Surgery Milestones

The Accreditation Council for Graduate Medical Education
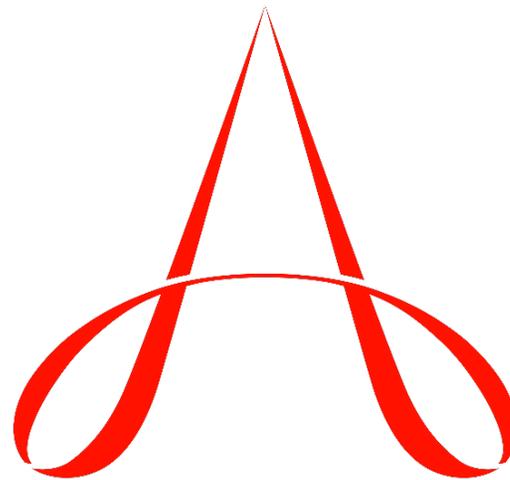
ACGME

Surgery Milestones

The Milestones are designed only for use in evaluation of residents 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 resident 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.

Surgery Milestones

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Milestone Reporting

This document presents the Milestones designed for programs to use in semi-annual review of resident performance and reporting to the ACGME. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME Core Competencies organized in a developmental framework from less to more advanced. They are descriptors and targets for resident performance as a resident moves from entry into residency through graduation. The Review Committee will examine Milestones reporting for each program's residents as one element in the annual accreditation review process to determine whether residents overall are progressing.

For each period, review and reporting will involve selecting the milestone levels that best describe each resident's current performance and attributes. Milestones are arranged into 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 post-graduate year of education.

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

Level 1: The resident demonstrates milestones expected of an incoming resident.

Level 2: The resident is advancing and demonstrates additional milestones, but is not yet performing at a mid-residency level.

Level 3: The resident continues to advance and demonstrate additional milestones, consistently including the majority of milestones targeted for residency.

Level 4: The resident has advanced and now substantially demonstrates the milestones targeted for residency. This level is the graduation target.

Level 5: The resident has advanced beyond performance targets set for residency and is demonstrating "aspirational" goals that might describe the performance of someone who has been in practice for several years. Only a few exceptional residents are expected to reach this level.

Additional Notes

Level 4 is the graduation *target* and does not represent a graduation *requirement*. Making decisions about readiness for graduation is the purview of the residency program director. Study of Milestones performance data is required before the ACGME and its partners can determine whether milestones in the first four levels appropriately represent the developmental framework, and whether Milestones data are of sufficient quality to be used for high-stakes decisions.

Some milestone descriptions include statements about performing independently. These activities must occur in conformity to ACGME supervision guidelines, 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. This Guide provides the intent of each subcompetency, examples for each level, assessment methods or tools, and other resources that are available. This Guide, like examples contained within the Milestones, was designed 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.

Below is an example Set of Milestones for one sub-competency in the same format as the ACGME Report Worksheet. For each reporting period, a resident's performance within each sub-competency will be indicated by selecting the level that best describes that resident'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 multidisciplinary care of patients in routine clinical situations (e.g., dressing change)	Coordinates and/or leads multidisciplinary care of patients in complex clinical situations (e.g., home parenteral nutrition [TPN], ICU)	Coordinates care of patients with barriers to healthcare access (e.g., trauma patient with no access to care) or other disparities in care	Leads in the design and implementation of improvements to care coordination
Performs safe and effective transitions of care/handoffs in routine clinical situations	Performs safe and effective transitions of care/handoffs in complex clinical situations	Supervises safe and effective transitions of care/handoffs of junior residents	Resolves conflicts in transitions of care between teams	Leads in the design and implementation of improvements to transitions of care

Comments:

Not Yet Completed Level 1 ☐

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: Patient Evaluation and Decision Making				
Level 1	Level 2	Level 3	Level 4	Level 5
Gathers necessary information and develops a differential diagnosis for patients in all clinical settings	Evaluates patients; orders and interprets diagnostic testing	Develops a plan to manage straightforward patients (e.g., healthy patients) and conditions (e.g., colon cancer, breast cancer)	Develops a plan to manage complex patients (e.g., patient with multiple comorbidities) and conditions (e.g., hemorrhagic shock)	Develops a clinical pathway or guideline for the management of complex patients and conditions
	Manages non-operative straightforward patients and conditions (e.g., bowel obstruction, diverticulitis)	Adapts management plan for changing clinical situation (e.g., drainage of diverticular abscess)	Manages non-operative complex patients and conditions (e.g., severe pancreatitis)	

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Comments:

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Patient Care 2: Intra-Operative Patient Care – Performance of Procedures

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic skills (e.g., knot tying, suturing)	Performs bedside procedures (e.g., central line, chest tube)	Performs common operations (e.g., hernia, cholecystectomy, appendectomy)	Performs complex operations (e.g., low anterior resection, paraesophegeal hernia, abdominal wall reconstruction)	Performs uncommon complex operations (e.g., Whipple, esophagectomy)
	Teaches basic skills to medical students and junior residents	Teaches bedside operations to junior residents	Teaches common operations to junior residents	Teaches complex operations to junior residents

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Comments:

Not Yet Completed Level 1 ☐

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Patient Care 3: Intra-Operative Patient Care – Technical Skills

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates limited tissue-handling skills	Inconsistently demonstrates careful tissue handling	Consistently demonstrates careful tissue handling	Adapts tissue handling based on tissue quality	Identifies innovative operative techniques, instrumentation, operative approaches, or significant improvement in established techniques
Requires prompting to identify appropriate tissue plane	Identifies appropriate plane but requires redirection to maintain dissection in the optimal tissue plane	Visualizes tissue plane, identifies and dissects relevant normal anatomy	Visualizes tissue plane, identifies and dissects relevant abnormal anatomy	
Moves forward in the operation only with active direction	Moves forward in the operation but requires prompting to complete the operation	Moves fluidly through the course of the operation and anticipates next steps	Adapts to unexpected findings and events during the course of the operation	

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Patient Care 4: Post-Operative Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
Evaluates simple post-operative problems (e.g., fever, bleeding, hypotension, oliguria)	Evaluates complex post-operative problems (e.g., sepsis, anastomotic leak)	Evaluates complex post-operative problems in complex patient (e.g., renal failure, congestive heart failure, cirrhosis)	Anticipates and mitigates post-operative problems in complex patients	Develops a clinical pathway or guideline for management of complex post-operative problems
Manages routine post-operative course for a common operation (e.g., hernia, cholecystectomy, appendectomy)	Manages simple post-operative problems	Manages routine post-operative course for a complex operation (e.g., Whipple, esophagectomy)	Manages complex post-operative problems	
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Comments:

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Medical Knowledge 1: Pathophysiology and Treatment				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of pathophysiology and treatments of patients with common surgical conditions	Demonstrates knowledge of pathophysiology and treatments of patients with complex surgical conditions	Demonstrates knowledge of the impact of patient factors on pathophysiology and the treatment of patients with surgical conditions	Demonstrates comprehensive knowledge of the varying patterns of disease presentation and alternative and adjuvant treatments of patients with surgical conditions	Contributes to peer-reviewed literature on the varying patterns of disease presentation, and alternative and adjuvant treatments of patients with surgical conditions

Comments:

Not Yet Completed Level 1 ☐

Not Yet Rotated ☐

Medical Knowledge 2: Anatomy				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies normal anatomy (e.g., inguinal canal) during common operations	Identifies variations in anatomy (e.g., bile duct anatomic variations) during common operations	Identifies normal anatomy (e.g., gastric blood supply) during complex operations	Identifies variations in anatomy (e.g., replaced right hepatic artery) during complex operations	Develops simulation models for teaching anatomy and operations
Articulates the steps of common operations	Articulates the implications of varying anatomy on the steps of common operations	Articulates the steps of complex operations	Articulates the implications of varying anatomy on the steps of complex operations	Leads anatomy instruction for students and co-residents
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Comments:

Not Yet Completed Level 1 ☐
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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 (simulated or actual)	Participates in disclosure of patient safety events to patients and families (simulated or actual)	Discloses patient safety events to patients and families (simulated or actual)	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, hand hygiene, opioid use)	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

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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 multidisciplinary care of patients in routine clinical situations (e.g., dressing change)	Coordinates and/or leads multidisciplinary care of patients in complex clinical situations (e.g., home parenteral nutrition, postoperative intravenous feeding, intensive care unit)	Coordinates care of patients with barriers to health care access (e.g., trauma patient with no access to care) or other disparities in care	Leads in the design and implementation of improvements to care coordination
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	Supervises safe and effective transitions of care/hand-offs of junior residents	Resolves conflicts in transitions of care between teams	Leads in the design and implementation of improvements to transitions of care

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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	Analyzes how personal practice affects the system (e.g., length of stay, readmission rates, clinical efficiency)	Ues shared decision making in patient care, taking into consideration costs to the patient	Advocates or leads change to enhance systems for high-value, efficient, and effective patient care
Describes the key components of documentation for billing and coding	Documents the key components required for billing and coding	Describes basic elements needed to transition to practice (e.g., contract negotiations, malpractice insurance, government regulation, compliance, Medicare Access and CHIP Reauthorization Act)	Identifies resources and effectively plans for transition to practice (e.g., information technology, legal, billing and coding, financial, personnel)	Participates in advocacy activities for health policy

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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 into the care of a routine patient	Articulates clinical questions and elicits patient preferences and values in order to guide evidence-based care	Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients	Critically appraises and applies evidence, even in the face of uncertain and/or 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
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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
Establishes goals for personal and professional development	Identifies opportunities for performance improvement; designs a learning plan	Integrates performance feedback and practice data to develop and implement a learning plan	Revises learning plan based on performance data	Coaches others in the design and implementation of learning plans
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Comments:

Not Yet Completed Level 1   ☐

Professionalism 1: Ethical Principles

Level 1	Level 2	Level 3	Level 4	Level 5
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	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

Comments:

Not Yet Completed Level 1 ☐

Professionalism 2: Professional Behavior and Accountability

Level 1	Level 2	Level 3	Level 4	Level 5
Completes patient care tasks and responsibilities, identifies potential barriers, and describes strategies for ensuring timely task completion	Performs patient care tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations	Performs patient care tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations	Recognizes situations that may impact others' ability to complete patient-care tasks and responsibilities in a timely manner	Develops systems to enhance other's ability to efficiently complete patient-care tasks and responsibilities
Describes when and how to appropriately report lapses in professional behavior	Takes responsibility for his or her own professional behavior	Demonstrates professional behavior in complex or stressful situations	Intervenes to prevent and correct lapses in professional behavior in self and others	Coaches others when their behavior fails to meet professional expectations
			Appropriately reports lapses in professional behavior (simulated or actual)	
Recognizes limits in the knowledge/skills of self and seeks help	Recognizes limits in the knowledge/skills of team and seeks help	Exhibits appropriate confidence and self-awareness of limits in knowledge/skills	Aids junior learners in recognition of limits in knowledge/skills	

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Not Yet Completed Level 1   ☐

Professionalism 3: Administrative Tasks				
Level 1	Level 2	Level 3	Level 4	Level 5
Takes responsibility for failure to complete administrative tasks and responsibilities, identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future	Performs administrative tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations	Performs administrative tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations	Recognizes situations that may impact others' ability to complete administrative tasks and responsibilities in a timely manner	Develops systems to enhance other's ability to efficiently complete administrative tasks and responsibilities
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Comments:

Not Yet Completed Level 1   ☐

Professionalism 4: Self-Awareness and Help-Seeking

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies the institutional resources available to manage personal, physical, and emotional health (e.g., acute and chronic disease, substance abuse, and mental health problems)	Monitors his or her own personal health and wellness and appropriately mitigates fatigue and/or stress	Promotes healthy habits and creates an emotionally healthy environment for colleagues	Recognizes and appropriately addresses signs and symptoms of burnout, depression, suicidal ideation, potential for violence, and/or substance abuse in other members of the health care team	Coaches others when emotional responses or limitations in knowledge/skills do not meet professional expectations
Demonstrates knowledge of the principles of physician well-being and fatigue mitigation	Manages his or her own time and assures fitness for duty	Models appropriate management of personal health issues, fatigue, and stress	Proactively modifies schedules or intervenes in other ways to assure that those caregivers under his or her supervision maintain personal wellness and do not compromise patient safety (e.g., requires naps, counsels, refers to services, reports to program director)	

Comments:

Not Yet Completed Level 1 ☐

Interpersonal and Communication Skills 1: Patient and Family-Centered Communication				
Level 1	Level 2	Level 3	Level 4	Level 5
Communicates with patients and their families in an understandable and respectful manner	Customizes communication, in the setting of personal biases and barriers (e.g., age, literacy, cognitive disabilities, cultural differences) with patients and families	Delivers complex and difficult information to patients and families	Facilitates difficult discussions specific to patient and family conferences, (e.g., end-of-life, explaining complications, therapeutic uncertainty)	Coaches others in the facilitation of crucial conversations
Provides timely updates to patients and families	Actively listens to patients and families to elicit patient preferences and expectations	Uses shared decision making to make a personalized care plan	Effectively negotiates and manages conflict among patients, families, and the health care team	Coaches others in conflict resolution
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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
Respectfully requests and receives a consultation	Clearly and concisely requests and responds to a consultation	Verifies understanding of recommendations when providing or receiving a consultation	Coordinates recommendations from different members of the health care team to optimize patient care, resolving conflict when needed	Coaches flexible communication strategies that value input from all health care team members
Uses language that values all members of the health care team	Communicates information effectively with all health care team members	Uses active listening to adapt communication style to fit team needs	Maintains effective communication in crisis situation	
	Solicits feedback on performance as a member of the health care team	Communicates concerns and provides feedback to peers and learners	Communicates constructive feedback to superiors	Facilitates regular health care team-based feedback in complex situations
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Comments:
Not Yet Completed Level 1   □

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, including appropriate use of documentation templates	Demonstrates efficient use of electronic medical record to communicate with the health care team	Integrates and synthesizes all relevant data from outside systems and prior encounters into the health record	Appropriately selects form and urgency of communication based on context	Guides departmental or institutional communication around policies and procedures
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Comments:

Not Yet Completed Level 1   ▭