient at answering complex hematopathology questions</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"/>

Hematology Milestones for Singapore

Medical Knowledge 1: Possesses Clinical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
Possesses insufficient scientific, socioeconomic, and behavioral knowledge required to provide care for common medical conditions and basic preventive care	Possesses basic scientific, socioeconomic, and behavioral knowledge required to provide care for common medical conditions and basic preventive care	Possesses the scientific, socioeconomic, and behavioral knowledge required to provide care for common medical conditions and basic preventive care	Possesses the scientific, socioeconomic, and behavioral knowledge required to provide care for complex medical conditions and comprehensive preventive care	Possesses the scientific, socioeconomic, and behavioral knowledge required to successfully diagnose and treat medically uncommon, ambiguous, and complex conditions
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

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Medical Knowledge 2: Knowledge of Diagnostic Testing and Procedures				
Level 1	Level 2	Level 3	Level 4	Level 5
Has a foundational knowledge to apply diagnostic testing and procedures to patient care	<p>Occasionally interprets basic diagnostic tests accurately</p> <p>Rarely understands the concepts of pre-test probability and test performance characteristics</p> <p>Minimally understands the rationale and risks associated with common procedures</p>	<p>Consistently interprets basic diagnostic tests accurately</p> <p>Occasionally understands the concepts of pre-test probability and test performance characteristics</p> <p>Fully understands the rationale and risks associated with common procedures</p>	<p>Interprets complex diagnostic tests accurately while accounting for limitations and biases</p> <p>Knows the indications for, and limitations of, diagnostic testing and procedures</p> <p>Understands the concepts of pre-test probability and test performance characteristics</p> <p>Teaches the rationale and risks associated with common procedures and anticipates potential complications of procedures</p>	<p>Anticipates and accounts for subtle nuances of interpreting diagnostic tests and procedures</p> <p>Pursues knowledge of new and emerging diagnostic tests and procedures</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"/>

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Medical Knowledge 3: Scholarship				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates a basic knowledge of scientific inquiry or scholarly productivity</p> <p>Occasionally performs a literature search in the specialty</p> <p>Requires prompting to engage in critical thinking regarding clinical practice, quality improvement, patient safety, education, or research</p>	<p>Interested in scholarly activity, but does not initiate or follow through</p> <p>Performs a literature search using relevant scholarly sources to identify pertinent articles</p> <p>Is aware of basic statistical concepts, but has incomplete understanding of their application; inconsistently identifies methodological flaws</p> <p>Communicates rudimentary details of scientific work, including his or her own scholarly work; needs to improve ability to present in small groups</p>	<p>Identifies areas worthy of scholarly investigation and formulates a plan under supervision of a mentor</p> <p>Critically reads scientific literature and identifies major methodological flaws and inconsistencies within or between publications</p> <p>Understands and can apply basic statistical concepts, and can identify potential analytic methods for data or problem assessment</p> <p>Effectively presents at journal club, quality improvement meetings, clinical conferences, and/or can effectively describe and discuss his or her own scholarly work or research</p>	<p>Formulates ideas worthy of scholarly investigation</p> <p>Collaborates with other investigators to design and complete a project related to clinical practice, quality improvement, patient safety, education, or research</p> <p>Critiques specialized scientific literature effectively</p> <p>Dissects a problem into its many component parts and identifies strategies for solving</p> <p>Uses analytical methods of the field effectively</p> <p>Presents scholarly activity at local or regional meetings, and/or submits an abstract summarizing scholarly work to regional/state/ national</p>	<p>Independently formulates novel and important ideas worthy of scholarly investigation</p> <p>Leads a scholarly project advancing clinical practice, quality improvement, patient safety, education, or research</p> <p>Obtains independent research funding</p> <p>Critiques specialized scientific literature at a level consistent with participation in peer review</p> <p>Employs optimal statistical techniques</p> <p>Teaches analytic methods in chosen field to peers and others</p> <p>Effectively presents scholarly work at national and international meetings</p>

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			meetings, and/or publishes non-peer-reviewed manuscript(s) (reviews, book chapters)	Publishes peer-reviewed manuscript(s) containing scholarly work (clinical practice, quality improvement, patient safety, education, or research)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

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Medical Knowledge 4: Teaching				
Level 1	Level 2	Level 3	Level 4	Level 5
Actively observes teaching of other learners and medical technologists	Assists in teaching other learners diagnostic hematopathology	Actively teaches other learners diagnostic hematopathology Participates in education of medical technologists and other health care personnel Teaches medical students	Independently teaches other learners, medical technologists, and other health care personnel diagnostic hematopathology	Teaches diagnostic hematopathology to other fully trained pathologists Develops educational programs for technologists
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Achieved Level 1 <input type="checkbox"/>

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Medical Knowledge 5: Laboratory Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Knows basics of normal hematopoietic and lymphoid systems, coagulation system, and immunologic concepts</p> <p>Understands basic methods used in varied aspects of laboratory hematology and other hematopathology-related testing (flow cytometry, cytogenetic analysis, and molecular testing) and the concept of test utilization</p> <p>Knows definitions of common lab hematology tests and expected test results in non-disease situations</p>	<p>Interprets individual abnormal results and suggests appropriate follow-up testing</p> <p>Knows implications of clusters of tests in non-complex situations</p> <p>Knows basic laboratory findings for major and less common benign and malignant hematologic disorders, those in their differential diagnosis, and those that impact hematologic parameters based on standard texts</p> <p>Draws upon more current literature to enhance interpretation on a case by case basis</p>	<p>Suggests appropriate panel of hematologic testing for non-complex situations and knows how to interpret the results and the clinical/therapeutic implications</p> <p>Suggests appropriate follow-up testing for abnormal results of common tests</p> <p>Discusses implications of clusters of tests in more complex situations</p> <p>Troubleshoots aberrant-appearing results</p> <p>Knows standard and more state-of-the art issues related to major and less common hematologic disorders, those in their differential diagnosis, and those that impact hematologic parameters, having integrated current literature with what is in standard texts</p>	<p>Independently demonstrates knowledge of appropriate panel of hematologic testing for majority of situations, interprets the results and knows the clinical/therapeutic implications</p> <p>Knows how to obtain consultation to deal with the most complex cases</p> <p>Demonstrates in-depth knowledge of normal and abnormal hematopoiesis/lymphopoiesis and hemostasis together with how non-hematopoietic disorders affect the hematopoietic/lymphoid system and hemostasis</p>	<p>Proficient at selecting and interpreting hematologic testing, including knowledgeable of its clinical implications</p> <p>Demonstrates knowledge of active areas of investigation related to hematologic disorders that may have clinical implications in the future</p> <p>Serves as an expert consultant for general pathologists and clinicians</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"/>

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Medical Knowledge 6: Interprets and Demonstrates Diagnostic Knowledge for Tissue-Based Specimens and Peripheral Blood and Fluid Samples Requiring an “Anatomic” Diagnosis				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Understands basic methods used in diagnostic hematopathology (morphology, flow cytometry, molecular/cytogenetic testing)</p> <p>Knows criteria for major benign and malignant hematopathologic disorders and those in their differential diagnosis based on standard texts</p> <p>Can access basic literature to enhance interpretation</p>	<p>Knows what ancillary testing to order in non-complex cases</p> <p>Interprets individual components used in diagnostic hematopathology and draws tentative conclusions in non-complex cases</p> <p>Knows criteria for less common benign and malignant hematopathologic disorders and those in their differential diagnosis based on standard texts</p> <p>Draws upon more current literature to enhance diagnostic interpretation on a case-by-case basis</p>	<p>Knows what ancillary testing to order in non-complex and more complex cases</p> <p>Incorporates all elements from a multi-parameter approach, including integration of literature into a diagnosis in non-complex cases and provides a limited differential diagnosis in more complex cases</p> <p>Knows current issues related to major and less common benign and malignant hematopathologic disorders and those in their differential diagnosis, having integrated current literature with what is in standard texts</p>	<p>Orders appropriate ancillary testing required to make definitive and precise diagnoses</p> <p>Independently arrives at definitive diagnoses in most cases, and knows how to obtain consultation to deal with the most complex cases</p>	<p>Proficient at analyses of ancillary tests used in diagnostic hematopathology</p> <p>Proficient at using multi-parameter approach to make hematopathologic diagnoses even in complex circumstances</p> <p>Knows active areas of investigation related to hematopathologic disorders that may have clinical implications in the future</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"/>

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

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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	Analyses 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/handoffs 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"/>

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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"/>

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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 to take care of a routine patient	Articulates clinical questions and elicits patient preferences and values 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"/>	

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

Hematology Milestones for Singapore

Professionalism 1: Professional Behavior and Ethical Principles				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies and describes potential triggers for professionalism lapses	Demonstrates insight into professional behavior in routine situations	Demonstrates professional behavior in complex or stressful situations	Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in self and others	Coaches others when their behavior fails to meet professional expectations
Describes when and how to appropriately report professionalism lapses, including strategies for addressing common barriers	Takes responsibility for own professionalism lapses	Analyzes complex situations using ethical principles	Recognizes and uses appropriate resources for managing and resolving ethical dilemmas as needed (e.g., ethics consultations, literature review, risk management/legal consultation)	Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution
Demonstrates knowledge of the ethical principles underlying informed consent, surrogate decision making, advance directives, confidentiality, error disclosure, stewardship of limited resources, and related topics	Analyzes straightforward situations using ethical principles	Recognizes need to seek help in managing and resolving complex ethical situations		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

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"/>

Hematology Milestones for Singapore

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"/>

Hematology Milestones for Singapore

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>Establishes a therapeutic relationship in straightforward encounters using active listening and clear language</p>	<p>Establishes a therapeutic relationship in challenging patient encounters</p>	<p>Easily establishes therapeutic relationships, with attention to patient/family concerns and context, regardless of complexity</p>	<p>Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships</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 complex barriers to effective communication (e.g., health literacy, cultural)</p>	<p>When prompted, reflects on personal biases while attempting to minimize communication barriers</p>	<p>Independently recognizes personal biases while attempting to proactively minimize communication barriers</p>	<p>Role models self-awareness practice while identifying teaching a contextual approach to minimize communication barriers</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>Organizes and initiates communication with patient/family by introducing stakeholders, setting the agenda, clarifying expectations, and verifying an understanding of the clinical situation</p>	<p>With guidance, sensitively and compassionately delivers medical information; elicits patient/family values, goals and preferences; and acknowledges uncertainty and conflict</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>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"/>

Hematology Milestones for Singapore

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"/>

Hematology Milestones for Singapore

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