Supplemental Guide: Transplant Hepatology

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Milestones Supplemental Guide

This document provides additional guidance and examples for the Transplant Hepatology 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.

Review this guide with the CCC and faculty members. As the program develops a shared mental model of the Milestones, consider creating an individualized guide (Supplemental Guide Template available) with institution/program-specific examples, assessment tools used by the program, and curricular components.

Additional tools and references, including the Milestones Guidebook, Clinical Competency Committee Guidebook, and Milestones Guidebook for Residents and Fellows, are available on the Resources page of the Milestones section of the ACGME website.

Patient Care 1: Data Gathering and Non-Procedural Diagnostic Testing **Overall Intent:** To use history and physical exam and appropriate diagnostic testing to evaluate patients	
Milestones	**Examples**
Level 1 *Accesses data and gathers a history standard for general internal medicine* *Performs a physical examination standard for general internal medicine* *Selects and interprets diagnostic tests, with significant assistance*	● Obtains a general history and performs a general physical exam on a patient presenting with symptoms of anemia and orders a complete blood count (CBC) and iron panel
Level 2 *Gathers a symptom-specific history and data, with assistance* *Performs a symptom-specific physical examination, with assistance* *Selects and interprets diagnostic tests, with moderate assistance*	● After discussing the patient with the attending, obtains a gastroenterology (GI)-specific history, performs a rectal exam and recommends an upper endoscopy and colonoscopy
Level 3 *Gathers data from multiple sources and collects symptom-specific history, including psychosocial issues* *Performs a symptom-specific physical examination, without assistance* *Selects and interprets diagnostic tests, with minimal assistance and general awareness of cost effectiveness and patient preferences*	● Inquires about family history of peptic ulcer disease and colon cancer, personal history of alcohol use, and obtains prior CBC values ● Examines a patient with abnormal liver tests for cutaneous stigmata of chronic liver disease without direction from the attending ● Orders an iron panel on a patient with cirrhosis before ordering hemochromatosis genetic testing
Level 4 *Consistently synthesizes data from multiple sources* *Consistently performs a symptom-specific physical examination*	● Consistently requests prior records on patients presenting with abdominal pain ● Evaluates for pelvic floor dysfunction during the rectal exam on patients presenting with constipation

Independently selects and interprets diagnostic tests with adjustment based on cost effectiveness and patient preferences	● Recommends noninvasive tests for colorectal cancer screening in a patient who refuses colonoscopy
Level 5 *Role models gathering and synthesis of clinical information* *Interprets subtleties of diagnostic test results to improve patient care*	● After reaching out to other providers and reviewing medical records, creates a summary and corrects misinformation in the chart ● Evaluates for celiac disease in a patient with elevated liver enzymes
Assessment Models or Tools	● Chart-stimulated recall ● Direct observation ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● Merck Manual. Evaluation of the Gastrointestinal Patient. https://www.merckmanuals.com/professional/gastrointestinal-disorders/approach-to-the-gi-patient/evaluation-of-the-gastrointestinal-patient. 2019. ● Dellon ES, Bozymski EM. General approach to history-taking and physical examination of the upper gastrointestinal tract. In: Talley NJ, DeVault KR, Wallace MB, Aqel BA, Lindor KD. *Practical Gastroenterology and Hepatology Board Review Toolkit*. Hoboken, New Jersey: Wiley-Blackwell; 2016:43-45. https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119127437.ch7. 2019. ● Steele CL, Rose S. General approach to relevant history-taking and physical examination. In: Talley NJ, DeVault KR, Wallace MB, Aqel BA, Lindor KD. Practical Gastroenterology and Hepatology Board Review Toolkit. Hoboken, New Jersey: Wiley-Blackwell; 2016:203-212. https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119127437.ch32. 2019.

Patient Care 2: Patient Management in Gastrointestinal and Liver Disease **Overall Intent:** To develop a comprehensive care plan for gastrointestinal and liver disease based on disease presentation and urgency	
Milestones	**Examples**
Level 1 *Develops focused care plans, with moderate assistance* *Requires direct supervision to prioritize and deliver patient care* *Recognizes situations requiring urgent or emergent care, with significant assistance*	● Orders a hepatitis panel for a patient presenting with abnormal transaminases ● After examining a patient presenting to the emergency department with a GI bleed, speaks with attending about next steps ● Recognizes acute liver failure after attending asks to check international normalized ratio ● Immediately calls the attending after the consult is received to determine when to re-evaluate patient
Level 2 *Develops focused care plans, with minimal assistance* *Manages patients with straightforward diagnoses, with minimal assistance* *Recognizes situations requiring urgent or emergent care, with minimal assistance*	● Orders hepatitis panel, autoimmune serologies, iron studies, and genetic testing for a patient presenting with abnormal transaminases based on clinical presentation ● Titrates diuretics for patients with ascites with minimal assistance ● Recognizes acute liver failure after reviewing labs and clinical presentation
Level 3 *Independently develops focused care plans* *Independently manages patients with straightforward diagnoses* *Manages urgent and emergent situations, with minimal assistance*	● Independently synthesizes treatment plan for patient with cirrhosis ● Independently manages a patient with primary biliary cholangitis ● Recognizes acute liver failure and appropriately initiates liver transplant evaluation
Level 4 *Modifies care plans based on patient's clinical course, additional data, patient preferences, and cost-effectiveness principles* *Independently manages patients with complex and undifferentiated syndromes, and recognizes disease presentations that deviate from common patterns*	● Modifies management plan for a patient with newly decompensated cirrhosis ● Independently develops and implements a plan for steroid taper for a patient with autoimmune hepatitis and monitors response, adjusting steroid dose between visits ● Independently manages patients with autoimmune hepatitis with lack of response to steroid therapy suggesting overlap syndrome

Independently manages urgent and emergent situations	● Independently recommends gastric tamponade balloon placement following failed endoscopic hemostasis
Level 5 *Develops customized, prioritized care plans for complex patients, incorporating diagnostic uncertainty and cost-effectiveness principles* *Effectively manages unusual, rare, or complex disorders*	● Diagnoses and treats patient with gastrointestinal bleeding due to innumerable angioectasias of the small bowel ● When managing a patient who declines blood products, identifies bloodless therapeutic strategies
Assessment Models or Tools	● Chart-stimulated recall ● Direct observation ● Medical record (chart) review ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● Lee WM, Stravitz RT, Larson AM. Introduction to the Revised American Association for the Study of Liver Diseases Position Paper on Acute Liver Failure 2011. *Hepatology*. 2012;55(3):965-7. https://aasldpubs.onlinelibrary.wiley.com/doi/epdf/10.1002/hep.25551. 2019. ● Stanley AJ, Laine L. Management of acute upper gastrointestinal bleeding. *BMJ*. 2019;364:l536. https://www.bmj.com/content/364/bmj.l536.long. 2019. ● Runyon B, AASLD Practice Guidelines Committee. Management of adult patients with ascites due to cirrhosis: an update. *Hepatology*. 2009;49(6):2087-107. https://aasldpubs.onlinelibrary.wiley.com/doi/full/10.1002/hep.22853. 2019. ● Lindor KD, Bowlus CL, Boyer J, Levy C, Mayo M. Primary Biliary Cholangitis: 2018 Practice Guidance from the American Association for the Study of Liver Disease. *Hepatology*. 2019;69(1):394-419. https://aasldpubs.onlinelibrary.wiley.com/doi/full/10.1002/hep.30145. 2019. ● Garcia-Tsao G, Sanyal AJ, Grace ND, et al. Prevention and management of gastroesophageal varices and variceal hemorrhage in cirrhosis. *American Journal of Gastroenterology*. 2007;102(9):2086–2102. https://insights.ovid.com/pubmed?pmid=17727436. 2019. ● Manns MP, Czaja AJ, Gorham JD, et al. Diagnosis and management of autoimmune hepatitis. *Hepatology*. 2010;51(6):2193-213. https://aasldpubs.onlinelibrary.wiley.com/doi/full/10.1002/hep.23584. 2019.

Patient Care 3: Technical Procedures – Liver Biopsy **Overall Intent:** To independently perform a liver biopsy including all aspects of the pre- and post-procedural assessment, including evaluation of complications	
Milestones	**Examples**
Level 1 *Performs peri-procedural assessment, including required diagnostic testing and selection of equipment, with moderate assistance* *Only performs portions of the procedure, and recognizes complications, with significant assistance*	● Learner requires prompting for need of liver biopsy in a patient with elevated liver enzymes post-transplant ● Demonstrates knowledge of peri-procedural assessment including indications, contraindications, limitations, complications, alternatives, and techniques of liver biopsy ● Identifies site of biopsy, prepares the skin, positions the patient, and administers local anesthesia
Level 2 *Performs peri-procedural assessment, including required diagnostic testing and selection of equipment, with minimal assistance* *Performs significant portions of the procedure and recognizes complications, with moderate assistance*	● Determines need for a liver biopsy, evaluates patient, determines if sedation is needed, and obtains informed consent ● Performs liver biopsy and obtains adequately sized sample with moderate verbal coaching throughout the procedure
Level 3 *Independently performs peri-procedural assessment, including required diagnostic testing and selection of equipment in standard cases* *Performs the complete procedure and recognizes complications, with minimal assistance*	● Determines need for a liver biopsy, evaluates patient, determines if sedation is needed, obtains informed consent, and checks labs/imaging studies to ensure safety for the patient ● Performs liver biopsy and obtains adequately sized sample with minimal verbal coaching
Level 4 *Independently performs peri-procedural assessment, including required diagnostic testing in complex cases* *Independently performs the complete procedure with patient comfort and adequate specimen collection and recognizes complications*	● Determines best route to perform liver biopsy in a patient with coagulopathy ● When an adequate sample is not obtained after several attempts, appropriately aborts the procedure ● Manages a patient with post procedural abdominal pain and recommends imaging to rule out a complication
Level 5 *Teaches others to perform liver biopsy*	● Leads another fellow through every single step of liver biopsy

Assessment Models or Tools	● Direct observation, including use of a checklist to ensure all steps of the biopsy was completed ● Tracking system of learner obtaining adequate specimens
Curriculum Mapping	●
Notes or Resources	● Rockey DC, Caldwell SH, Goodman ZD, et al. Liver biopsy. *Hepatology*. 2009;49(3):1017-1044. https://aasldpubs.onlinelibrary.wiley.com/doi/full/10.1002/hep.22742. 2019.

Medical Knowledge 1: Clinical Knowledge of Gastrointestinal and Liver Diseases (Non-Procedural) **Overall Intent:** To acquire, possess and demonstrate the facts, concepts and ideas related to the field of transplant hepatology in order to provide patient care and communicate with other medical professionals	
Milestones	**Examples**
Level 1 *Demonstrates basic knowledge of specialty disorders* *Demonstrates basic knowledge of diagnostic, therapeutic/ pharmacologic categories for prevention and treatment of disease*	● Lists causes of post-transplant rejection ● Lists categories of anti-rejection drugs
Level 2 *Demonstrates expanding knowledge of specialty disorders* *Demonstrates expanding knowledge of diagnostic, therapeutic/ pharmacologic options for prevention and treatment of diseases, including indications, contraindications, limitations, complications, alternatives, and techniques*	● Recognizes the role of palliative medicine in an end-stage liver disease patient ● Identifies appropriate antirejection medications based on medical comorbidities
Level 3 *Demonstrates broad knowledge of specialty disorders* *Demonstrates broad knowledge of diagnostic, therapeutic/ pharmacologic options for prevention and treatment of diseases*	● Creates a differential for diagnosis for acute liver failure in pregnancy ● Interprets the results from therapeutic drug monitoring for a patient with a liver transplant
Level 4 *Synthesizes advanced knowledge of specialty disorders to develop personalized interventions* *Synthesizes advanced knowledge to select diagnostic, therapeutic/ pharmacologic options for prevention and treatment of disease*	● Discusses the risk/benefit for repeat orthotopic liver transplantation in a patient with a prior transplantation who develops new cirrhosis and congestive heart failure ● Understands the risks/benefits for anti-viral therapy in a pregnant patient with hepatitis B
Level 5 *Demonstrates expert knowledge within a focused area*	● Demonstrates knowledge of evolving therapeutic targets for drug development in non-alcoholic steatohepatitis
Assessment Models or Tools	● Chart stimulated recall ● Direct observation ● Gastroenterology Training Exam

Curriculum Mapping	●
Notes or Resources	● American College of Gastroenterology. The Gastroenterology Core Curriculum. https://webfiles.gi.org/docs/fellows-GICoreCurriculum.pdf. 2019. ● American Gastroenterological Association. Clinical Guidelines. https://gastro.org/guidelines. 2019. ● American College of Gastroenterology. ACG Guidelines. https://gi.org/tag/acg-guidelines/. 2019. ● American Association for the Study of Liver Disease. Practice Guidelines. https://www.aasld.org/publications/practice-guidelines. 2019. ● American Society for Gastrointestinal Endoscopy. Guidelines. https://www.asge.org/home/guidelines. 2019. ● DDSEP 9 ● American College of Gastroenterology. ACG Education Universe. http://universe.gi.org/. 2019. ● American Association for the Study of Liver Disease. LiverLearning. https://www.aasld.org/education/learn-online/liverlearning. 2019. ● American Board of Internal Medicine. Gastroenterology Certification Examination Blueprint. https://www.abim.org/~/media/ABIM%20Public/Files/pdf/exam-blueprints/certification/gastroenterology.pdf. 2019. ● American Board of Internal Medicine. Transplant Hepatology. https://www.abim.org/~/media/ABIM%20Public/Files/pdf/exam-blueprints/certification/transplant-hepatology.pdf. 2019.

Medical Knowledge 2: Clinical Reasoning **Overall Intent:** To provide specialty-specific care for patients with gastrointestinal and hepatic diseases/disorders	
Milestones	**Examples**
Level 1 *Creates a focused differential diagnosis with moderate assistance*	● Needs assistance listing causes of acute abdominal pain
Level 2 *Creates a focused differential diagnosis with minimal assistance* *Differential diagnosis remains fixed despite new information*	● Lists most common causes of acute abdominal pain ● Does not expand the differential when a computerized tomography (CT) scan demonstrates inflammatory changes around the terminal ileum
Level 3 *Independently creates a succinct, plausible, and prioritized differential diagnosis appropriate for the presentation of a patient with an uncomplicated presentation* *Consistently incorporates new information to adjust differential diagnosis*	● Prioritizes acute appendicitis in a patient with migrating abdominal discomfort localizing to the right lower quadrant, rebound, and fever ● Adds inflammatory bowel disease or Yersinia to the differential when a CT scan demonstrates inflammatory changes around the terminal ileum
Level 4 *Independently creates a succinct, plausible, and prioritized differential diagnosis appropriate for the presentation of a patient with complex and/or multiple problems* *Consistently evaluates and adjusts differential diagnosis integrating available new information and recognizing the factors that lead to bias*	● Synthesizes history and physical and diagnostic testing in neuroendocrine tumor of the terminal ileum ● Does not anchor on Crohn's disease when learning about a family history of Crohn's disease in a patient with chronic diarrhea, and weight loss
Level 5 *Recognizes rare presentations of common diagnoses and/or presentations of rare diagnoses* *Aware of cognitive biases and demonstrates behaviors to overcome them*	● Recognizes that spiculation of mass on imaging raising neuroendocrine tumor as the etiology ● Recognizes potential towards anchoring bias, leads multidisciplinary conference to obtain input ● Personally elicits input from other subspecialists in complex diagnostic cases
Assessment Models or Tools	● Conference participation ● Direct observation ● Formative evaluation ● Summative evaluation

Curriculum Mapping	●
Notes or Resources	● American College of Gastroenterology. The Gastroenterology Core Curriculum. https://webfiles.gi.org/docs/fellows-GICoreCurriculum.pdf. 2019. ● The Society to Improve Diagnosis in Medicine. Inter-Professional Consensus Curriculum on Diagnosis and Diagnostic Error. https://www.improvediagnosis.org/competency-summary-list/. 2019. ● The Society to Improve Diagnosis in Medicine. Inter-Professional Consensus Curriculum on Diagnosis and Diagnostic Error. Driver Diagram. https://www.improvediagnosis.org/wp-content/uploads/2018/10/Driver_Diagram_-_July_31_-_M.pdf. 2019. ● The Society to Improve Diagnosis in Medicine. Assessment of Reasoning Tool. https://www.improvediagnosis.org/art/. 2019. ● American Gastroenterological Association. Clinical Guidelines. https://gastro.org/guidelines. 2019. ● American College of Gastroenterology. ACG Guidelines. https://gi.org/tag/acg-guidelines/. 2019. ● American Association for the Study of Liver Disease. Practice Guidelines. https://www.aasld.org/publications/practice-guidelines. 2019. ● American Society for Gastrointestinal Endoscopy. Guidelines. https://www.asge.org/home/guidelines. 2019. ● American College of Gastroenterology. ACG Education Universe. http://universe.gi.org/. 2019. ● AGA. DDSEP 9. http://agau.gastro.org/diweb/catalog/item/id/3393714. 2019. ● American Society for Gastrointestinal Endoscopy. GESAP-Self Assessment. https://www.asge.org/quicklinks/gesap. 2019.

Systems-Based Practice 1: Patient Safety and Quality Improvement **Overall Intent:** To engage in the analysis and management of patient safety events, including relevant communication with patients, families, and health care professionals; to conduct a QI project	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of common patient safety events*	● Lists patient misidentification or medication errors as common patient safety events
Demonstrates knowledge of how to report patient safety events	● Describes how to report errors in their institution
Demonstrates knowledge of basic quality improvement methodologies and metrics	● Describes Plan, Do, Study, Act (PDSA) cycle
Level 2 *Identifies system factors that lead to patient safety events*	● Identifies lack of hand sanitizer dispenser at each clinical exam room may lead to increased infection rates
Reports patient safety events through institutional reporting systems	● Reports lack of hand sanitizer dispenser at each clinical exam room to the medical director
Describes local quality improvement initiatives	● Summarizes protocols resulting in decreased spread of hospital acquired *C. diff*
Level 3 *Participates in analysis of patient safety events (simulated or actual)*	● Prepares for morbidity and mortality presentations
Participates in disclosure of patient safety events to patients and families (simulated or actual)	● Communicates with patients/families about a procedural complication
Participates in local quality improvement initiatives and describes quality improvement regulatory requirements relevant to transplantation (e.g., Center for Medicare and Medicaid Services, Organ Procurement and Transplantation Network, organ procurement organizations)	● Participates in project identifying root cause of readmission for patients with cirrhosis
Level 4 *Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)*	● Collaborates with a team to conduct the analysis of a procedural complication and can effectively communicate with patients/families about those events

Discloses patient safety events to patients and families (simulated or actual) *Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project*	● Participates in the completion of a QI project to improve viral hepatitis vaccination rates in patients with cirrhosis, including assessing the problem, articulating a broad goal, developing a SMART (Specific, Measurable, Attainable, Realistic, Time-bound) objective plan, and monitoring progress and challenges
Level 5 *Actively engages teams and processes to modify systems to prevent patient safety events* *Role models or mentors others in the disclosure of patient safety events* *Creates, implements, and assesses quality improvement initiatives at the national, institutional, or community level*	● Assumes a leadership role at the departmental or institutional level for patient safety ● Conducts a simulation for disclosing patient safety events ● Initiates and completes a QI project to improve county viral hepatitis vaccination rates in collaboration with the county health department and shares results with stakeholders
Assessment Models or Tools	● Direct observation ● E-module multiple choice tests ● Medical record (chart) audit ● Multisource feedback ● Portfolio ● Reflection ● Simulation
Curriculum Mapping	●
Notes or Resources	● Institute of Healthcare Improvement. http://www.ihi.org/Pages/default.aspx. 2019 ● Kruszewksi BD, Spell NO 3rd. A consensus approach to identify tiered competencies in quality improvement and patient safety. *J Grad Med Educ*. 2018;10(6):646-650. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6314353/. 2019. ● Shah BJ. How to deliver safer and effective patient care: tips for team leaders and educators. *Gastroenterology*. 2019;156(4):852-855. https://www.gastrojournal.org/article/S0016-5085(19)30390-7/fulltext?referrer=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2F. 2019. ● Siddique SM, Ketwaroo G, Newberry C, Mathews S, Khungar V, Mehta SJ. How to incorporate quality improvement and patient safety projects in your training. *Gastroenterology*. 2018;154(6):1564-1568. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5931739/. 2019.

Systems-Based Practice 2: System Navigation for Patient-Centered Care **Overall Intent:** 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	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of care coordination*	● Lists interprofessional team members involved in liver transplant
Identifies key elements for safe and effective transitions of care and hand-offs	● Lists the essential components of an I-PASS sign-out and care transition and hand-offs
Demonstrates basic knowledge of population and community health needs and barriers related to organ allocation	● Recognizes that organ allocation systems exist
Level 2 *Coordinates care of patients in routine clinical situations effectively using the roles of the interprofessional team members*	● For a patient with GI bleed, coordinates endoscopy with the intensive care unit team and endoscopy team
Performs safe and effective transitions of care/hand-offs in routine clinical situations	● Routinely uses I-PASS for a stable patient during sign-out
Demonstrates basic knowledge of liver organ allocation	● Identifies patients in rural settings may have less access to transplant evaluation or follow-up
Level 3 *Coordinates care of patients in complex clinical situations effectively using the roles of the interprofessional team members*	● Works with the social worker to coordinate care for a homeless patient who will need repeat endoscopy after discharge from the hospital
Performs safe and effective transitions of care/hand-offs in complex clinical situations	● Routinely uses verbal hand-off to communicate particularly complex patient information during transitions of care
Identifies specific Model for End-Stage Liver Disease (MELD) exceptions and process for allocation of livers for transplantation	● Refers patients to a local pharmacy or medication assistance program which provides a sliding fee scale option and prints pharmacy coupons for patients in need
Level 4 *Role models effective coordination of patient-centered care among different disciplines and specialties*	● During inpatient rotations, leads multidisciplinary rounds for the team

Role models and advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems, including outpatient settings *Advocates effectively for patients who are listed for liver transplantation including use of appropriate MELD exceptions*	● Prior to going on vacation, proactively informs the covering fellow about a plan of care for an inflammatory bowel disease (IBD) patient who starts anti-tumor necrosis factor (TNF) in the hospital and will need outpatient office visit and infusion coordination ● Writes and submits a thorough narrative for a patient with refractory hepatic hydrothorax to petition for a model for end-stage liver disease (MELD) exception
Level 5 *Analyzes the process of care coordination and leads in the design and implementation of improvements* *Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes*	● Leads multidisciplinary team to streamline liver transplant evaluation process ● Develops a protocol to improve transitions for patients with cirrhosis from inpatient to outpatient care ●
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback ● OSCE ● Quality metrics ● Review of sign-out tools, use and review of checklists
Curriculum Mapping	●
Notes or Resources	● CDC. Population Health Training in Place Program (PH-TIPP). https://www.cdc.gov/pophealthtraining/whatis.html. 2019. ● Kaplan KJ. In pursuit of patient-centered care. http://tissuepathology.com/2016/03/29/in-pursuit-of-patient-centered-care/#axzz5e7nSsAns. 2019. ● Skochelak SE, Hawkins RE, Lawson LE, Starr SR, Borkan JM, Gonzalo JD. *AMA Education Consortium: Health Systems Science*. 1st ed. Philadelphia, PA: Elsevier; 2016. https://commerce.ama-assn.org/store/ui/catalog/productDetail?product_id=prod2780003. 2019. ● The published literature has many examples of, descriptive studies and results of interventions focus on handoffs and care transitions within hepatology and inflammatory bowel disease. These papers can serve as tools for journal club or to guide the development of a quality improvement project.

Systems-Based Practice 3: Physician Role in Health Care Systems **Overall Intent:** To understand the role in the complex health care system and how to optimize the system to improve patient care and the health system's performance	
Milestones	**Examples**
Level 1 *Identifies key components of the complex health care system (e.g., hospital, skilled nursing facility, finance, personnel, technology)* *Describes basic elements of health payment systems (e.g., government, private, public, uninsured care) and practice models*	● Articulates differences between skilled nursing and long-term care facilities ● Understands the impact of health plan coverage on prescription drugs for individual patients
Level 2 *Describes how components of a complex health care system are interrelated, and how this impacts patient care* *Distinguishes specialty-specific elements of health payment systems (e.g., office, endoscopy, inpatient)*	● Explains that improving patient satisfaction impacts patient adherence and payment to the health system ● Takes into consideration patient's prescription drug coverage when choosing an anti-TNF agent for IBD
Level 3 *Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)* *Engages with patients in shared decision making, informed by each patient's payment models*	● Ensures that a patient with decompensated cirrhosis has a scheduled follow-up appointment at discharge within seven days to reduce the risk of readmission ● Discusses risks and benefits of pursuing magnetic resonance imaging (MRI) versus CT imaging for further evaluation of an abnormal ultrasound when a patient has a high out-of-pocket deductible
Level 4 *Manages various components of the complex health care system to provide efficient and effective patient care and transitions of care* *Leads and advocates for practice and population with consideration of the limitations of each patient's payment model*	● Effectively coordinates transition of an inpatient with a new diagnosis of IBD to a community provider to manage steroid taper ● When prescribing medications, ensures a process is available in the practice/clinic for patients with financial limitations to apply for financial assistance
Level 5 *Advocates for or leads systems change that enhances high-value, efficient, and effective patient care and transitions of care*	● Organizes hepatitis C screening and linkage to care at a community health fair

Leads health policy advocacy activities related to access and payment reform	● Organizes lobbying activity to promote access and education for colorectal cancer screening in underserved populations through professional society or other advocacy group
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multiple choice exam
Curriculum Mapping	●
Notes or Resources	● American Board of Internal Medicine. QI/PI activities. http://www.abim.org/maintenance-of-certification/earning-points/practice-assessment.aspx. 2019. ● Agency for Healthcare Research and Quality (AHRQ). Measuring the Quality of Physician Care. https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/physician/challenges.html. 2019. ● AHRQ. Major physician performance sets. https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/physician/measurementsets.html. 2019. ● The Kaiser Family Foundation: Topic: health reform. https://www.kff.org/topic/health-reform/. 2019. ● Dzau VJ, McClellan M, Burke S, et al. Vital directions for health and health care: priorities from a National Academy of Medicine Initiative. *NAM Perspectives*. Discussion Paper, National Academy of Medicine, Washington, DC. https://nam.edu/wp-content/uploads/2017/03/Vital-Directions-for-Health-Health-Care-Priorities-from-a-National-Academy-of-Medicine-Initiative.pdf. 2019. ● The Commonwealth Fund. Health System Data Center. http://datacenter.commonwealthfund.org/?_ga=2.110888517.1505146611.1495417431-1811932185.1495417431#ind=1/sc=1. 2019. ● The Commonwealth Fund. Health Reform Resource Center. http://www.commonwealthfund.org/interactives-and-data/health-reform-resource-center#/f:@facasubcategoriesfacet63677=[Individual%20and%20Employer%20Responsibility. 2019.

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice **Overall Intent:** To incorporate evidence and patient values into clinical practice	
Milestones	**Examples**
Level 1 *Demonstrates how to access and use available evidence, and incorporate patient preferences and values to care for a routine patient*	● Identifies evidence-based guidelines for treatment of IBD using professional society practice guidelines and available quality indicators
Level 2 *Articulates clinical questions and elicits patient preferences and values to guide evidence-based care*	● Identifies and discusses treatment options and solicits patient perspective in a patient with chronic hepatitis B and indications for antiviral therapy
Level 3 *Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients*	● Understands and appropriately uses clinical practice guidelines in making patient care decisions while eliciting patient preferences
Level 4 *Critically appraises and applies evidence, even in the face of uncertainty and conflicting evidence, to guide care, tailored to the individual patient*	● Assesses the primary literature to determine the risks and benefits of nonselective beta blocker therapy in a patient with a history of spontaneous bacterial peritonitis
Level 5 *Coaches others to critically appraise and apply evidence for complex patients, and/or participates in the development of guidelines*	● Runs an evidence-based medicine journal club for medical residents
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Oral or written examinations ● Presentation evaluation
Curriculum Mapping	●
Notes or Resources	● Lebwohl B. Non-evidence-Based Medicine: The Gastroenterologist's Role and Responsibility. *Digestive Diseases and Sciences*. 2018;63(4):822-824. https://link.springer.com/article/10.1007/s10620-018-4993-8. 2019. ● Choosing Wisely. American Gastroenterological Association. http://www.choosingwisely.org/societies/american-gastroenterological-association/. 2019. ● Camilleri M, Katzka DA. Enhancing high value care in gastroenterology practice. *Clin Gastroenterol Hepatol*. 2016;14(10):1376-1384. https://www.cghjournal.org/article/S1542-3565(16)30211-7/fulltext. 2019.

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth **Overall Intent:** To seek clinical performance information with the intent to improve care; to reflect on all domains of practice, personal interactions, and behaviors, and their impact on colleagues and patients (reflective mindfulness); to develop clear objectives and goals for improvement in some form of a learning plan	
Milestones	**Examples**
Level 1 *Demonstrates openness to performance data (feedback and other input) to inform goals* *Identifies the factors that contribute to gap(s) between expectations and actual performance* *Actively seeks opportunities to improve*	● Sets a personal practice goal of documenting use of screening guidelines for hepatocellular carcinoma (HCC) ● Identifies insufficient reading as cause of knowledge gap in managing cirrhosis ● Asks for feedback from patients, families, and patient care team members
Level 2 *Accepts responsibility for personal and professional development by establishing goals* *Analyzes and reflects on the factors that contribute to gap(s) between expectations and actual performance* *Designs and implements a learning plan, with prompting*	● Making sure all cirrhotic patients in practice are screened for HCC every six months ● Assesses time management skills and how it impacts timely completion of clinic notes and literature reviews ● At the end of each week with an attending, asks the attending about performance and creates plans for improvement
Level 3 *Seeks performance data episodically, with adaptability and humility* *Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance* *Independently creates and implements a learning plan*	● Conducts chart audit to determine if patients all patients with cirrhosis are being screened for HCC ● Completes a comprehensive literature review prior to patient encounters ● Consistently identifies ongoing gaps and chooses areas for further development
Level 4 *Intentionally seeks performance data consistently, with adaptability and humility* *Consistently evaluates, and challenges one's own assumptions, and considers alternative strategies to narrow the gap(s) between expectations and actual performance*	● Does a chart audit to determine personal HCC screening rate in patients with cirrhosis ● After patient encounter, debriefs with the attending and other patient care team members to optimize future collaboration in the care of the patient and family

Uses performance data to measure the effectiveness of the learning plan, and, when necessary, adjusts it	● Performs a chart audit on personal documentation of their use of screening guidelines
Level 5 *Role models consistently seeking performance data, with adaptability and humility* *Coaches others on reflective practice* *Facilitates the design and implementation of learning plans for others*	● Models practice improvement and adaptability ● Develops educational module for collaboration with other patient care team members ● Assists residents/more junior fellows in developing their individualized learning plans
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Review of learning plan
Curriculum Mapping	●
Notes or Resources	● Hojat M, Veloski JJ, Gonnella JS. Measurement and correlates of physicians' lifelong learning. *Acad Med.* 2009;84(8):1066-74. https://journals.lww.com/academicmedicine/fulltext/2009/08000/Measurement_and_Correlates_of_Physicians__Lifelong.21.aspx. 2019. ● Burke AE, Benson B, Englander R, Carraccio C, Hicks PJ. Domain of competence: practice-based learning and improvement. *Acad Pediatr*. 2014;14(2 Suppl):S38-54. https://www.academicpedsjnl.net/article/S1876-2859(13)00333-1/fulltext. 2019. ● Lockspeiser TM, Schmitter PA, Lane JL, et al. Assessing residents' written learning goals and goal writing skill: validity evidence for the learning goal scoring rubric. *Acad Med.* 2013;88(10):1558-63. https://journals.lww.com/academicmedicine/fulltext/2013/10000/Assessing_Residents__Written_Learning_Goals_and.39.aspx. 2019. ● Marrero JA, Kulik LM, Sirlin CB, et al. Diagnosis, staging, and management of hepatocellular carcinoma: 2018 practice guidance by the American Association for the Study of Liver Diseases. *Hepatology*. 2018;68(2):723-750. https://aasldpubs.onlinelibrary.wiley.com/doi/full/10.1002/hep.29913. 2019.

Professionalism 1: Professional Behavior and Ethical Principles **Overall Intent:** To recognize and address lapses in ethical and professional behavior, demonstrate ethical and professional behaviors, and use appropriate resources for managing ethical and professional dilemmas	
Milestones	**Examples**
Level 1 *Demonstrates professional behavior in routine situations* *Demonstrates knowledge of the ethical principles underlying informed consent, confidentiality, and related topics*	● Understands that being tired can cause a lapse in professionalism ● Articulates how the principle of "do no harm" applies to a patient who may not need a procedure even though the training opportunity exists
Level 2 *Demonstrates professional behavior in complex or stressful situations* *Recognizes need to seek help in managing and resolving straightforward ethical situations*	● Respectfully approaches a team member who is late to rounds about the importance of being on time ● Identifies and applies ethical principles involved in informed consent when the fellow is unclear of all of the risks
Level 3 *Identifies and demonstrates insight into potential triggers for lapses in professional behavior* *Recognizes need to seek help in managing and resolving complex ethical situations*	● Appropriately responds to a distraught family member, following a procedural complication ● After noticing a colleague's inappropriate social media post, reviews policies related to posting of content and seeks guidance
Level 4 *Acts to prevent lapses in professional behavior in oneself and others* *Recognizes and uses appropriate resources for managing and resolving ethical situations as needed (e.g., ethics consultations, literature review, risk management/legal consultation)*	● Models respect for patients and promotes the same from colleagues, when a patient has been waiting an excessively long time to be seen ● Recognizes and uses ethics consults, literature, risk-management/legal counsel in order to resolve ethical dilemmas
Level 5 *Coaches others when their behavior fails to meet professional expectations* *Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution*	● Coaches others when their behavior fails to meet professional expectations, and creates a performance improvement plan to prevent recurrence ● Engages stakeholders to address excessive wait times in clinic to decrease patient and provider frustrations that lead to unprofessional behavior
Assessment Models or Tools	● Direct observation ● Multisource feedback ● Oral or written self-reflection

	● Simulation
Curriculum Mapping	●
Notes or Resources	● American Medical Association Code of Ethics. https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. 2019 ● American Board of Internal Medicine. Medical professionalism in the new millennium: a physician charter. *Ann Intern Med*. 2002;136:243-246. http://abimfoundation.org/wp-content/uploads/2015/12/Medical-Professionalism-in-the-New-Millenium-A-Physician-Charter.pdf. 2019. ● Byyny RL, Papadakis MA, Paauw DS. *Medical Professionalism Best Practices*. Menlo Park, CA: Alpha Omega Alpha Medical Society; 2015. https://alphaomegaalpha.org/pdfs/2015MedicalProfessionalism.pdf. 2019. ● Levinson W, Ginsburg S, Hafferty FW, Lucey CR. *Understanding Medical Professionalism*. 1st ed. New York, NY: McGraw-Hill Education; 2014. ● Domen RE, Johnson K, Conran RM, et al. Professionalism in pathology: a case-based approach as a potential education tool. *Arch Pathol Lab Med.* 2017;141(2):215-219. https://www.archivesofpathology.org/doi/10.5858/arpa.2016-0217-CP?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed. 2019. ● Bynny RL, Paauw DS, Papadakis MA, Pfeil S. *Medical Professionalism. Best Practices: Professionalism in the Modern Era*. Menlo Park, CA: Alpha Omega Alpha Medical Society; 2017. ISBN:978-1-5323-6516-4.

Professionalism 2: Accountability/Conscientiousness **Overall Intent:** To take responsibility for one's own actions and their impact on patients and other members of the health care team	
Milestones	**Examples**
Level 1 *Takes responsibility for failure to complete tasks and responsibilities, identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future* *Responds promptly to requests or reminders to complete tasks and responsibilities*	● Responds promptly to reminders from program administrator to complete work-hour logs ● Timely attendance at conferences ● Completes clinic notes in a timely fashion ● Completes administrative tasks such as end of rotation evaluations
Level 2 *Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations* *Recognizes situations that may impact one's own ability to complete tasks and responsibilities in a timely manner*	● Completes administrative tasks, documents safety modules, procedure review, and training program requirements by specified due date ● Before going out of town, completes tasks in anticipation of inability to access computer while traveling ● Anticipates need for patient or test result follow-up after completing a rotation
Level 3 *Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations* *Proactively implements strategies to ensure that the needs of patients, teams, and systems are met*	● Notifies attending of multiple competing demands on-call, appropriately triages tasks, and asks for assistance from other fellows or faculty members as needed ● In preparation for being out of the office, arranges coverage for assigned clinical tasks on continuity clinic patients and ensures appropriate continuity of care
Level 4 *Recognizes and acts upon situations that may impact the team's ability to complete tasks and responsibilities in a timely manner*	● Takes responsibility for inadvertently omitting key patient information during sign-out and professionally discusses with the patient, family and interprofessional team
Level 5 *Takes ownership of system outcomes*	● Sets up a meeting with the endoscopy unit nurse manager to streamline patient discharges and leads team to find solutions to the problem ● Personally facilitates and ensures follow up procedures on patients being discharged from the hospital by contacting schedulers and procedural staff members
Assessment Models or Tools	● Compliance with deadlines and timelines ● Direct observation ● Multisource feedback ● Self-evaluations and reflective tools

Curriculum Mapping	●
Notes or Resources	● Institution/GME Code of ethics ● Code of conduct from fellow/resident institutional manual ● Expectations of fellowship program regarding accountability and professionalism

Professionalism 3: Self-Awareness and Help-Seeking **Overall Intent:** To identify, use, manage, improve, and seek help for personal and professional well-being for self and others	
Milestones	**Examples**
Level 1 *Recognizes status of personal and professional well-being, with assistance* *Recognizes limits in the knowledge/skills of oneself or team, with assistance*	● Acknowledges own response to patient's Stage IV pancreatic cancer diagnosis ● Accepts and internalizes feedback on missed emotional cues after a family meeting
Level 2 *Independently recognizes status of personal and professional well-being* *Independently recognizes limits in the knowledge/skills of oneself or the team*	● Independently identifies and communicates impact of a personal family tragedy ● Recognizes a pattern of missing emotional cues during family meetings and asks for feedback
Level 3 *With assistance, proposes a plan to optimize personal and professional well-being* *With assistance, proposes a plan to remediate or improve limits in the knowledge/skills of oneself or the team*	● Develops a reflective response to deal with personal impact of difficult patient encounters and disclosures with help from the supervising attending ● Integrates feedback from supervising attendings and program director to develop a plan for identifying and responding to emotional cues during patient and family interactions
Level 4 *Independently develops a plan to optimize personal and professional well-being* *Independently develops a plan to remediate or improve limits in the knowledge/skills of oneself or the team*	● Independently identifies ways to manage personal stress and reassesses progress based on the initial plan ● Self-assesses and seeks additional feedback on skills responding to emotional cues during patient and family interactions
Level 5 *Coaches others when emotional responses or limitations in knowledge/skills do not meet professional expectations*	● Assists in organizational efforts to address clinician well-being after patient diagnosis/prognosis/death ● Works with multidisciplinary team to develop a feedback framework for learners around family meetings
Assessment Models or Tools	● Direct observation ● Institutional online training modules ● Self-assessment and personal learning plan
Curriculum Mapping	●
Notes or Resources	● 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. ● Local resources, including Employee Assistance and Employee/Student Health Services ● Hicks PJ, Schumacher D, Guralnick S, Carraccio C, Burke AE. Domain of competence: personal and professional development. *Acad Pediatr*. 2014;14(2 Suppl):S80-97. https://www.academicpedsjnl.net/article/S1876-2859(13)00332-X/fulltext. 2019. ● ACGME. "Well-Being Tools and Resources." https://dl.acgme.org/pages/well-being-tools-resources. Accessed 2022.

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication **Overall Intent:** To deliberately use language and behaviors to form constructive relationships with patients, identify communication barriers including self-reflection on biases, and minimize those biases in the doctor-patient relationship; organize and lead communication around shared decision making	
Milestones	**Examples**
Level 1 *Demonstrates respect and establishes rapport* *Recognizes the need to adjust communication strategies based on patient need and context*	● Introduces self and team members, identifies patient and others in the room, and engages all parties in health care discussion ● Identifies need for trained interpreter with non-English-speaking patients ● Uses language appropriate the patient's level of understanding
Level 2 *Establishes a therapeutic relationship in straightforward encounters using active listening and clear language* *Identifies barriers to effective communication (e.g., language, disability) while accurately communicating one's own role within the health care system* *Verifies patient's/patient's family's understanding of the clinical situation to optimize effective communication*	● Avoids medical jargon and restates patient perspective when discussing colorectal cancer screening ● Recognizes the need for handouts with diagrams and pictures to communicate information to a patient who is unable to read ● Prioritizes and sets agenda at the beginning of the appointment for a new patient with chronic abdominal pain
Level 3 *Establishes a therapeutic relationship in challenging patient encounters using active listening and clear language* *When prompted, reflects on biases while attempting to minimize communication barriers* *With guidance, uses shared decision making to align the patient's/patient's family's values, goals, and preferences with treatment options to make a personalized care plan*	● Acknowledges patient's request for an MRI for chronic abdominal pain without red flags and arranges timely follow-up visit to align diagnostic plan with goals of care ● In a discussion with the family member, acknowledges difficulty in patient finding a medical provider to manage their chronic abdominal discomfort ● Conducts a family meeting to determine a plan for chronic abdominal discomfort including but not limited to involving chronic pain service, alternative and complementary medicine, and psychiatric care
Level 4 *Easily establishes therapeutic relationships, with attention to the patient's/patient's family's concerns and context, regardless of complexity*	● Continues to engage representative family members with disparate goals in the care of a patient with a terminal illness

Independently recognizes biases while attempting to proactively minimize communication barriers *Independently, uses shared decision making to make a personalized care plan*	● Reflects on bias related to colon cancer death of learner's father and solicits input from faculty members about mitigation of bias when counseling patients around colon cancer screening ● Uses patient and family input to engage pastoral care and develop a plan for home hospice in the terminally ill patient, aligned with the patient's values
Level 5 *Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships* *Role models self-awareness while identifying a contextual approach to minimize communication barriers* *Role models shared decision making in the patient's/patient's family's communication, including those with a high degree of uncertainty/conflict*	● Leads a discussion group on personal experience of moral distress ● Develops a fellowship curriculum on social justice that addresses bias ● Serves on a hospital bioethics committee
Assessment Models or Tools	● Direct observation ● OSCE ● Self-assessment including self-reflection exercises ● Skills needed to Set the state, Elicit information, Give information, Understand the patient, and End the encounter (SEGUE) ● Standardized patients
Curriculum Mapping	●
Notes or Resources	● Laidlaw A, Hart J. Communication skills: an essential component of medical curricula. Part I: Assessment of clinical communication: AMEE Guide No. 51. *Med Teach*. 2011;33(1):6-8. https://www.tandfonline.com/doi/full/10.3109/0142159X.2011.531170. 2019. ● Makoul G. Essential elements of communication in medical encounters: the Kalamazoo consensus statement. *Acad Med*. 2001;76(4):390-393. https://journals.lww.com/academicmedicine/Fulltext/2001/04000/Essential_Elements_of_Communication_in_Medical.21.aspx#pdf-link. 2019. ● Makoul G. The SEGUE Framework for teaching and assessing communication skills. *Patient Educ Couns*. 2001;45(1):23-34. https://www.sciencedirect.com/science/article/abs/pii/S0738399101001367?via%3Dihub. 2019.

	● Symons AB, Swanson A, McGuigan D, Orrange S, Akl EA. A tool for self-assessment of communication skills and professionalism in residents. *BMC Med Educ*. 2009;9:1. https://bmcmededuc.biomedcentral.com/articles/10.1186/1472-6920-9-1. 2019 ● Chander B, Kule R, Baiocco P, et al. Teaching the competencies: using objective structured clinical encounters for gastroenterology fellows. *Clin Gastroenterol Hepatol*. 2009;7(5):509-14. https://www.cghjournal.org/article/S1542-3565(08)01110-5/fulltext. 2019. ● Shah B, Miller R, Poles M, et al. Informed consent in the older adult: OSCEs for assessing fellows' ACGME and geriatric competencies. *Am J Gastroenterol*. 2011;106(9):1575-1579. https://journals.lww.com/ajg/Abstract/2011/09000/Informed_Consent_in_the_Older_Adult__OSCEs_for.2.aspx. 2019.

Interpersonal and Communication Skills 2: Interprofessional and Team Communication **Overall Intent:** To effectively communicate with the health care team, including consultants, in both straightforward and complex situations	
Milestones	**Examples**
Level 1 *Respectfully receives a consultation request* *Uses language that values all members of the health care team*	● Receives inpatient consult request and asks clarifying questions politely and with mutual respect ● Acknowledges the contribution of each member of the team to the patient
Level 2 *Clearly and concisely responds to a consultation request* *Communicates effectively with all health care team members, including inpatient and outpatient providers*	● Communicates diagnostic evaluation recommendations clearly and concisely in an organized and timely manner ● Sends a message in electronic health record to the patient's primary outpatient Gastroenterologist informing them of patients hospitalization due to a procedure-related adverse event
Level 3 *Checks understanding of primary team when providing consultation recommendations* *Uses active listening to adapt communication style to fit team needs*	● After a consultation has been completed, communicates with the primary care team to verify they have received and understand the recommendations ● When receiving treatment recommendations from an attending physician, repeats back the plan to ensure understanding
Level 4 *Coordinates recommendations from different members of the health care team to optimize patient care and resolve conflicts over recommendations*	● Initiates a multidisciplinary meeting to develop a shared care plan regarding management of HCC including explaining rationale for liver directed therapy, resection, or transplant
Level 5 *Role models flexible communication strategies that value input from all health care team members, resolving conflict when needed*	● Mediates a conflict resolution between different members of the health care team
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● Roth CG, Eldin KW, Padmanabhan V, Freidman EM. Twelve tips for the introduction of emotional intelligence in medical education. *Med Teach*. 2019;41(7):1-4. https://www.tandfonline.com/doi/full/10.1080/0142159X.2018.1481499. 2019. ● Green M, Parrott T, Cook G., Improving your communication skills. *BMJ*. 2012;344:e357. https://www.bmj.com/content/344/bmj.e357. 2019.

	● Henry SG, Holmboe ES, Frankel RM. Evidence-based competencies for improving communication skills in graduate medical education: a review with suggestions for implementation. *Med Teach*. 2013;35(5):395-403. https://www.tandfonline.com/doi/full/10.3109/0142159X.2013.769677. 2019. ● Dehon E, Simpson K, Fowler D, Jones A. Development of the faculty 360. *MedEdPORTAL*. 2015;11:10174. https://www.mededportal.org/publication/10174/. 2019. ● Lane JL, Gottlieb RP. Structured clinical observations: a method to teach clinical skills with limited time and financial resources. *Pediatrics*. 2000;105(4):973-7. https://pdfs.semanticscholar.org/8a78/600986dc5cffcab89146df67fe81aebeaecc.pdf. 2019. ● Braddock CH, Edwards KA, Hasenberg NM, Laidley TL, Levinson W. Informed decision making in outpatient practice: time to get back to basics. *JAMA*. 1999;282(24):2313-2320. https://jamanetwork.com/journals/jama/fullarticle/192233. 2019. ● François, J. Tool to assess the quality of consultation and referral request letters in family medicine. *Can Fam Physician*. 2011;57(5):574–575. https://www.cfp.ca/content/57/5/574.long. 2019. ● Fay D, Mazzone M, Douglas L, Ambuel B. A validated, behavior-based evaluation instrument for family medicine residents. *MedEdPORTAL*. 2007;3:622. https://www.mededportal.org/publication/622/#260535. 2019. ● NYU GI OSCE Toolkit. http://universe.gi.org/osce.asp. 2019.

Interpersonal and Communication Skills 3: Communication within Health Care Systems **Overall Intent:** To effectively communicate using a variety of methods	
Milestones	**Examples**
Level 1 *Accurately records information in the patient record*	● Creates documentation that is accurate but may include extraneous information and/or information which is copied forward without review
Safeguards patient personal health information	● Shreds patient list after rounds; avoids talking about patients in the elevator
Level 2 *Demonstrates organized diagnostic and therapeutic reasoning through notes in the patient record*	● Creates organized and accurate documentation outlines clinical reasoning that supports the treatment plan
Demonstrates accurate and appropriate use of documentation shortcuts	● Develops disease specific documentation templates
Communicates through appropriate channels as required by institutional policy (e.g., patient safety reports, cell phone/pager use)	● Recognizes that a communication breakdown has happened and respectfully brings the breakdown to the attention of the chief fellow or faculty member
Level 3 *Reports diagnostic and therapeutic reasoning in the patient record in a timely manner*	● When new data is available, documents an updated differential and plan of care in the medical record
Appropriately selects direct (e.g., telephone, in-person) and indirect (e.g., progress notes, text messages) forms of communication based on context	● Calls patient immediately about potentially critical test result
Respectfully uses appropriate channels to offer clear and constructive suggestions to improve the system	● Offers ideas for how to have more interactive fellows' conference during the annual program evaluation committee meeting
Level 4 *Communicates clearly, concisely, efficiently, and in an organized written form, and provides anticipatory guidance*	● If the evening hemoglobin is less than seven gm/L, specifies to transfuse and call the on-call fellow in the daily consult progress note
Achieves written or verbal communication (patient notes, email, etc.) that serves as an example for others to follow	● Provides verbal face to face organized concise weekend sign-out to on call fellow with next steps along with a written sign-out document

Initiates difficult conversations with appropriate stakeholders in a professional manner to improve the system	● Talks directly to an emergency room physician about breakdowns in communication in order to prevent recurrence
Level 5 *Models feedback to improve others' written communication* *Guides departmental or institutional communication around policies and procedures* *Facilitates dialogue regarding systems issues among larger community stakeholders (institution, health care system, field)*	● Participates in a divisional workgroup to create a more organized and clear inpatient consultation template ● Leads a task force established by the hospital QI committee to develop a plan to improve house staff hand-offs ● Meaningfully participates in a committee to examine readmissions for GI bleeding
Assessment Models or Tools	● Audit of written sign-out ● Chart stimulated recall ● Direct observation ● Medical record (chart) audit ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● Bierman JA, Hufmeyer KK, Liss DT, Weaver AC, Heiman HL. Promoting responsible electronic documentation: validity evidence for a checklist to assess progress notes in the electronic health record. *Teach Learn Med.* 2017;29(4):420-432. https://www.tandfonline.com/doi/full/10.1080/10401334.2017.1303385. 2019. ● Starmer AJ, et al. I-pass, a mnemonic to standardize verbal handoffs. *Pediatrics*. 2012;129(2):201-204. https://pediatrics.aappublications.org/content/129/2/201?sso=1&sso_redirect_count=1&nfstatus=401&nftoken=00000000-0000-0000-0000-000000000000&nfstatusdescription=ERROR%3a+No+local+token. 2019. ● Haig KM, Sutton S, Whittington J. SBAR: a shares mental model for improving communications between clinicians. *Jt Comm J Qual Patient Saf*. 2006;32(3):167-75. https://www.jointcommissionjournal.com/article/S1553-7250(06)32022-3/fulltext. 2019.

To help programs transition to the new version of the Milestones, the ACGME has mapped the original Milestones 1.0 to the new Milestones 2.0. Indicated below are where the subcompetencies are similar between versions. These are not exact matches, but are areas that include similar elements. Not all subcompetencies map between versions. Inclusion or exclusion of any subcompetency does not change the educational value or impact on curriculum or assessment.

Milestones 1.0	Milestones 2.0
PC1: Gathers and synthesizes essential and accurate information to define each patient's clinical problem(s).	PC1: Data Gathering and Non-Procedural Diagnostic Testing MK2: Clinical Reasoning
PC2: Develops and achieves comprehensive management plan for each patient.	PC2: Patient Management in Gastrointestinal and Liver Disease
PC3: Manages patients with progressive responsibility and independence	PC2: Patient Management in Gastrointestinal and Liver Disease
PC4a: Demonstrates skill in performing and interpreting invasive procedures	PC3: Technical Procedures – Liver Biopsy
PC5: Requests and provides consultative care	ICS2: Interprofessional and Team Communication ICS3: Communication within Health Care Systems
MK1: Possesses Clinical knowledge	MK1: Clinical Knowledge of Gastrointestinal and Liver Disease (Non-Procedural)
MK2: Knowledge of diagnostic testing and procedures	MK1: Clinical Knowledge of Gastrointestinal and Liver Disease (Non-Procedural)
MK3: Scholarship	No match
SBP1: Works effectively within an interprofessional team	ICS2: Interprofessional and Team Communication
SBP2: Recognizes system error and advocates for system improvement	SBP1: Patient Safety and Quality Improvement
SBP3: Identifies forces that impact the cost of health care, and advocates for and practices cost-effective care	SBP2: System Navigation for Patient-Centered Care SBP3: Physician Role in Health Care Systems
SBP4: Transitions patients effectively within and across health delivery systems	SBP2: System Navigation for Patient-Centered Care
PBLI1: Monitors practice with a goal for improvement	PBLI2: Reflective Practice and Commitment to Personal Growth
PBLI2: Learns and improves via performance audit	PBLI2: Reflective Practice and Commitment to Personal Growth
PBLI3: Learns and improves via feedback	PBLI2: Reflective Practice and Commitment to Personal Growth
PBLI4: Learns and improves at the point of care	PBLI1: Evidence-Based and Informed Practice
PROF1: Has professional and respectful interactions with patients, caregivers, and members of the interprofessional team	PROF1: Professional Behavior and Ethical Principles PROF3: Self-Awareness and Help-Seeking ICS1: Patient- and Family-Centered Communication ICS2: Interprofessional and Team Communication

PROF2: Accepts responsibility and follows through on tasks	PROF2: Accountability/ Conscientiousness
PROF3: Responds to each patient's unique characteristics and needs	ICS1: Patient- and Family-Centered Communication
PROF4: Exhibits integrity and ethical behavior in professional conduct	PROF1: Professional Behavior and Ethical Principles
ICS1: Communicates effectively with patients and caregivers	ICS1: Patient- and Family-Centered Communication
ICS2: Communicates effectively in interprofessional teams	ICS2: Interprofessional and Team Communication
ICS3: Appropriate utilization and completion of health records	ICS3: Communication within Health Care Systems

Available Milestones Resources

Milestones 2.0: Assessment, Implementation, and Clinical Competency Committees Supplement, 2021 - *https://meridian.allenpress.com/jgme/issue/13/2s*

Milestones Guidebooks: https://www.acgme.org/milestones/resources/

- *Assessment Guidebook*
- *Clinical Competency Committee Guidebook*
- *Clinical Competency Committee Guidebook Executive Summaries*
- *Implementation Guidebook*
- *Milestones Guidebook*

Milestones Guidebook for Residents and Fellows: https://www.acgme.org/residents-and-fellows/the-acgme-for-residents-and-fellows/

- Milestones Guidebook for Residents and Fellows
- Milestones Guidebook for Residents and Fellows Presentation
- Milestones 2.0 Guide Sheet for Residents and Fellows

Milestones Research and Reports: https://www.acgme.org/milestones/research/

- *Milestones National Report*, updated each fall
- *Milestones Predictive Probability Report,* updated each fall
- *Milestones Bibliography*, updated twice each year

Developing Faculty Competencies in Assessment courses - https://www.acgme.org/meetings-and-educational-activities/courses-and-workshops/developing-faculty-competencies-in-assessment/

Assessment Tool: Direct Observation of Clinical Care (DOCC) - https://dl.acgme.org/pages/assessment

Assessment Tool: Teamwork Effectiveness Assessment Module (TEAM) - https://team.acgme.org/

Improving Assessment Using Direct Observation Toolkit - https://dl.acgme.org/pages/acgme-faculty-development-toolkit-improving-assessment-using-direct-observation

Remediation Toolkit - https://dl.acgme.org/courses/acgme-remediation-toolkit

Learn at ACGME has several courses on Assessment and Milestones - https://dl.acgme.org/