Supplemental Guide: Surgery

ACGME

January 2019
Milestones Supplemental Guide

This document provides additional guidance and examples for the Surgery Milestones. This is not designed to indicate any specific requirements for each level, but to provide insight into the thinking of the Milestone Work Group.

Included in this document is the intent of each Milestone and examples of what a Clinical Competency Committee (CCC) might expect to be observed/assessed at each level. Also included are suggested assessment models and tools for each subcompetency, references, and other useful information. To further aid in the transition, the closing page of this document includes a map of Milestones 1.0 to Milestones 2.0.

We encourage you to review this guide with your CCC and the members of your faculty. As you develop a shared mental model of the Milestones, you can create an individualized guide (Supplemental Guide Template available) with institution/program-specific examples, assessment tools used by the program, and curricular components.
## Patient Care

<table>
<thead>
<tr>
<th>Patient Care 1</th>
<th>Patient Evaluation and Decision Making</th>
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<tbody>
<tr>
<td>Overall Intent</td>
<td>To ensure progressive development of knowledge and skill required to evaluate and manage patients with surgical conditions</td>
</tr>
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</table>

### Level 1 Examples
- Gathers information and develops a differential diagnosis for patients presenting in the following settings:
  - clinic
  - emergency department
  - inpatient transfer
  - ward

### Level 2 Examples
- Orders and interprets chest x-ray, acute abdominal series
- Orders and interprets abdominal computed tomography (CT)
- Manages patients with appendicitis
- Evaluates patient with groin pain
- Evaluates patient with breast mass

### Level 3 Examples
- Develops plan for managing patients with:
  - hernia
  - symptomatic cholelithiasis
  - thyroid nodule
- Adapts plan for changing patient condition in patients with:
  - small bowel obstruction
  - Crohn’s disease
  - gastrointestinal (GI) bleeding
  - aneurysm

### Level 4 Examples
- Develops plan for managing patients with surgical conditions as well as:
  - decompensated heart failure
  - frailty
  - myocardial infarction
  - liver failure
  - renal failure
- Manages patients with:
  - blunt and penetrating trauma
  - septic shock
  - severe malnutrition

### Level 5 Examples
- Develops sepsis protocol
- Develops pathway for treating patients with small bowel obstruction

### Assessment Models or Tools
- Direct observation
- Entrustable Professional Activities
- Case Logs (trauma and intensive care unit [ICU] management)
- Simulation
- Rating scales
- Complexity Assessment and Monitoring to Ensure Optimal Outcomes (CAMEOs)
- Mock orals

### Notes or Resources
### Overall Intent
To ensure the progressive development of integrated knowledge and skills to complete an operation.

### Level 1 Examples
- The resident demonstrates one-handed and two-handed knots under various conditions, including depth of wound.
- Closes simple and complex wounds.
- Places laparoscopic ports and operates camera.
- Uses a scalpel to make an incision.

### Level 2 Examples
- Places a central line.
- Places chest tube.
- Performs wound debridement.
- Places arterial line.
- Performs negative pressure wound therapy.
- Excision of small skin and subcutaneous lesions.
- Performs image guided biopsy.
- Teaches Level 1 skills.

### Level 3 Examples
- Performs sleeve gastrectomy.
- Performs diagnostic endoscopy or percutaneous endoscopic gastrostomy placement.
- Performs vascular anastomosis.
- Performs tracheostomy.
- Performs partial mastectomy.
- Teaches Level 2 skills.

### Level 4 Examples
- Performs low anterior resection.
- Performs anti-reflux procedures.
- Performs abdominal wall reconstruction.
- Performs vascular bypass procedure.
- Performs distal pancreatectomy.
- Teaches Level 3 skills.

### Level 5 Examples
- Performs liver resections.
- Performs open aortic aneurysm repair.
- Performs complex enterocutaneous fistula repair.
- Teaches Level 4 skills.

### Assessment Models or Tools
- Simulation.
- Direct observation.
- Rating scales.
- Operative Performance Rating System (OPRS).
- 360-degree evaluation.
- Case Logs.

### Notes or Resources
In Levels 2-5 it is assumed the resident is performing the complete procedure, including: procedure/equipment set-up; patient positioning; use of aseptic techniques; leading the procedure; and controlling the flow of the procedure.
## Supplemental Guide for Surgery

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<tr>
<th>Patient Care 3</th>
<th>Intra-Operative Patient Care: Technical Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Intent</td>
<td>To ensure the progressive development of technical skills needed to complete an operation including tissue handling, instrument use, and recognition of anatomy</td>
</tr>
</tbody>
</table>
| Level 1 Examples | • Examples in an open inguinal hernia repair:  
  o Needs explicit direction to mark incision site  
  o Can use electrocautery with supervising surgeon providing exposure and guidance  
  o Can place sutures with direction  
  • Examples in laparoscopic cholecystectomy:  
    o Establishes pneumoperitoneum  
    o Places trocars with direction  
    o Operates the camera |
| Level 2 Examples | • Examples in laparoscopic cholecystectomy:  
  o Appropriately places trocars without direction  
  o Dissects Calot’s Triangle with direction  
  o Identifies plane to remove gallbladder from liver bed with occasional straying off plane |
| Level 3 Examples | • Examples in laparoscopic cholecystectomy:  
  o Dissects Calot’s Triangle to critical view of safety without direction  
  o Removes gallbladder from liver bed without injuring either structure  
  o Moves between steps of the procedure with minimal direction |
| Level 4 Examples | • Examples in laparoscopic cholecystectomy:  
  o Recognizes aberrant biliary anatomy and adapts dissection without direction  
  o Adapts tissue handling for acute/gangrenous cholecystitis |
| Level 5 Examples | • Brings natural operative approach to his or her institution |
| Assessment Models or Tools | • Simulation  
  • Direct observation  
  • Rating scales  
  • Video review  
  • Fundamentals of Laparoscopic Surgery/Fundamentals of Endoscopic Surgery |
<p>| Notes or Resources | • Laparoscopic cholecystectomy and inguinal hernia are used as examples. The same concepts should be applied to a variety of operations. |</p>
<table>
<thead>
<tr>
<th>Patient Care 4</th>
<th>Post-Operative Patient Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Intent</td>
<td>To ensure progressive development of recognition and evaluation and management of post-operative patients</td>
</tr>
</tbody>
</table>
| Level 1 Examples | • Evaluates and manages post-operative pain  
• Evaluates post-operative hypertension  
• Manages blood glucose  
• Manages fluid and electrolyte needs |
| Level 2 Examples | • Evaluates respiratory insufficiency  
• Manages hemorrhagic shock  
• Manages surgical site infection  
• Manages post-operative urinary tract infection |
| Level 3 Examples | • Evaluates bronchospasm in patient with chronic pulmonary disease  
• Manages oliguria and hypotension in patient with clinostatic hypertension  
• Manages post-major hepatic resection patient |
| Level 4 Examples | • Prioritizes care for multiply injured patient  
• Anticipates and mitigate multiple organ failures  
• Manages high output enterocutaneous (EC) fistula in malnourished patient |
| Level 5 Examples | • Develops clinical pathway for hemobilia  
• Develops clinical pathway for EC fistula |
| Assessment Models or Tools | • Simulation  
• Direct observation  
• Rating scales  
• Critical Case Logs |
| Notes or Resources | • SCORE modules  
• American College of Surgeons (ACS) Fundamentals of Surgery Curriculum |
## Medical Knowledge

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<th>Medical Knowledge 1</th>
<th>Pathophysiology and Treatment</th>
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<td>Overall Intent</td>
<td>To ensure the resident demonstrates progressive knowledge of pathophysiology and treatment of surgical conditions.</td>
</tr>
<tr>
<td>Level 1 Examples</td>
<td>Demonstrates knowledge of pathophysiology and treatment of patients with:</td>
</tr>
<tr>
<td></td>
<td>- appendicitis</td>
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<tr>
<td></td>
<td>- breast mass</td>
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<tr>
<td></td>
<td>- hernia</td>
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<tr>
<td></td>
<td>- symptomatic cholelithiasis</td>
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<tr>
<td>Level 2 Examples</td>
<td>Demonstrates knowledge of pathophysiology and treatment of patients with:</td>
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<tr>
<td></td>
<td>- adrenal mass</td>
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<tr>
<td></td>
<td>- blunt and penetrating trauma</td>
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<td></td>
<td>- Crohn’s disease</td>
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<td></td>
<td>- severe acute pancreatitis</td>
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<tr>
<td>Level 3 Examples</td>
<td>Demonstrates knowledge of the impact of the following patient factors on the pathophysiology and treatment of surgical conditions:</td>
</tr>
<tr>
<td></td>
<td>- diabetes</td>
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<tr>
<td></td>
<td>- liver failure</td>
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<td></td>
<td>- congestive heart failure</td>
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<tr>
<td></td>
<td>- renal failure</td>
</tr>
<tr>
<td></td>
<td>- chronic anticoagulation</td>
</tr>
<tr>
<td>Level 4 Examples</td>
<td>Demonstrates knowledge of the pathophysiology and treatment of:</td>
</tr>
<tr>
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<td>- a pregnant patient with T3 breast cancer</td>
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<td>- a patient with massive ascites and an umbilical hernia</td>
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<td>- a Jehovah’s Witness with gastrointestinal bleeding</td>
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<td>Level 5 Examples</td>
<td>Publishes retrospective series</td>
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<tr>
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<td>Designs clinical trial</td>
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<td>Contributes patients to clinical trials</td>
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<td>Develops electronic educational module</td>
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<tr>
<td>Assessment Models or Tools</td>
<td>American Board of Surgery (ABS) In-Training Examination (ABSITE)</td>
</tr>
<tr>
<td></td>
<td>Direct observation</td>
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<tr>
<td></td>
<td>Rating scales</td>
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<td></td>
<td>Multiple choice knowledge tests</td>
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<td></td>
<td>Mock orals</td>
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<td></td>
<td>Morbidity and mortality conference</td>
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<tr>
<td>Notes or Resources</td>
<td>National Board of Medical Examiners (NBME) and ABS question writing resources</td>
</tr>
<tr>
<td>Medical Knowledge 2</td>
<td>Anatomy</td>
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<tr>
<td>Overall Intent</td>
<td>To ensure the progressive development of knowledge including normal and variant anatomy pertinent to completing operations and procedures</td>
</tr>
</tbody>
</table>
| Level 1 Examples    | • Identifies Calot’s Triangle  
|                     |   • Identifies appendiceal artery  
|                     |   • Describes the steps of laparoscopic cholecystectomy  
|                     |   • Describes the steps of breast biopsy  
|                     |   • Describes the steps of bowel resection |
| Level 2 Examples    | • Identifies retrocecal appendix  
|                     |   • Identifies non-recurrent laryngeal nerve  
|                     |   • Describes variations in port placement to facilitate dissection of retrocecal appendix  
|                     |   • Describes change in dissection for thyroidectomy when a non-recurrent laryngeal nerve is suspected |
| Level 3 Examples    | • Identifies pancreatic vascular supply  
|                     |   • Identifies ductal and vascular anatomy of liver  
|                     |   • Identifies abdominal wall anatomy during separation of components  
|                     |   • Identifies vascular and lymphatic supply of the rectum  
|                     |   • Describes the steps of a low anterior resection  
|                     |   • Describes the steps of a distal pancreatectomy/splenectomy |
| Level 4 Examples    | • Identifies replaced right hepatic artery during hepatobiliary surgery  
|                     |   • Describes modifications to operative approach during a hepatic resection in the presence of a replaced right hepatic artery |
| Level 5 Examples    | • The resident creates a curriculum for medical students and junior residents for central line placement |
| Assessment Models or Tools | • Direct observation  
|                          |   • In-training exam  
|                          |   • Simulation |
| Notes or Resources   | • SCORE Portal  
|                          |   • ACS Cinemed videos |
## Systems-Based Practice

<table>
<thead>
<tr>
<th>Systems-Based Practice 1</th>
<th>Patient Safety and Quality Improvement (QI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Intent</td>
<td>To demonstrate the ability to engage in the analysis and management of patient safety events, including relevant communication with patients, families, and health care professionals as well as to conduct a QI project</td>
</tr>
<tr>
<td>Level 1 Examples</td>
<td>• Has basic knowledge of patient safety events, reporting pathways, and QI strategies, but has not yet participated in any such activities</td>
</tr>
</tbody>
</table>
| Level 2 Examples        | • Has identified and reported a patient safety issue (real or simulated), along with system factors contributing to that issue  
                          • Can name improvement initiatives within his or her institution |
| Level 3 Examples        | • Has reviewed a patient safety event (e.g., preparing for morbidity and mortality presentations, joining a root cause analysis group)  
                          • Has participated in discussions with patients and/or families about such an event  
                          • Has participated in a QI project, though he or she may not have yet designed a QI project  
                          • Has participated in a hospital or departmental QI Committee |
| Level 4 Examples        | • Collaborates with a team to lead the analysis of a patient safety event  
                          • Communicate with patients/families about those events in actual or simulated situations  
                          • Has initiated and completed a QI project, including communication with stakeholders |
| Level 5 Examples        | • Assumes a leadership role at the departmental or institutional level for patient safety and/or QI initiatives, possibly even being the person to initiate action or call attention to the need for action |
| Assessment Models or Tools | • Simulation  
                          • Reflection  
                          • Direct observation at bedside or in meetings  
                          • E-learning module with assessment  
                          • Chart or other system documentation by resident  
                          • Documentation of QI or patient safety project processes or outcomes  
                          • Morbidity and mortality conference |
| Notes or Resources      | • Institute of Healthcare Improvement website and modules ([http://www.ihi.org/Pages/default.aspx](http://www.ihi.org/Pages/default.aspx)) which includes multiple choice tests, reflective writing samples, and more  
                          • ACS Quality In-Training Initiative (QITI) program |
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<tr>
<th>Systems-Based Practice 2</th>
<th>System Navigation for Patient-Centered Care</th>
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</thead>
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<tr>
<td>Overall Intent</td>
<td>To effectively navigate the health care system, including the interdisciplinary team and other care providers, to adapt care to a specific patient population to ensure high-quality patient outcomes</td>
</tr>
</tbody>
</table>
| Level 1 Examples         | - Identifies the members of the interprofessional team and describes their roles but is not yet routinely using team members or accessing resources  
- Lists the essential components of an effective hand-offs of care  
- Identifies components of social determinants of health and how they impact the delivery of patient care |
| Level 2 Examples         | - Contacts interprofessional team members, such as social workers and consultants, but requires supervision to ensure all necessary referrals are made and resource needs are arranged  
- Able to hand off care for ICU patients using systems approach  
- Knows which patients are at high risk for poor health outcomes due to health literacy concerns, cost, language barrier, etc. |
| Level 3 Examples         | - For poly trauma patient, the resident arranges for a nutritionist, occupational therapy/physical therapy, and follow-up appointments  
- Leads the team in transition of care and hand-offs of care during trauma and emergency surgery |
| Level 4 Examples         | - Directs post-hospital care of homeless person with complex surgical illness such as perforated viscus with post-ICU syndrome  
- Proactively calls the primary care provider to ensure a discharged patient can get their international normalized ratio checks, provides efficient handoff of care to the ICU team at the end of a rapid response event, coordinates and prioritizes consultant input for a new high-risk diagnosis (such as malignancy) to ensure the patient gets appropriate follow up  
- Resolves conflicts between teams for operative prioritization in a multiply injured patient |
| Level 5 Examples         | - Takes a leadership role in designing and implementing changes to improve the care coordination process  
- Creates innovative hand-off of care tools  
- Designs a social determinants of health curriculum to help others learn to identify local resources and barriers to care; effectively uses resources, such as telehealth, for proactive outreach to prevent emergency department visits or re-admission for high-risk populations |
| Assessment Models or Tools | - Direct observation (including discussion during rounds and case presentations), OSCE, chart review  
- Review of hand-off of care tools, use of checklists between units, from the operating room to peri-/post-operative care, or from the emergency department to an inpatient unit  
- 360-degree feedback from the interprofessional team  
- Lectures/workshops on social determinants of health or population health with identification of local resources  
- Interdisciplinary rounds for high-risk patients |
| Notes or Resources       | - Agency for Healthcare Research and Quality. [https://www.ahrq.gov/](https://www.ahrq.gov/)  
- Team STEPS/I PASS |
<table>
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<tr>
<th>Systems-Based Practice 3</th>
<th>Surgeon Role in Health Care Systems</th>
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<tbody>
<tr>
<td><strong>Overall Intent</strong></td>
<td>To understand the surgeon’s role in the complex health care system and how to optimize the system to improve patient care and the health system’s performance</td>
</tr>
</tbody>
</table>
| **Level 1 Examples**     | - Describes payment systems, such as Medicare, Medicaid, the VA, and commercial third-party payers, and practice models (e.g., patient-centered medical home, Accountable Care Organization)  
- Describes elements necessary for appropriate coding in compliance with regulations |
| **Level 2 Examples**     | - Understands how improving patient satisfaction improves patient adherence and remuneration to the health system  
- Applies knowledge of health plan features, including formularies and network requirements, in patient care situations  
- Completes a note following a routine patient encounter with appropriate coding and billing elements in compliance with regulations |
| **Level 3 Examples**     | - Understands, accesses, and analyzes their own individual performance data; relevant data may include:  
  - National Surgical Quality Improvement Program data  
  - Patient satisfaction data  
  - Percentage of patients the resident intubated had an appropriate “ventilator bundle” implemented  
  - Procedure-specific cost/charge data  
- Understands process of contract negotiations, choosing malpractice insurance carriers and features, and reporting requirements for Medicare Access and CHIP Reauthorization Act (MACRA)/Merit-Based Incentive Payment System (MIPS) |
| **Level 4 Examples**     | - Works collaboratively with patients to choose mastectomy versus breast conservation therapy, taking into account patient choice and ability to access x-ray therapy  
- Works collaboratively with patients to choose antireflux procedure versus lifelong proton pump inhibitors  
- Applies knowledge of contract negotiations, choosing malpractice insurance carriers and features, and reporting requirements for MACRA/MIPS |
| **Level 5 Examples**     | - Develops processes to decrease opioid prescribing for one or more clinical services  
- Incorporates e-consults into the electronic health record (EHR)  
- Works with community or professional organizations to advocate for colorectal cancer screening  
- Improves informed consent process for non-English speaking patients requiring interpreter services |
| **Assessment Models or Tools** | - Direct observation  
- Chart review/audit of patient care  
- Quality Improvement project  
- Multiple choice test  
- Patient satisfaction data |
| **Notes or Resources**   | - Centers for Medicare and Medicaid Services. The Merit-based Incentive Payment System: Advancing Care Information and Improvement Activities Performance Categories. December 2016  
https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-
<table>
<thead>
<tr>
<th>Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/MIPS-ACI-and-IA-presentation.pdf</th>
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# Practice-Based Learning and Improvement

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<tr>
<th>Practice-Based Learning and Improvement 1</th>
<th>Evidence-Based and Informed Practice</th>
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<tbody>
<tr>
<td><strong>Overall Intent</strong></td>
<td>To incorporate evidence and patient values into clinical practice</td>
</tr>
<tr>
<td><strong>Level 1 Examples</strong></td>
<td>• Performs a literature review on non-operative management of appendicitis for a patient who does not desire an operation</td>
</tr>
<tr>
<td><strong>Level 2 Examples</strong></td>
<td>• A patient with Hinchey class 3 diverticulitis voices a preference against an ostomy, and the resident performs a targeted literature review looking at outcomes for different treatment approaches to this specific population</td>
</tr>
</tbody>
</table>
| **Level 3 Examples**                   | • Performs a literature review for non-operative management of breast cancer in an octogenarian female with multiple comorbidities with an estrogen receptor- and progesterone receptor-positive (ER/PR+) tumor who does not desire surgery  
• Applies evidence-based clinical guidelines to consider treatment options for a patient with hepatocellular carcinoma and advanced cirrhosis |
| **Level 4 Examples**                   | • Presents a series of research articles on the controversial topic of steroid use in the management of sepsis in a septic patient  
• Presents a review of available evidence to a tumor board to discuss the modality of endoscopic mucosal resection in a patient with gastric cancer |
| **Level 5 Examples**                   | • Presents a review of available evidence to a hospital guidelines committee to advocate for the use of thromboelastogram in the management of lower gastrointestinal bleed |
| **Assessment Models or Tools**         | • Direct observation (e.g., journal club, grand rounds, resident debates)  
• Review of scholarly activity  
• 360-degree evaluation at a multidisciplinary conference |
• American College of Physicians. High value care. [https://hvc.acponline.org/](https://hvc.acponline.org/)  
• Costs of Care [http://www.costofcare.org/](http://www.costofcare.org/)  
• Dartmouth-Hitchcock. Center for shared decision making. [https://med.dartmouth.hitchcock.org/csdm_toolkits.html](https://med.dartmouth.hitchcock.org/csdm_toolkits.html) |
<table>
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<tr>
<th>Practice-Based Learning and Improvement 2</th>
<th>Reflective Practice and Commitment to Personal Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall intent</td>
<td>To become a lifelong learner and integrate outcomes into practice and develop clear objectives and goals for improvement in some form of a learning plan</td>
</tr>
</tbody>
</table>
| Level 1 Examples                        | - Identifies need to improve through self-reflection  
                                           - Seeks ways to improve |
| Level 2 Examples                        | - Recognizes issues with closing complex wounds and schedules more time in the skills lab  
                                           - Identifies low ABSITE score below their expectation and creates a study plan |
| Level 3 Examples                        | - Goes to the skills lab to improve identified technical skills deficits and seeks additional feedback  
                                           - Meets with a mentor in an ongoing basis to maintain preparation for ABSITE |
| Level 4 Examples                        | - Changes previous study plan if ABSITE score did not improve  
                                           - Seeks a new area for learning if previous plan is completed successfully, such as perfecting hand-sewn bowel anastomosis or improving cross cultural communication  
                                           - Improves complex wound closure but continues to practice additional techniques based on self-reflection and feedback |
| Level 5 Examples                        | - Leads sessions and coaches residents that are struggling on study techniques to improve ABSITE score  
                                           - Independently identifies and coaches residents struggling with technical skills |
| Assessment Models or Tools              | - Direct observation  
                                           - 360-degree evaluation  
                                           - Learning plan  
                                           - Mentor/coach evaluation of learning plan |
## Professionalism

<table>
<thead>
<tr>
<th>Professionalism 1</th>
<th>Ethical Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Intent</td>
<td>To recognize basic ethical principles and applies in daily practice, and use appropriate resources for managing ethical dilemmas</td>
</tr>
</tbody>
</table>
| **Level 1 Examples** | • Discusses the basic principles underlying ethics (beneficence, nonmaleficence, justice, autonomy) and professionalism (professional values and commitments), and how they apply in various situations (e.g., informed consent process)  
• Lists elements of informed consent for procedures |
| **Level 2 Examples** | • Identifies surrogate for impaired patients  
• Maintains patient confidentiality in public situations |
| **Level 3 Examples** | • Obtains institutional guidance on obtaining consent for blood transfusion in pediatric Jehovah’s Witness patient  
• Analyzes difficult real or hypothetical ethics case scenarios or situations, recognizes own limitations |
| **Level 4 Examples** | • Manages a near miss or sentinel event (e.g., getting risk management, legal consultations)  
• Identifies ethical dilemmas of performing procedures in patients who are potential organ donors  
• Recognizes and manages situations of medical futility |
| **Level 5 Examples** | • Identifies and seeks to address system-wide factors or barriers to promoting a culture of ethical behavior through participation in a work group, committee, or taskforce (e.g., ethics committee or an ethics sub-committee, risk management committee, root cause analysis review, patient safety or satisfaction committee, professionalism work group, Institutional Review Board, resident grievance committee) |
| **Assessment Models or Tools** | • Direct observation  
• Global evaluation  
• Multisource feedback  
• OSCE  
• Mentor/coach and program director observations  
• Oral or written self-reflection (e.g., of a personal or observed lapse, ethical dilemma, or systems-level factors)  
• Simulation |
• Ethical Issues in Clinical Surgery (ACS)  
• SCORE Modules |
<table>
<thead>
<tr>
<th>Professionalism 2</th>
<th>Accountability/Conscientiousness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Intent</td>
<td>To take responsibility for their actions and the impact on patients and other members of the health care team and recognize limits of one’s own knowledge and skill</td>
</tr>
</tbody>
</table>
| Level 1 Examples | - Completes routine discharge process  
- Sees transfer patient and completes admit orders in a timely manner  
- Knows how to report unprofessional behavior at their institution  
- Asks for help to place nasogastric tube if uncomfortable with procedure |
| Level 2 Examples | - Consents patient and schedules appendectomy  
- Apologizes to team member(s) for unprofessional behavior without prompting  
- Recognizes inadequate glycemic control despite multiple adjustments of medication regimen and requests diabetes management consult |
| Level 3 Examples | - Counsels angry patient with complaints about care team while having multiple other clinical responsibilities  
- Asks for help after attempting central line twice without success  
- Asks for help when unable to identify critical view of safety  
- Asks for help leading family meeting where withdrawal of life-sustaining treatment will be discussed |
| Level 4 Examples | - Adjusts junior resident schedule to allow work hour compliance  
- Encourages junior residents to use well-being days  
- Asks another team member to perform tasks when fatigued  
- Reports student harassment to appropriate institutional official  
- Puts on gown and gloves to help junior resident struggling to place chest tube |
| Level 5 Examples | - Sets up a meeting with the nurse manager to streamline patient discharges  
- Coaches others on how to avoid conflict with team members |
| Assessment Models or Tools | - Direct observation  
- 360-degree evaluations  
- Self-evaluations  
- Compliance with deadlines and timelines  
- Simulation  
- Mentor/coach and program director observations |
| Notes or Resources | - American College of Surgeons. Code of Professional Conduct. [https://www.facs.org/about-acs/statements/stonprin#code](https://www.facs.org/about-acs/statements/stonprin#code)  
- Code of conduct from institutional manual |
<table>
<thead>
<tr>
<th>Professionalism 3</th>
<th>Administrative Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Intent</td>
<td>To ensure the resident develops the skills and behaviors required to complete the administrative duties of being a surgeon, such as clinical work and education hours, Case Logs, evaluations, discharge summaries, operative reports, daily progress notes, conference/meeting attendance, etc.</td>
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</tbody>
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**Level 1 Examples**
- The program director identifies a resident who has failed to concurrently log cases
- Acknowledges that he or she has failed to allocate time specifically for this administrative duty
- Creates a plan to log all cases at the end of every day

**Level 2 Examples**
- Logs clinical and educational work hours and Case Logs regularly
- Completes operative report or discharge summary dictation promptly

**Level 3 Examples**
- When on a busy service, continues to log clinical and educational work hours and cases without interruption
- Completes timely evaluations while having multiple clinical responsibilities

**Level 4 Examples**
- A resident who has planned to attend a wedding in the family makes the appropriate changes in the call schedule to avoid service interruptions

**Level 5 Examples**
- Works with the hospital information technology department to develop a resident shared file directory to facilitate resident completion of administrative requirements such as call schedule distribution, transition of patient care documents, etc.

**Assessment Models or Tools**
- Clinical and educational work hours logs
- Case Logs
- Program director’s reports documenting compliance with administrative requirements
- Conference attendance logs
- Evaluation compliance

**Notes or Resources**
<table>
<thead>
<tr>
<th>Professionalism 4</th>
<th>Self-Awareness and Help-Seeking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Intent</td>
<td>To identify, use, manage, improve, and seek help for personal and professional well-being for self and others</td>
</tr>
</tbody>
</table>
| Level 1 Examples | • Completes e-learning modules (or other modality) related to fatigue management  
                     • Shows how to access an institutional crisis line  
                     • Requests time off for medical or dental appointment |
| Level 2 Examples | • Recognizes when they are approaching clinical and educational work hour limits and develops a plan to ensure both compliance and fatigue mitigation  
                     • Has a regular exercise program |
| Level 3 Examples | • Ensures junior residents leave the hospital at an appropriate time  
                     • Stays home when ill and communicates with team |
| Level 4 Examples | • Brings concerns about other team members to the program director  
                     • Arranges for a resident to take a day off if they are fatigued and/or approaching clinical and educational work hour limits |
| Level 5 Examples | • Leads a mindfulness program with residents  
                     • Organizes program activities to improve well-being |
| Assessment Models or Tools | • Direct observation  
                              • Self-assessment and personal learning plan  
                              • Individual interview  
                              • Group interview or discussions for team activities  
                              • Participation in institutional well-being programs  
                              • Mentor/coach and program director observations  
                              • Institutional online training modules |
| Notes or Resources | • Local resources, including Employee Assistance Programs  
                           • ACGME Physician Well-Being Tools and Resources  
                           https://www.acgme.org/What-We-Do/Initiatives/Physician-Well-Being/Resources  
                           • National Academy of Medicine. Clinician resilience and well-being  
                           https://nam.edu/initiatives/clinician-resilience-and-well-being/ |
# Interpersonal and Communication Skills

<table>
<thead>
<tr>
<th>Interpersonal and Communication Skills 1</th>
<th>Patient- and Family-Centered Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall Intent</strong></td>
<td>To deliberately use language and behaviors to form a therapeutic relationship with a patient and his or her family; to identify communication barriers, including self-reflection on personal biases, and minimize them in the doctor-patient relationship; organize and lead communication around shared decision-making</td>
</tr>
</tbody>
</table>
| **Level 1 Examples**                   | • Self-monitors and controls tone, non-verbal responses, and language and asks questions to invite the patient’s participation  
• Accurately communicates their role in the health care system to patients and families, and identifies common communication barriers (e.g., loss of hearing, language, aphasia) in patient and family encounters  
• Communicates with patients and patients’ families on changing conditions  
• Provides patients with routine information, such as wrist x-ray obtained earlier in the day is normal, hematocrit is stable, etc. |
| **Level 2 Examples**                   | • Identifies complex communication barriers (e.g., culture, religious beliefs, health literacy) in patient and family encounters  
• Leads a discussion about acute pain management with the patient and the family, reassessing the patient’s and family’s understanding and anxiety |
| **Level 3 Examples**                   | • Establishes and maintains a therapeutic relationship with a challenging patient (e.g., angry, non-compliant, substance seeking, mentally challenged)  
• Attempts to mitigate identified communication barriers, including reflection on implicit biases (e.g., preconceived ideas about patients of certain race or weight) when prompted  
• Acknowledges uncertainty in a patient’s medical complexity and prognosis  
• Independently engages in shared decision making with the patient and family, including a recommended acute pain management plan to align a patient’s unique goals with treatment options |
| **Level 4 Examples**                   | • Facilitates family conference when family members disagree about the goals of care  
• Negotiates care management plan when interventions will be medically ineffective |
| **Level 5 Examples**                   | • Mentors/coaches and supports colleagues in self-awareness and reflection to improve therapeutic relationships with patients  
• Creates a curriculum to teach conflict resolution in family conferences |
| **Assessment Models or Tools**         | • 360-degree evaluation of patient/family encounters  
• Standardized patients or structured case discussions  
• Direct observation  
• Self-assessment including self-reflection exercises  
• Mini-clinical evaluation exercise  
• Kalamazoo Essential Elements Communication Checklist (Adapted) |
<table>
<thead>
<tr>
<th>Source</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team STEPS</td>
<td>SCORE modules</td>
</tr>
<tr>
<td><strong>Interpersonal and Communication Skills 2</strong></td>
<td><strong>Interprofessional and Team Communication</strong></td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Overall Intent</td>
<td>To effectively communicate with the health care team, including with consultants, in both straightforward and complex situations</td>
</tr>
</tbody>
</table>
| Level 1 Examples                            | - Allows others to express their opinions  
- Politely accepts requests for consult in the emergency department and thanks the department for the consult  
- Consistently uses inclusive language |
| Level 2 Examples                            | - Informs consult service of the recommendation  
- Asks diabetes management for help with glucose control in brittle diabetic  
- Specifies urgency of consult request |
| Level 3 Examples                            | - Uses closed-loop communications and restating to verify emergency department understands plan for admission to surgical service and operation  
- Demonstrates active listening by asking team members about their concerns and questions during patient rounds  
- Respectfully provides feedback to medical students about their presentations during morning rounds |
| Level 4 Examples                            | - Leads a complex trauma resuscitation, using closed-loop communication, to ensure each patient care task is assigned and completed  
- Provides feedback to faculty members when expectations are not clear (e.g., coverage in clinic or operating room) |
| Level 5 Examples                            | - Identifies then mentors/coaches junior resident to improve communication skills within the team  
- Leads a team debrief after a patient death |
| Assessment Models or Tools                   | - Direct observation  
- 360-degree assessment  
- Simulated encounters  
- Standardized patient encounters or OSCE |
- Team training courses  
- Non-technical training skills for surgeons. NOTSS. [https://www.notss.org](https://www.notss.org) |
<table>
<thead>
<tr>
<th>Interpersonal and Communication Skills 3</th>
<th>Communication within Health Care Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall Intent</strong></td>
<td>To develop skills and behaviors that allows the resident to communicate effectively within the context of a health care system</td>
</tr>
<tr>
<td><strong>Level 1 Examples</strong></td>
<td>• Fills in all elements of a documentation template with the most up-to-date information available</td>
</tr>
<tr>
<td><strong>Level 2 Examples</strong></td>
<td>• Creates accurate, original notes that do not contain extraneous information such as verbatim transcriptions of radiology reports, and concisely summarizes the assessment and plan</td>
</tr>
<tr>
<td><strong>Level 3 Examples</strong></td>
<td>• Collects information from outside health care systems and then accurately and succinctly incorporates that information into the EHR</td>
</tr>
</tbody>
</table>
| **Level 4 Examples**                    | • Calls the attending in the middle of the night when the patient has an emergent change in clinical status  
• Texts attending with change in operating room schedule |
| **Level 5 Examples**                    | • Mentors/coaches colleagues how to improve clinical notes, including terminology, billing compliance, conciseness, and inclusion of all required elements  
• Creates a policy around HIPAA compliant electronic communication (e.g., texting) |
| **Assessment Models or Tools**          | • Chart (HPI, progress notes, procedure notes, discharge summary) audit  
• Direct observation  
• 360-degree evaluation  
• Chart stimulated recall |
• U.S. Department of Health & Human Services. Health information privacy. HHS.gov/hipaa |
In an effort to aid programs in the transition to using the new version of the Milestones, we have mapped the original Milestones 1.0 to the new Milestones 2.0. Below we have indicated where the subcompetencies are similar between versions. These are not necessarily exact matches, but are areas that include some of the same elements. Note that not all subcompetencies map between versions. Inclusion or exclusion of any subcompetency does not change the educational value or impact on curriculum or assessment.

<table>
<thead>
<tr>
<th>Milestones 1.0</th>
<th>Milestones 2.0</th>
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<tbody>
<tr>
<td>PC1: Care For Diseases and Conditions (CDC)</td>
<td>PC1: Patient Evaluation and Decision Making</td>
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<tr>
<td>PC2: Care For Diseases and Conditions (CDC)</td>
<td>PC4: Post-Operative Patient Care</td>
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<tr>
<td></td>
<td>PC3: Intra-Operative Patient Care – Technical Skills</td>
</tr>
<tr>
<td>MK1: Care For Diseases and Conditions (CDC)</td>
<td>MK1: Pathophysiology and Treatment</td>
</tr>
<tr>
<td>MK2: Performance of Operations and Procedures (POP)</td>
<td>MK2: Anatomy</td>
</tr>
<tr>
<td>SBP1: Coordination of Care (CC)</td>
<td>SBP2: System Navigation for Patient-Centered Care</td>
</tr>
<tr>
<td>SBP2: Improvement of Care (IC)</td>
<td>SBP1: Patient Safety and Quality Improvement</td>
</tr>
<tr>
<td>None</td>
<td>SBP3: Physician Role in Health Care Systems</td>
</tr>
<tr>
<td>PBLI1: Teaching (TCH)</td>
<td>PC2: Intra-Operative Patient Care – Performance of Procedures</td>
</tr>
<tr>
<td></td>
<td>PBLI2: Reflective Practice and Commitment to Personal Growth</td>
</tr>
<tr>
<td></td>
<td>ICS2: Interprofessional and Team Communication</td>
</tr>
<tr>
<td>PBLI2: Self-directed Learning (SDL)</td>
<td>PBLI1: Evidence-Based and Informed Practice and</td>
</tr>
<tr>
<td></td>
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<td>PROF1: Ethical Principles and</td>
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<tr>
<td></td>
<td>PROF2: Professional Behavior and Accountability</td>
</tr>
<tr>
<td>PROF2: Maintenance of Physical and Emotional Health (MPEH)</td>
<td>PROF4: Self-Awareness and Help-Seeking</td>
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<tr>
<td>PROF3: Performance of Assignments and Administrative Tasks (PAT)</td>
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