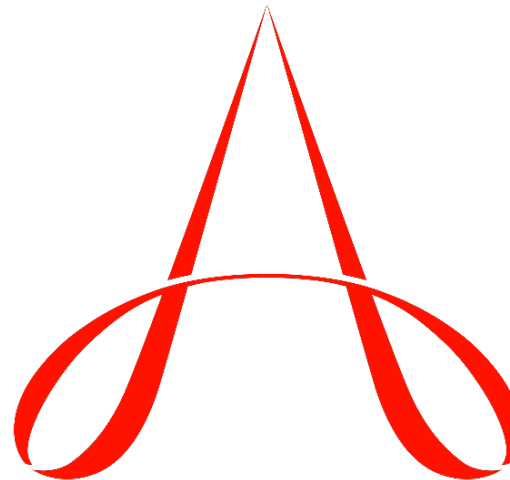




Orthopaedic Sports Medicine Milestones

The Accreditation Council for Graduate Medical Education



ACGME

Implementation Date: July 2022

Second Revision: April 2022

First Revision: December 2013

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Orthopaedic Sports Medicine 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 competence 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.

Orthopaedic Sports Medicine Milestones Work Group

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

American Board of Orthopaedic Surgery

Review Committee for Orthopaedic 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 resident/fellow performance throughout their educational program.

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

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

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

Additional Notes

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

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

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

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

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

Systems-Based Practice 2: System Navigation for Patient-Centered Care				
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	Role models effective coordination of patient-centered care among multidisciplinary team members	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	Role models and 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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: Not Yet Completed Level 1 <input type="checkbox"/>				

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

Selecting a response box on the line in between levels indicates that milestones in lower levels have been substantially demonstrated as well as **some** milestones in the higher level(s).

Patient Care 1: History and Physical Examination, Imaging Interpretation, and Diagnosis				
Level 1	Level 2	Level 3	Level 4	Level 5
Obtains appropriate medical history and performs basic orthopaedic examination, with guidance	Obtains history of sports-related conditions or injuries and performs orthopaedic examination for common sports conditions	Obtains history of sports-related conditions or injuries and performs orthopaedic examination and recognizes complex or high-risk sports conditions	Independently obtains history of sports-related conditions or injuries and consistently performs complex examinations of sports conditions	Develops and publishes on a new physical examination maneuver
Identifies diagnostic testing for common orthopaedic sports conditions	Interprets diagnostic testing for orthopaedic sports conditions, with guidance	Orders and interprets diagnostic testing for complex orthopaedic sports conditions, with guidance	Independently interprets diagnostic testing for complex orthopaedic sports conditions	Develops novel imaging techniques for sports medicine
Develops a basic differential diagnosis pertinent to common orthopaedic conditions, with guidance	Develops a basic differential diagnosis pertinent to orthopaedic sports conditions, with guidance	Develops a comprehensive differential diagnosis based on history and physical examination findings, with guidance	Independently develops a comprehensive differential diagnosis based on history and physical examination findings	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Completed Level 1 <input type="checkbox"/>
				Not Yet Assessable <input type="checkbox"/>

Patient Care 2: Non-Operative Management				
Level 1	Level 2	Level 3	Level 4	Level 5
Generates a basic treatment plan for common orthopaedic sports conditions, with direct supervision	Generates a basic treatment plan for common orthopaedic sports conditions, with indirect supervision	Generates and modifies a treatment plan for complex orthopaedic sports conditions, with guidance	Independently generates and modifies individualized treatment plans	Develops and/or disseminates a novel treatment protocol
Manages patients with basic orthopaedic sports conditions (e.g., knee injection, bracing, physical therapy prescription), with direct supervision	Manages patients with basic orthopaedic sports conditions, with indirect supervision	Independently manages patients and adapts a management plan for basic orthopaedic sports conditions	Independently manages patients and adapts management plan for complex orthopaedic sports conditions	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				
				Not Yet Completed Level 1 <input type="checkbox"/>
				Not Yet Assessable <input type="checkbox"/>

Patient Care 3: Arthroscopic Operative Skills				
Level 1	Level 2	Level 3	Level 4	Level 5
Develops a simple surgical plan, with indirect supervision	Develops a surgical plan that includes identification of potential challenges and technical complexities, with guidance	Develops a surgical plan for complex procedures, including contingencies for complications, with guidance	Independently develops a surgical plan for complex procedures, including contingencies for complications	
Demonstrates basic surgical skills (e.g., wound closure) and assists with procedures	Establishes portals and access and performs diagnostic knee and shoulder arthroscopy, with indirect supervision	Performs critical steps of knee and shoulder procedures, with guidance; establishes portals and access, and performs hip, elbow, and arthroscopy, with indirect supervision	Independently performs complex knee and shoulder procedures with skill and confidence	Develops novel surgical techniques
Identifies and reports simple complications	Identifies and manages simple complications, with guidance	Identifies and manages complex complications, with guidance	Independently develops a plan for managing complex complications	Contributes to a quality improvement initiative regarding addressing complications at the institution
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			Not Yet Completed Level 1	<input type="checkbox"/>
			Not Yet Assessable	<input type="checkbox"/>

Patient Care 4: Open Operative Skills				
Level 1	Level 2	Level 3	Level 4	Level 5
Develops a simple surgical plan, with indirect supervision	Develops a surgical plan that includes identification of potential challenges and technical complexities, with guidance	Develops a surgical plan for complex procedures, including contingencies for complications, with guidance	Independently develops a surgical plan for complex procedures, including contingencies for complications	
Demonstrates basic surgical skills (e.g., wound closure) and assists with procedures	Performs surgical approach with indirect supervision	Performs critical steps of procedures with guidance	Independently performs complex procedures with skill and confidence	Develops novel surgical techniques
Identifies and reports simple complications	Identifies and manages simple complications with guidance	Identifies and manages complex complications with guidance	Independently develops a plan for managing complex complications	Contributes to quality improvement initiative regarding complications at the institution
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			Not Yet Completed Level 1	<input type="checkbox"/>
			Not Yet Assessable	<input type="checkbox"/>

Patient Care 5: Team Coverage and Athletic Care				
Level 1	Level 2	Level 3	Level 4	Level 5
Observes team/event coverage	Provides team/event coverage, with indirect supervision	Provides team-based care with the athletic healthcare team for athletic teams and/or organizations, with guidance	Independently provides team-based care with the athletic health care team for athletic teams and/or organizations	
Observes care for acute injuries and illness of the athlete on the sidelines	Treats and manages acute injuries and illness of the athlete on the sidelines with instructions for return-to-play, with indirect supervision	Treats and manages acute injuries and illness of the athlete on the sidelines with instructions for return-to-play, with guidance	Independently treats and manages acute injuries and illness of the athlete on the sidelines with instructions for return-to-play	Develops and/or disseminates novel treatments for sideline management
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Completed Level 1 <input type="checkbox"/> Not Yet Assessable <input type="checkbox"/>

Medical Knowledge 1: Orthopaedic Clinical 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	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				
				Not Yet Completed Level 1 <input type="checkbox"/>
				Not Yet Assessable <input type="checkbox"/>

Medical Knowledge 2: Basic Science – Gross Anatomy, Microanatomy, Rehabilitation and Kinesiology, Pathophysiology, Tissue Healing, Inflammation, and Cartilage				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of regional gross anatomy	Demonstrates knowledge of surgical anatomy and pathophysiology	Applies knowledge of anatomy and pathophysiology to explain the effects of surgical or non-surgical treatment on patient outcomes for straightforward conditions	Applies knowledge of anatomy and pathophysiology to explain the effects of surgical or non-surgical treatment on patient outcomes for complex conditions	Develops and/or disseminates knowledge of basic science topics in sports medicine
Demonstrates knowledge of basic kinesiology	Demonstrates knowledge of basic science of injury and rehabilitation after injury or surgery	Applies knowledge of biomechanics of injury and rehabilitation	Applies knowledge of the details of rehabilitation protocols and preventive techniques	
Demonstrates basic knowledge of cellular biology	Demonstrates knowledge of the basic science of inflammation and healing	Applies knowledge of soft tissue healing and cellular mechanisms	Applies knowledge of the details of tissue healing and cellular physiology of treatment modalities	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				
				Not Yet Completed Level 1 <input type="checkbox"/>
				Not Yet Assessable <input type="checkbox"/>

Systems-Based Practice 1: Patient Safety and Quality Improvement				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of common patient safety events	Identifies system factors that lead to patient safety events	Participates in analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	Actively engages teams and processes to modify systems to prevent patient safety events
Demonstrates knowledge of how to report patient safety events	Reports patient safety events through institutional reporting systems (simulated or actual)	Participates in disclosure of patient safety events to patients and 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	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: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

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 interprofessional team members	Coordinates care of patients in complex clinical situations, effectively using the roles of interprofessional team members	Role models effective coordination of patient-centered care among multidisciplinary team members	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	Role models and 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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

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, considering costs to the patient	Participates in advocacy activities for health policy
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

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 preferences, 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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

Professionalism 1: Professional Behavior and Ethical Principles				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates professional behavior in straightforward situations</p> <p>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)</p>	<p>Demonstrates insight into professional behavior in straightforward situations and describes inciting events for lapses in professionalism</p> <p>Applies ethical principles in straightforward situations and takes responsibility for lapses</p>	<p>Demonstrates professional behavior in complex situations</p> <p>Integrates ethical principles and recognizes the need to seek help in complex situations</p>	<p>Recognizes situations that may promote professionalism lapses and intervenes to prevent lapses in oneself and others</p> <p>Recognizes and uses appropriate resources for managing and resolving ethical dilemmas (e.g., ethics consultations, literature review, risk management/legal consultation)</p>	<p>Coaches others when their behavior fails to meet professional expectations</p> <p>Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Comments:</p> <p style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></p>				

Professionalism 2: Accountability/Conscientiousness				
Level 1	Level 2	Level 3	Level 4	Level 5
Reliably arrives to clinical activities on time and describes strategies for ensuring timely task completion	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in straightforward situations	Prioritizes tasks and responsibilities in a timely manner with appropriate attention to detail in complex situations	Recognizes barriers that may impact others' ability to complete tasks and responsibilities in a timely manner	Develops processes to enhance the health care team's ability to efficiently complete patient care tasks and responsibilities
Responds promptly to requests or reminders to complete tasks and responsibilities	Completes tasks and responsibilities without reminders	Proactively completes tasks and responsibilities to ensure that the needs of patients, teams, and systems are met		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

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 emotional health)	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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

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	Establishes a therapeutic relationship in straightforward encounters	Establishes a therapeutic relationship in challenging encounters	Facilitates difficult discussions to patients and their families	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	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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

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 the 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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

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 while safeguarding patient personal health information	Demonstrates accurate, timely, and efficient use of the electronic health record to communicate with members of 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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				