

# Transplant Hepatology Milestones

The Accreditation Council for Graduate Medical Education



Second Revision: November 2020 First Revision: October 2014

## Transplant Hepatology 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.

## **Transplant Hepatology Milestones**

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American Association for the Study of Liver Diseases

American Board of Internal Medicine

American College of Gastroenterology

American Gastroenterological Association

American Society for Gastrointestinal Endoscopy

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 vi).

#### **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 <a href="https://www.acgme.org">www.acgme.org</a>, 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 3: Physician Role in Health Care Systems				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies key components of the complex health care system (e.g., hospital, skilled nursing facility, finance, personnel, technology)	Describes how components of a complex health care system are inter-related, and how this impacts patient care	Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)	Manages various components of the complex health care system to provide efficient and effective patient care and transition of care	Advocates for or leads systems change that enhances high value, efficient and effective patient care and transition of care
Describes basic elements of health payment systems (e.g., government, private, public, uninsured care) and practice models	Distinguishes specialty- specific elements of health payment systems (e.g., office, endoscopy, inpatient)	Engages with patients in shared-decision making, informed by each patient's payment models	Leads and advocates for practice and population with consideration of the limitations of each patient's payment model	Leads health policy advocacy activities related to access and payment reform
Comments:			Critical De	eficiencies
Selecting a res	sponse box in the el implies that		onse box on the line in ndicates that milestones	3
	hat level and in lower en substantially	in lower levels h demonstrated as milestones in the		

Patient Care 1: Data Gathering and Non-Procedural Diagnostic Testing					
Level 1	Level 2	Level 3	Level 4	Level 5	
Accesses data and gathers a history standard for general internal medicine	Gathers a symptom- specific history and data, with assistance	Gathers data from multiple sources and collects symptom-specific history, including psychosocial issues	Consistently synthesizes data from multiple sources	Role models gathering and synthesis of clinical information	
Performs a physical examination standard for general internal medicine	Performs a symptom- specific physical examination, with assistance	Performs a symptom- specific physical examination, without assistance	Consistently performs a symptom-specific physical examination		
Selects and interprets diagnostic tests, with significant assistance	Selects and interprets diagnostic tests, with moderate assistance	Selects and interprets diagnostic tests, with minimal assistance and general awareness of cost effectiveness and patient preferences	Independently selects and interprets diagnostic tests with adjustment based on cost effectiveness and patient preferences	Interprets subtleties of diagnostic test results to improve patient care	
Comments:  Critical Deficiencies  Not Yet Assessable					

Patient Care 2: Patient Management in Gastrointestinal and Liver Disease					
Level 1	Level 2	Level 3	Level 4	Level 5	
Develops focused care plans, with moderate assistance	Develops focused care plans, with minimal assistance	Independently develops focused care plans	Modifies care plans based on patient's clinical course, additional data, patient preferences, and cost- effectiveness principles	Develops customized, prioritized care plans for complex patients, incorporating diagnostic uncertainty and cost- effectiveness principles	
Requires direct supervision to prioritize and deliver patient care	Manages patients with straightforward diagnoses, with minimal assistance	Independently manages patients with straightforward diagnoses	Independently manages patients with complex and undifferentiated syndromes, and recognizes disease presentations that deviate from common patterns	Effectively manages unusual, rare, or complex disorders	
Recognizes situations requiring urgent or emergent care, with significant assistance	Recognizes situations requiring urgent or emergent care, with minimal assistance	Manages urgent and emergent situations, with minimal assistance	Independently manages urgent and emergent situations		
Comments:  Critical Deficiencies  Not Yet Assessable					

Level 1	Level 2	Level 3	Level 4	Level 5
Performs peri-procedural assessment, including required diagnostic testing and selection of equipment, with moderate assistance	Performs peri-procedural assessment, including required diagnostic testing and selection of equipment, with minimal assistance	Independently performs peri-procedural assessment, including required diagnostic testing and selection of equipment in standard cases	Independently performs peri-procedural assessment, including required diagnostic testing in complex cases	Teaches others to perform liver biopsy
Only performs portions of the procedure, and recognizes complications, with significant assistance	Performs significant portions of the procedure and recognizes complications, with moderate assistance	Performs the complete procedure and recognizes complications, with minimal assistance	Independently performs the complete procedure with patient comfort and adequate specimen collection and recognizes complications	
Comments:			Critical Da	ficiencies
			Critical De Not Yet A	

Medical Knowledge 1: Clinical Knowledge of Gastrointestinal and Liver Diseases (Non-Procedural)					
Level 1	Level 2	Level 3	Level 4	Level 5	
Demonstrates basic knowledge of specialty disorders	Demonstrates expanding knowledge of specialty disorders	Demonstrates broad knowledge of specialty disorders	Synthesizes advanced knowledge of specialty disorders to develop personalized interventions	Demonstrates expert knowledge within a focused area	
Demonstrates basic knowledge of diagnostic, therapeutic/ pharmacologic categories for prevention and treatment of disease	Demonstrates expanding knowledge of diagnostic, therapeutic/pharmacologic options for prevention and treatment of diseases, including indications, contraindications, limitations, complications, alternatives, and techniques	Demonstrates broad knowledge of diagnostic, therapeutic/ pharmacologic options for prevention and treatment of diseases	Synthesizes advanced knowledge to select diagnostic, therapeutic/pharmacologic options for prevention and treatment of disease		
Comments:  Critical Deficiencies  Not Yet Assessable					

Medical Knowledge 2: Clinical Reasoning					
Level 1	Level 2	Level 3	Level 4	Level 5	
Creates a focused differential diagnosis with moderate assistance	Creates a focused differential diagnosis with minimal assistance	Independently creates a succinct, plausible, and prioritized differential diagnosis appropriate for the presentation of a patient with an uncomplicated presentation	Independently creates a succinct, plausible, and prioritized differential diagnosis appropriate for the presentation of a patient with complex and/or multiple problems	Recognizes rare presentations of common diagnoses and/or presentations of rare diagnoses	
	Differential diagnosis remains fixed despite new information	Consistently incorporates new information to adjust differential diagnosis	Consistently evaluates and adjusts differential diagnosis integrating available new information and recognizing the factors that lead to bias	Aware of cognitive biases and demonstrates behaviors to overcome them	
Comments:  Critical Deficiencies  Not Yet Assessable					

### **Medical Knowledge**

The fellow is demonstrating satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training program. The fellow 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

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	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	Participates in local quality improvement initiatives and describes quality improvement regulatory requirements relevant to transplantation (e.g., Center for Medicare and Medicaid Services, Organ Procurement and Transplantation Network, organ procurement organizations)	Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project	Creates, implements, and assesses quality improvement initiatives at the national, institutional, or community level
Comments:  Critical Deficiencies				

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 team members	Coordinates care of patients in complex clinical situations effectively using the roles of the interprofessional team members	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 basic knowledge of population and community health needs and disparities related to organ allocation	Demonstrates basic knowledge of liver organ allocation	Identifies specific Model for End-Stage Liver Disease (MELD) exceptions and process for allocation of livers for transplantation	Advocates effectively for patients who are listed for liver transplantation including use of appropriate MELD exceptions	
Comments:  Critical Deficiencies				

Systems-Based Practice 3: Physician Role in Health Care Systems					
Level 1	Level 2	Level 3	Level 4	Level 5	
Identifies key components of the complex health care system (e.g., hospital, skilled nursing facility, finance, personnel, technology)	Describes how components of a complex health care system are interrelated, and how this impacts patient care	Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)	Manages various components of the complex health care system to provide efficient and effective patient care and transitions of care	Advocates for or leads systems change that enhances high-value, efficient, and effective patient care and transitions of care	
Describes basic elements of health payment systems (e.g., government, private, public, uninsured care) and practice models	Distinguishes specialty- specific elements of health payment systems (e.g., office, endoscopy, inpatient)	Engages with patients in shared decision making, informed by each patient's payment models	Leads and advocates for practice and population with consideration of the limitations of each patient's payment model	Leads health policy advocacy activities related to access and payment reform	
Comments:  Critical Deficiencies					

## **Systems-Based Practice**

The fellow is demonstrating satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training program. The fellow 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.

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 care for 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		
Comments:  Critical Deficiencies						

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates openness to performance data (feedback and other input) to inform goals	Accepts responsibility for personal and professional development by establishing 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	Consistently evaluates, and challenges one's own assumptions, and considers alternative strategies to narrow 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, adjusts it	Facilitates the design and implementation of learning plans for others

Practice-Based	Learning and	d Improvement
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The fellow 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.

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Yes	No	Conditional	on Im	iprovemen <sup>.</sup>

Professionalism 1: Professional Behavior and Ethical Principles						
Level 1	Level 2	Level 3	Level 4	Level 5		
Demonstrates professional behavior in routine situations	Demonstrates professional behavior in complex or stressful situations	Identifies and demonstrates insight into potential triggers for lapses in professional behavior	Acts to prevent lapses in professional behavior in oneself and others	Coaches others when their behavior fails to meet professional expectations		
Demonstrates knowledge of the ethical principles underlying informed consent, confidentiality, and related topics	Recognizes need to seek help in managing and resolving straightforward ethical situations	Recognizes need to seek help in managing and resolving complex ethical situations	Recognizes and uses appropriate resources for managing and resolving ethical situations 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		
Comments:	Comments:  Critical Deficiencies					

Professionalism 2: Accountability/Conscientiousness						
Level 1	Level 2	Level 3	Level 4	Level 5		
Takes responsibility for failure to complete tasks and responsibilities, identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations	Recognizes and acts upon situations that may impact the team's ability to complete tasks and responsibilities in a timely manner	Takes ownership of system outcomes		
Responds promptly to requests or reminders to complete tasks and responsibilities	Recognizes situations that may impact one's own ability to complete tasks and responsibilities in a timely manner	Proactively implements strategies to ensure that the needs of patients, teams, and systems are met				
Comments:	Comments:  Critical Deficiencies					

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 oneself or team, with assistance	Independently recognizes limits in the knowledge/skills of oneself or the team	With assistance, proposes a plan to remediate or improve limits in the knowledge/skills of oneself or the team	Independently develops a plan to remediate or improve limits in the knowledge/skills of oneself or the team	

This subcompetency is not intended to evaluate a fellow's well-being, but to ensure each fellow has the fundamental knowledge of factors that impact well-being, the mechanisms by which those factors impact well-being, and available resources and tools to improve well-being.

#### **Professionalism**

The fellow is demonstrating satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training program. The fellow 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
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Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates respect and establishes rapport	Establishes a therapeutic relationship in straightforward encounters using active listening and clear language	Establishes a therapeutic relationship in challenging patient encounters using active listening and clear language	Easily establishes therapeutic relationships, with attention to the patient's/patient's family's concerns and context, regardless of complexity	Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships
	Identifies barriers to effective communication (e.g., language, disability) while accurately communicating one's own role within the health care system	When prompted, reflects on personal biases while attempting to minimize communication barriers	Independently recognizes personal biases while attempting to proactively minimize communication barriers	Role models self- awareness while identifying a contextual approach to minimize communication barriers
Recognizes the need to adjust communication strategies based on patient need and context	Verifies patient's/patient's family's understanding of the clinical situation to optimize effective communication	With guidance, uses shared decision making to align the patient's/patient's family's 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 the patient's/patient's family's communication, including those with a high degree of uncertainty/conflict

Level 1	Level 2	Level 3	Level 4	Level 5
Respectfully receives a consultation request	Clearly and concisely responds to a consultation request	Checks understanding of primary team when providing consultation 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
Uses language that values all members of the health care team	Communicates effectively with all health care team members, including inpatient and outpatient providers	Uses active listening to adapt communication style to fit team needs	and resolve conflicts over recommendations	conflict when needed

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	Reports diagnostic and therapeutic reasoning in the patient record in a timely manner	Communicates clearly, concisely, efficiently, and in an organized written form, and provides anticipatory guidance	Models feedback to improve others' written communication
Safeguards patient personal health information	Demonstrates accurate and appropriate use of documentation shortcuts	Appropriately selects direct (e.g., telephone, inperson) and indirect (e.g., progress notes, text messages) forms of communication based on context	Achieves written or verbal communication (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 use)	Respectfully uses appropriate channels to offer clear and constructive suggestions to improve the system	Initiates difficult conversations with appropriate stakeholders in a professional manner to improve the system	Facilitates dialogue regarding systems issues among larger community stakeholders (institution, health care system, field)
	use)		Improve the system	

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The fellow is demonstrating satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training program.  The fellow 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.	