

Hand Surgery Milestones

The Accreditation Council for Graduate Medical Education



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

Hand Surgery Milestones

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American Board of Orthopaedic Surgery

American Board of Plastic Surgery

American Board of Surgery

ACGME Review Committee for Orthopaedic Surgery

ACGME Review Committee for Plastic Surgery

ACGME Review Committee for Surgery

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 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 the educational program just as a senior fellow may be at a lower level later in the 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 resident/fellow.

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

Additional Notes

Level 4 is designed as a graduation *goal* but *does not* represent a graduation *requirement*. Making decisions about readiness for graduation and unsupervised practice is the purview of the program director. Furthermore, Milestones 2.0 include revisions and changes that preclude using Milestones as a sole assessment in high-stakes decisions (i.e., determination of eligibility for certification or credentialing). Level 5 is designed to represent an expert resident/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.

Examples are provided for some milestones within this document. Please note: the examples are not the required element or outcome; they are provided as a way to share the intent of the element.

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 resident who performs a procedure independently must, at a minimum, be supervised through oversight.

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

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

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

Patient Care 1: Traumati	c Bone and Joint Injury			
Level 1	Level 2	Level 3	Level 4	Level 5
Develops a treatment plan for simple fractures and dislocations, with assistance	Develops a treatment plan for simple fractures and dislocations	Develops a treatment plan for moderately complex fractures and dislocations	Develops treatment plan for complex fractures and dislocations	Develops a treatment plan for complex revision, malunion, nonunion, and dislocation procedures
Performs simple fracture and dislocation procedures, with assistance	Performs simple fracture and dislocation procedures	Performs moderately complex fracture and dislocation procedures	Performs complex fracture and dislocation procedures	Performs complex revision, malunion, nonunion, and dislocation procedures
Identifies patients with abnormal post-operative course	Manages simple complications	Identifies and formulates a plan for complications requiring surgical management	Performs surgical management for routine complications	Performs surgical management for complex complications
		\mathbb{R}		
Comments: Selecting a res	sponse box in the	Selecting a response box	Not Yet A	ompleted Level 1 ssessable
middle of a lev milestones in t		between levels indicates in lower levels have been demonstrated as well as milestones in the higher l	substantially some	

Patient Care 1: Traumati	c Bone and Joint Injury				
Level 1	Level 2	Level 3	Level 4	Level 5	
Develops a treatment plan for simple fractures and dislocations, with assistance	Develops a treatment plan for simple fractures and dislocations	Develops a treatment plan for moderately complex fractures and dislocations	Develops treatment plan for complex fractures and dislocations	Develops a treatment plan for complex revision, malunion, nonunion, and dislocation procedures	
Performs simple fracture and dislocation procedures, with assistance	Performs simple fracture and dislocation procedures	Performs moderately complex fracture and dislocation procedures	Performs complex fracture and dislocation procedures	Performs complex revision, malunion, nonunion, and dislocation procedures	
Identifies patients with abnormal post-operative course	Manages simple complications	Identifies and formulates a plan for complications requiring surgical management	Performs surgical management for routine complications	Performs surgical management for complex complications	
Comments:				ompleted Level 1	

Patient Care 2: Soft Tiss	ue Trauma			
Level 1	Level 2	Level 3	Level 4	Level 5
Develops a treatment plan for simple soft tissue procedures, with assistance	Develops a treatment plan for simple soft tissue procedures	Develops a treatment plan for moderately complex soft tissue procedures	Develops treatment plan for complex soft tissue procedures	Develops a treatment plan for complex trauma, microsurgery, tendon reconstruction, and revision soft tissue procedures
Performs simple soft tissue procedures, with assistance	Performs simple soft tissue procedures	Performs moderately complex soft tissue procedures	Performs complex soft tissue procedures	Performs complex microsurgical reconstruction and tendon transfers
Identifies patients with abnormal recovery	Manages simple complications	Identifies and formulates a plan for complications requiring surgical management	Performs surgical management for routine complications	Performs surgical management for complex complications
Comments:	Comments: Not Yet Completed Level 1 Not Yet Assessable			

Patient Care 3: Arthritis					
Level 1	Level 2	Level 3	Level 4	Level 5	
Develops a treatment plan for simple arthritis conditions, with assistance	Develops a treatment plan for simple arthritis conditions	Develops a treatment plan for moderately complex arthritis conditions	Develops treatment plan for complex arthritis conditions	Develops a treatment plan for complex revision, arthritis procedures	
Performs simple arthritis procedures, with assistance	Performs simple arthritis procedures	Performs moderately complex arthritis procedures	Performs complex arthritis procedures	Performs complex revision arthritis procedures	
Identifies patients with abnormal post-operative course	Manages simple complications	Identifies and formulates a plan for complications requiring surgical management	Performs surgical management for routine complications	Performs surgical management for complex complications	
Comments:				ompleted Level 1 ssessable	

Patient Care 4: Nerve				
Level 1	Level 2	Level 3	Level 4	Level 5
Develops a treatment plan for simple nerve conditions, with assistance	Develops a treatment plan for simple nerve conditions	Develops a treatment plan for moderately complex nerve conditions	Develops treatment plan for complex nerve conditions	Develops a treatment plan for complex revision nerve procedures
Performs simple nerve procedures, with assistance	Performs simple nerve procedures	Performs moderately complex nerve procedures	Performs complex nerve procedures	Performs complex revision nerve procedures
Identifies patients with abnormal post-operative course	Manages simple complications	Identifies and formulates a plan for complications requiring surgical management	Performs surgical management for routine complications	Performs surgical management for complex complications
Comments:	Comments: Not Yet Completed Level 1 Not Yet Assessable			

Patient Care 5: Elective ((Acquired and Congenital)			
Level 1	Level 2	Level 3	Level 4	Level 5
Develops a treatment plan for simple elective conditions, with assistance	Develops a treatment plan for simple elective conditions	Develops a treatment plan for moderately complex elective conditions	Develops treatment plan for complex elective conditions	Develops a treatment plan for complex revision elective procedures
Performs simple elective procedures, with assistance	Performs simple elective procedures	Performs moderately complex elective procedures	Performs complex elective procedures	Performs complex revision elective procedures
Identifies patients with abnormal post-operative course	Manages simple complications	Identifies and formulates a plan for complications requiring surgical management	Performs surgical management for routine complications	Performs surgical management for complex complications
Comments:				ompleted Level 1

Medical Knowledge 1: C	linical Decision-Making			
Level 1	Level 2	Level 3	Level 4	Level 5
Articulates a methodology for clinical reasoning	Demonstrates clinical reasoning to determine treatment goals	Synthesizes information to make clinical decisions for straightforward conditions	Efficiently synthesizes information and integrates reflection to make clinical decisions for complex conditions	Incorporates clinical reasoning to improve care pathways
Identifies resources to direct clinical decisions	Selects and prioritizes relevant resources based on scenario to inform decisions	Integrates evidence- based information to inform diagnostic decision-making for straightforward conditions	Integrates evidence- based information to inform diagnostic decision-making for complex conditions	Designs research to explore alternative care pathways
Comments:			Not Yet Co Not Yet A	ompleted Level 1

Medical Knowledge 2: A	natomy and Physiology of	Hand Conditions		
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies anatomy and pathophysiology of straightforward conditions	Demonstrates knowledge of pathoanatomy, disease classification systems, and natural history for straightforward conditions	Applies knowledge of pathoanatomy and pathophysiology to explain the effects of surgical or non-surgical treatment on patient outcomes for straightforward conditions	Applies knowledge of pathoanatomy and pathophysiology to treatment options and patient outcomes for complex conditions	Disseminates knowledge on the varying patterns of disease presentation, natural history, and treatment options
Comments:				ompleted Level 1 ssessable

Medical Knowledge 3: Di	agnostics			
Level 1	Level 2	Level 3	Level 4	Level 5
Gathers and reports basic diagnostic test results	Describes indications for standard diagnostic testing	Prioritizes, orders, and interprets straightforward diagnostic tests	Prioritizes, orders, and interprets complex diagnostic studies	Uses complex diagnostic approaches in novel situations
Comments:			Not Yet Co	ompleted Level 1

Medical Knowledge 4: R	ehabilitation			
Level 1	Level 2	Level 3	Level 4	Level 5
Lists the indications for basic rehabilitation	Describes different forms of rehabilitation for bone, joint, tendon, and nerve	Prioritizes, orders, and interprets individualized rehabilitation, including multi-modal rehabilitation protocol for common pathologies	Prioritizes, orders, and interprets individualized rehabilitation, including multi-modal rehabilitation protocol for complex pathologies	Prioritizes, orders, and interprets rehabilitation after complex revision surgery
Comments:			Not Yet C Not Yet A	ompleted Level 1

Systems-based Practice	1: Patient Safety and Quali	ty 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 their families (simulated or actual)	Discloses patient safety events to patients and their 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., 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
Comments:			Not Yet C	completed Level 1

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 interprofessional team members	Coordinates care of patients in complex clinical situations effectively using the roles of interprofessional team members	Teaches effective coordination of patient-centered care among multidisciplinary teams	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 straightforward clinical situations	Performs safe and effective transitions of care/hand-offs in complex clinical situations	Advocates for safe and effective transitions of care/hand-offs	Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes

Systems-Based Practice 3: Physician Role in Health Care Systems				
Level 1	Level 2	Level 3	Level 4	Level 5
Describes basic health payment systems, including government, private, public, and uninsured care, as well as different practice models	Describes how working within the health care system impacts patient care, including billing and coding	Analyzes how personal practice affects the system (e.g., length of stay, readmission rates, clinical efficiency)	Uses shared decision- making in patient care, taking into consideration costs to the patient	Participates in advocacy activities for health policy
Comments: Not Yet Completed Level 1				

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 the care of a straightforward condition	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 conditions	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 conditions and/or participates in the development of guidelines	
Comments:	Comments: Not Yet Completed Level 1				

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 feedback and other input to inform goals	Responds to feedback and other input episodically, with adaptability and humility	Actively seeks feedback and other input with adaptability and humility	Role models consistently seeking feedback and other input with adaptability and humility
Identifies the strengths, deficiencies, and limitations in one's knowledge and expertise	Analyzes and reflects on the strengths, deficiencies, and limitations in one's knowledge and expertise to design a learning plan, with assistance	Creates and implements a learning plan to optimize educational and professional development	Uses ongoing reflection, feedback, and other input to measure the effectiveness of the learning plan and, when necessary, improves it	Coaches others on reflective practice
Comments: Not Yet Completed Level 1				

Professionalism 1: Professional Behavior and Ethical Principles				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies and describes inciting events for professionalism lapses or deficiencies	Demonstrates insight into professional behavior in straightforward situations	Demonstrates professional behavior in complex situations	Recognizes situations that may promote professional deficiencies and intervenes to prevent lapses in oneself and others	Coaches others when their behavior fails to meet professional expectations
Demonstrates knowledge of the ethical principles underlying patient care (e.g., informed consent, surrogate decision- making, advance directives, confidentiality, error disclosure, stewardship of limited resources, and related topics)	Applies ethical principles in straightforward situations and takes responsibility for lapses	Applies ethical principles and recognizes the need to seek help in complex situations	Recognizes and uses appropriate resources for managing and resolving ethical dilemmas (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: Not Yet Completed Level 1				

Professionalism 2: Accountability/Conscientiousness				
Level 1	Level 2	Level 3	Level 4	Level 5
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	Appropriately delegates some tasks or responsibilities in routine situations, with oversight	Appropriately delegates some tasks or responsibilities in complex or stressful situations, with oversight	Teaches concepts of or counsels others on accountability or conscientiousness in the workplace
Responds promptly to requests or reminders to complete tasks and responsibilities	Identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future	Recognizes situations that may impact one's own or others' ability to complete tasks and responsibilities in a timely manner in routine situations	Recognizes situations that may impact one's own or others' ability to complete tasks and responsibilities in a timely manner in complex or stressful situations	On a departmental or system-wide level, advocates to improve systems that ensure patients' needs are met within the hospital, upon discharge, and in follow- up
Comments: Not Yet Completed Level 1				

Professionalism 3: Well-Being				
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes the importance of addressing personal and professional well-being (e.g., physical and	Lists available resources for personal and professional well-being	Discusses a plan to promote personal and professional well-being with institutional support	Independently develops a plan to promote personal and professional well-being	Creates institutional level interventions that promote colleagues' well-being
emotional health)	Describes institutional resources that are meant to promote well-being	Recognizes which institutional factors affect well-being	Describes institutional factors that positively and/or negatively affect well-being	Describes institutional programs designed to examine systemic contributors to burnout
Comments: Not Yet Completed Level 1				

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.

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates respect and establishes rapport with patients and their families (e.g., situational awareness of language, disability, health literacy level, cultural differences)	Establishes a therapeutic relationship in straightforward encounters	Establishes a therapeutic relationship in challenging encounters (e.g., shared decision-making)	Facilitates difficult discussions to patients and their families, (e.g., explaining complications, therapeutic uncertainty)	Coaches others in the facilitation of difficult conversations
Communicates with patients and their families in an understandable and respectful manner	Identifies barriers to effective communication (e.g., health literacy, cultural differences)	When prompted, reflects on personal biases while attempting to minimize communication barriers	Recognizes biases and integrates the patient's viewpoint and autonomy to ensure effective communication	Mentors others in situational awareness and critical self-reflection
Demonstrates basic understanding of the informed consent process	Answers questions about straightforward treatment plans, with assistance	Counsels patients through the decision-making process for straightforward conditions	Counsels patients through the decision-making process for complex conditions	Counsels patients through the decision-making process for uncommon conditions
Comments: Not Yet Completed Level 1				

Interpersonal and Communication Skills 2: Interprofessional and Team Communication					
Level 1	Level 2	Level 3	Level 4	Level 5	
Recognizes the value and role of each team member and respectfully interacts with all members of health care team	Communicates in a professional and productive manner to facilitate teamwork (e.g., active listening, updates in timely fashion)	Actively recognizes and mitigates communication barriers and biases with the health care team	Facilitates respectful communications and conflict resolution with the multidisciplinary health care team	Exemplar of effective and respectful communication strategies	
Comments: Not Yet Completed Level 1					

Interpersonal and Comm	Level 2	nication within Health Car	e Systems Level 4	Level 5
Accurately records information in the patient record while safeguarding patient personal health information	Demonstrates accurate, timely, and efficient use of the electronic health record to communicate with the health care team	Concisely reports diagnostic and therapeutic reasoning while incorporating relevant outside data	Independently communicates via written or verbal methods based on urgency and context	Facilitates improved written and verbal communication of others
	Uses appropriate communication methods (e.g., face-to-face, voice, electronic)	Respectfully initiates communications about concerns in the system	Uses appropriate channels to offer clear and constructive suggestions to improve the system	Guides departmental or institutional communication around policies and procedures
Comments:			Not Yet C	completed Level 1