Supplemental Guide: Complex General Surgical Oncology

ACGME

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Milestones Supplemental Guide

This document provides additional guidance and examples for the Complex General Surgical Oncology 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: Patient Evaluation and Clinical Decision Making **Overall Intent:** To progressively demonstrate skill acquisition in clinical assessment and develop multidisciplinary treatment plan for patients with cancer	
Milestones	**Examples**
Level 1 *Identifies relevant oncologic information (e.g., clinical assessment, imaging, pathology) to develop a differential diagnosis* *Discusses surgical options for treatment*	● When a patient presents with a liver lesion, elicits a focused history, performs a physical exam, and reviews diagnostic reports; differential diagnosis includes both benign and malignant lesions ● Knows that surgical options include wedge resection or formal hepatectomy
Level 2 *Discriminates the quality of the relevant information to determine if additional information (i.e., diagnostics) is needed* *Discusses multidisciplinary options for treatment*	● Determines need for advanced liver imaging, possible biopsy and other diagnostic procedures and testing ● Knows that multidisciplinary options could include ablative techniques, embolization, neoadjuvant chemotherapy, and surgical resection
Level 3 *With assistance, integrates oncologic information with patient specific factors to design a diagnostic and work-up plan* *With assistance, creates a multidisciplinary treatment plan*	● With guidance from the attending, based on patient history of alcohol use, magnetic resonance imaging (MRI) findings of early enhancement and elevation of alpha-fetoprotein, determines no biopsy is necessary as it is consistent with hepatocellular carcinoma ● With the attending, refers to tumor board for discussion of ablation, resection, or transplantation
Level 4 *Independently integrates oncologic information with patient specific factors to design a succinct diagnostic and work-up plan* *Independently creates a multidisciplinary treatment plan*	● Based on patient history of alcohol use, MRI findings of early enhancement and elevation of alpha fetoprotein, independently determines that no biopsy is necessary as it is consistent with hepatocellular carcinoma ● Independently presents to tumor board for discussion of ablation, resection, or transplantation
Level 5 *Appraises gaps in literature and research related to diagnostic work-up and multidisciplinary treatment plans to propose future investigations*	● Identifies potential for expanded role of transplantation in the management of hepatic malignancy
Assessment Models or Tools	● Assessment of case based discussion ● Direct observation ● Medical record (chart) audit ● Multisource feedback

Curriculum Mapping	●
Notes or Resources	● Complex General Surgical Oncology (CGSO) SCORE Curriculum ● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews

Patient Care 2: Management of Intra-Operative Complications **Overall Intent:** To progressively recognize, manage, and anticipate common and rare intra-operative complications	
Milestones	**Examples**
Level 1 *Identifies types of intra-operative complications and management strategies*	● When performing a thyroidectomy, appreciates the possible complications including: recurrent laryngeal nerve injury, hypoparathyroidism, bleeding, and/or injury to adjacent structures
Level 2 *With assistance, recognizes and manages intra-operative complications*	● With attending assistance, recognizes parathyroid devascularization that could lead to hypoparathyroidism
Level 3 *Independently recognizes and manages intra-operative complications*	● Independently recognizes parathyroid devascularization that could lead to hypoparathyroidism
Level 4 *Anticipates and prevents common intra-operative complications*	● Determines extent of surgery balancing oncologic needs versus risk of parathyroid devascularization, and autografts devascularized parathyroid into sternocleidomastoid muscle
Level 5 *Anticipates and prevents rare intra-operative complications*	● Recognizes the potential of hereditary hyperparathyroidism and autografting into a more surgically accessible site (forearm)
Assessment Models or Tools	● Assessment of case based discussion ● Direct observation ● Mock oral exam ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● CGSO SCORE Curriculum ● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews ● Review of operative videos

Patient Care 3: Intra-Operative Oncologic Decision Making **Overall Intent:** To progressively demonstrate competence in recognition and utilization of intra-operative findings and their impact on oncologic decision making during operative resections for patients with cancer	
Milestones	**Examples**
Level 1 *Lists potential intra-operative findings that would require refinement of pre-operative surgical plan*	● In a patient with pancreatic adenocarcinoma who is scheduled for a Whipple, lists intra-operative findings of carcinomatosis, vascular involvement, and metastatic nodal disease outside of the surgical resection site that would require changes in surgical plan
Level 2 *Identifies intra-operative findings that require refinement of pre-operative surgical plan*	● Intra-operatively, identifies tumor involvement of the portal vein
Level 3 *With assistance, refines pre-operative surgical plan based on intra-operative findings*	● Discusses with the attending the surgical options for en bloc resection and portal vein reconstruction
Level 4 *Independently refines pre-operative surgical plan based on common intra-operative findings*	● Communicates surgical options for en bloc resection and portal vein reconstruction including portal vein patching, in situ bypass, etc.
Level 5 *Independently refines pre-operative surgical plan based on complex intra-operative findings*	● Identifies potential for extended pancreatic resection due to tumor extension beyond pancreatic neck and limited pancreatic remnant and can articulate the risks and benefits of a completion pancreatectomy
Assessment Models or Tools	● Case-based discussion assessment ● Direct observation ● Mock oral examination ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● CGSO SCORE Curriculum ● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews ● Review of operative videos

Patient Care 4: Intra-Operative Patient Care – Procedural Skills **Overall Intent:** To demonstrate progressive technical skill in tissue handling and dissection	
Milestones	**Examples**
Level 1 *Demonstrates limited tissue-handling skills* *Requires prompting to identify appropriate tissue planes*	● Cannot dissect the porta without causing bleeding ● In performing a hepatectomy, cannot recognize avascular attachments that require dissection for mobilization of the liver
Level 2 *Inconsistently demonstrates careful tissue handling* *Identifies appropriate plane but requires redirection to maintain dissection in the optimal tissue plane*	● Dissects the biliary system but struggles with hepatic arterial and portal venous structures ● Initiates mobilization, but hesitates more posteriorly in navigating the hepatic venous anatomy, requiring guidance
Level 3 *Consistently demonstrates careful tissue handling* *Visualizes tissue plane, identifies and dissects relevant normal anatomy*	● Consistently dissects all structures of the extra-hepatic porta ● Fully mobilizes the liver in preparation for resection
Level 4 *Adapts tissue handling based on tissue quality* *Visualizes tissue plane, identifies and dissects relevant abnormal anatomy*	● Adapts tissue handling of the porta in a patient with portal hypertension ● Recognizes aberrant hepatic arterial anatomy and modifies operative approach
Level 5 *Identifies innovative operative techniques, instrumentation, operative approaches, or significant improvement in established techniques*	● Investigates innovative strategies for assessment of liver remnant function prior to hepatectomy
Assessment Models or Tools	● Case-based assessment ● Direct observation ● Multisource feedback ● Mock oral examination
Curriculum Mapping	●
Notes or Resources	● CGSO SCORE Curriculum

	● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews ● Review of operative videos

Patient Care 5: Intra-Operative Patient Care – Operative Autonomy **Overall Intent:** To progressively demonstrate increasing levels of operative autonomy	
Milestones	**Examples**
Level 1 *Moves forward in the operation only with active direction*	● Participates in a low anterior resection with the attending actively guiding the operation ● Performs lumpectomy but requires the attending prompting to achieve the margins and specimen orientation
Level 2 *Moves fluidly through the course of the operation with minimal prompting*	● Completes the abdominal portion of the operation but requires redirection for maintaining the total mesorectal excision dissection plane in the pelvis ● Completes the mastectomy portion of a modified radical mastectomy but requires assistance with the axillary node dissection
Level 3 *Independently moves fluidly through the course of common operations and anticipates next steps*	● Independently completes a low anterior resection including abdominal lymphadenectomy, and total mesorectal excision dissection with appropriate margins ● Independently completes a partial mastectomy with sentinel node biopsy
Level 4 *Independently moves fluidly through the course of complex operations and anticipates next steps*	● Independently completes at low anterior resection with hand-sewn coloanal anastomosis with diversion ● Independently completes a modified radical mastectomy
Level 5 *Independently moves fluidly through the course of rare and complex operation and anticipates next steps*	● Independently completes a total pelvic exenteration for a T4 rectal cancer ● Independently completes a nipple-sparing mastectomy
Assessment Models or Tools	● Case-based discussion assessment ● Direct observation ● Mock oral examination ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● CGSO SCORE Curriculum ● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews ● Review of operative videos

Patient Care 6: Immediate Post-Operative Care **Overall Intent:** To progressively recognize and manage an uneventful and a complicated post-operative course	
Milestones	**Examples**
Level 1 *Manages routine post-operative course*	● After low anterior resection, provides routine supportive post-operative care
Level 2 *Manages common post-operative complications*	● After low anterior resection, effectively manages a superficial wound infection
Level 3 *Independently manages complicated post-operative course and complications*	● After low anterior resection, effectively manages an anastomotic leak in a patient with sepsis
Level 4 *Anticipates and provides early, effective intervention for post-operative complications*	● After low anterior resection, recognizes early signs of an anastomotic leak and initiates early work-up and effective treatment prior to overt sepsis
Level 5 *Identifies gaps in post-operative management and complications to be addressed in quality improvement/research initiatives*	● Based on outcomes research, identification of who would benefit from routine anastomotic diversion
Assessment Models or Tools	● Case-based discussion assessment ● Direct observation ● Medical record (chart) review ● Mock orals ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● CGSO SCORE Curriculum ● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews

Patient Care 7: Post-Operative Oncologic Management **Overall Intent:** To integrate patient factors and tumor characteristics into multidisciplinary adjuvant treatment decisions as well as surveillance and survivorship schema	
Milestones	**Examples**
Level 1 *Recognizes that pathologic staging impacts oncologic therapeutic decisions* *Identifies the rationale for a surveillance plan*	● After operating on a 40-year-old patient with a right-sided colon cancer, understands that the pathologic evaluation of T and N stage will help determine the role for further treatment, such as chemotherapy ● Verbalizes that surveillance computerized tomography (CT) scans can be used to monitor for liver or lung recurrence
Level 2 *Applies details of pathologic staging to oncologic therapeutic decisions* *Describes a general oncologic surveillance plan*	● In the pathology report which reveals at T3N1a ascending colon cancer, recognizes the role for adjuvant chemotherapy ● Given the diagnosis of Stage IIIa colon cancer, plans for a surveillance program with a CT scan in six and 12 months with physical exam and a colonoscopy and carcino-embryonic antigen
Level 3 *Identifies patient and tumor-specific factors relevant to oncologic therapy* *Follows an evidence-based surveillance plan, when available, and recognizes need for a survivorship care plan*	● Identifies the need for additional tumor testing to include microsatellite instability (MSI) testing and potential need for BRAF or methylation of MLH1 testing which may impact both oncologic therapies and surveillance strategies ● Sees the opportunity for referrals to cancer support groups, patient wellness programs, and genetic counselors
Level 4 *Integrates patient factors, pathologic staging and tumor specific factors to select treatment options* *Integrates patient and tumor-specific factors in the construction of an evidence-based surveillance and survivorship care plan*	● In a patient with a T3N0 tumor that was poorly differentiated with signet ring cell features, identifies that the tumor is also MSI-high by immunohistochemistry without a BRAF mutation; uses the lack of benefit and potential harm for 5FU-based adjuvant therapy ● Appropriately refers the patient to genetic counseling for mutational testing and understanding implications for family members; additionally refers the patient to a high-risk clinic for intensive surveillance
Level 5 *Appraises gaps in literature and research related to oncologic therapies or surveillance plans to propose future investigations*	● Recognizes that there is limited data on the potential benefit of adjuvant immunotherapy in patients with MSI-high colorectal cancer and proposes further study
Assessment Models or Tools	● Case-based discussion assessment ● Direct observation ● Medical record (chart) audit ● Mock oral examinations

	● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● CGSO SCORE Curriculum ● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews ● National Guidelines (e.g., NCCN, ASCO)

Medical Knowledge 1: Anatomy **Overall Intent:** To acquire knowledge in applied surgical anatomy	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of surgically relevant normal anatomy*	● Describes relevant anatomy associated with a pancreaticoduodenectomy
Level 2 *Demonstrates knowledge of surgically relevant anatomic variations*	● Describes potential aberrant anatomy encountered during pancreaticoduodenectomy
Level 3 *With assistance, identifies surgically relevant anatomic variations and alters patient management accordingly*	● With attending guidance, recognizes aberrant right hepatic artery based on pre-operative imaging and alters procedure accordingly
Level 4 *Independently identifies surgically relevant anatomic variations and alters patient management accordingly*	● Independently recognizes aberrant right hepatic artery based on pre-operative imaging and alters procedure accordingly
Level 5 *Leads advanced anatomy discussion at a multidisciplinary conference and/or in operating room*	● Leads a multidisciplinary tumor board discussion about the relevant anatomy associated with a pancreaticoduodenectomy
Assessment Models or Tools	● Case-based discussion assessment ● Direct observation ● Mock oral examination
Curriculum Mapping	●
Notes or Resources	● CGSO SCORE Curriculum ● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews

Medical Knowledge 2: Cancer Biology **Overall Intent:** To incorporate cancer biology into multidisciplinary management	
Milestones	**Examples**
Level 1 *Demonstrates basic knowledge of cancer biology*	● Takes family history that includes malignancies related to hereditary breast cancer
Level 2 *Demonstrates comprehensive knowledge of cancer biology and clinical implications*	● Based on family history and patient factors, recommends genetic testing for hereditary breast cancer
Level 3 *With assistance, applies knowledge of cancer biology into medical decision making*	● With attending guidance, uses the results of genetic testing to guide further diagnostic assessment and management
Level 4 *Independently incorporates knowledge of cancer biology into medical decision making*	● Independently uses the results of genetic testing to guide further diagnostic assessment and management
Level 5 *Recommends novel investigations based on knowledge of cancer biology and clinical trial data*	● Studies aberrant mutations of unknown significance in breast cancer panels
Assessment Models or Tools	● Case-based discussion assessment ● Direct observation ● Mock oral examinations
Curriculum Mapping	●
Notes or Resources	● CGSO SCORE Curriculum ● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews

Medical Knowledge 3: Therapeutics **Overall Intent:** To demonstrate knowledge of the different multidisciplinary therapies used in the treatment of cancer patients, including chemotherapy, radiation, immunotherapy, and targeted therapies	
Milestones	**Examples**
Level 1 *Lists broad categories of multimodal oncologic therapies*	● Recognizes that in a patient with breast cancer, there is a potential role for endocrine therapies, monoclonal antibody therapies, chemotherapies, radiation, and surgery
Level 2 *Demonstrates knowledge of standard multimodal oncologic therapeutic options, including indications and contraindications*	● Recognizes that patients with ER+PR+Her2Neu+ breast cancer require hormonal therapy and herceptin therapy as part of their treatment plan and can discuss potential side effects
Level 3 *Demonstrates knowledge of data to support the use of multimodal oncologic therapies and impacts on surgical treatment*	● Recognizes that a patient with triple negative breast cancer benefits from chemotherapy as a component of their treatment based on data in the literature
Level 4 *Incorporates data, patient factors, and tumor factors in the selection of multimodal oncologic therapies*	● Recognizes that an 88-year-old patient with poor performance status and a 15-mm estrogen receptor cancer is optimally treated by hormonal therapy alone
Level 5 *Appraises gaps in literature and research related to therapies to propose future investigations*	● Designs a study to assess the value of prophylactic mastectomy for patients with a strong family history of breast cancer and no known mutation
Assessment Models or Tools	● Case-based discussion assessment ● Direct observation ● Medical record (chart) audit ● Mock oral exams
Curriculum Mapping	●
Notes or Resources	● CGSO SCORE Curriculum ● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews ● National Guidelines (e.g., NCCN, ASCO)

Medical Knowledge 4: Clinical Trials **Overall Intent:** To demonstrate knowledge about clinical trials	
Milestones	**Examples**
Level 1 *Describes the basics of clinical study design and levels of evidence*	● Describes the differences in design and level of data between studies performing database analysis, chart reviews, retrospective clinical trials, and prospective randomized clinical trial
Level 2 *Understands the different phases of oncologic clinical trials*	● Articulates the steps of getting experimental therapeutic agents approved through the clinical trial process with Phase I assessing toxicities, Phase II assessing efficacy, and Phase III assessing efficacy versus current standard of care
Level 3 *Demonstrates general knowledge of clinical trial design and clinical trial infrastructure*	● Understands and critiques the processes for patient enrollment, database management, clinical trials reporting, and analyses of clinical results
Level 4 *Demonstrates advanced knowledge of clinical trial design and clinical trial infrastructure*	● Describes appropriate inclusion/exclusion criteria, treatment controls, and number of patients needed for statistical significance in the clinical trial design ● Articulates the importance of Disease Site Specific Committees, Institutional Review Board, and Clinical Trials Office
Level 5 *Designs and proposes clinical trials*	● Drafts a proposal for a prospective phase II neoadjuvant immunotherapy clinical trial in patients with stage II melanoma evaluating T cell receptor expression
Assessment Models or Tools	● Case-based discussion assessment ● Journal clubs ● Published research
Curriculum Mapping	●
Notes or Resources	● CGSO SCORE Curriculum ● Society for Surgical Oncology. Education. https://www.surgonc.org/surgical-oncology-education/. 2019. ● Literature reviews

Systems-Based Practice 1: Patient Safety and Quality Improvement (QI) **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 how to report patient safety events* *Demonstrates knowledge of and describes institutional quality improvement initiatives*	● Lists patient misidentification, wrong-site surgery, or medication errors as common patient safety events ● Describes how to report errors in your environment ● Describes fishbone tool
Level 2 *Reports patient safety events through institutional reporting systems (simulated or actual)* *Participates in institutional quality improvement initiatives*	● Identifies lack of appropriate use of venous thromboembolism prophylaxis ● Reports lack of hand sanitizer dispenser at each clinical exam room to the medical director ● Summarizes protocols resulting in decreased spread of hospital acquired *C. diff*
Level 3 *Participates in disclosure of patient safety events to patients and families (simulated or actual)* *Demonstrates the skills required to identify, develop, implement, and analyze an institutional quality improvement project*	● Preparing for morbidity and mortality presentations ● Participation in communication with patients/families about a medical error ● Participation in project identifying root cause of surgical site infection
Level 4 *Independently discloses patient safety events to patients and families (simulated or actual)* *Creates, implements, and assesses quality improvement initiatives at the institutional level*	● Collaborates with a team to conduct the analysis of transfusion reactions and can effectively communicate with patients/families about those events ● Participates in the completion of a QI project to improve surgical site infection rates within the practice, including assessing the problem, articulating a broad goal, developing a SMART (Specific, Measurable, Achievable, Realistic, Time-Based) objective plan, and monitoring progress and challenges
Level 5 *Role models or mentors others in the disclosure of patient safety events* *Creates, implements, and assesses national quality improvement initiatives*	● 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 surgical site infection rates in the immunocompromised population and shares results with stakeholders

Assessment Models or Tools	● Direct observation ● E-module multiple choice tests ● Medical record (chart) audit ● Multisource feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● Institute of Healthcare Improvement. http://www.ihi.org/Pages/default.aspx. 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, including transitions of care* *Demonstrates knowledge of the oncologic population health needs and disparities*	● Identifies all involved health care providers throughout the spectrum of the patient's care as members of the team ● Lists the essential components of a sign-out and transitions of care ● Identifies that a cancer patient has surveillance and survivorship needs
Level 2 *Coordinates care of patients in routine clinical situations effectively using the roles of the interprofessional teams, including transitions of care* *Identifies specific population health needs and inequities for their local oncologic population*	● Coordinates care with the medical oncologist for consideration of adjuvant therapy after colon surgery ● Routinely uses formal transition-of-care process for a stable patient during night float sign-out ● Identifies that geographic remoteness may be a factor in where patients receive their adjuvant care
Level 3 *Coordinates care of patients in complex clinical situations effectively using the roles of their interprofessional teams, including transitions of care* *Coordinates with local resources to effectively meet the needs of an oncologic patient population*	● Coordinates care with medical oncology, radiation oncology, nutritionist, social work and wound care nurse after low anterior resectioning with ileostomy ● Routinely utilizes formal transition of care process when transferring a patient to the surgical intensive care unit (SICU) ● Develops a diagnostic and management plan in anticipation of dehydration from high ostomy output in a geographically remote patient
Level 4 *Role models effective coordination of patient-centered care among different disciplines including transitions of care* *Participates in changing and adapting individual practice to provide for the needs of specific oncologic populations*	● Leads team members in working with consultants to review cases/recommendations ● Assists in designing an app to remotely monitor ostomy output ● Assists in designing outreach program for post-discharge recovery
Level 5 *Analyzes the process of care coordination and leads in the design and implementation of improvements including transitions of care*	● Develops a protocol for an enhanced recovery plan after low anterior resectioning

Leads innovations and advocates for oncologic populations with health care inequities	● Leads development of telehealth services for geographically remote surgical oncology patients
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Outcomes of QI projects ● Quality metrics and goals mined from electronic health records (EHR) ● 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.

Systems-Based Practice 3: Physician Role in Health Care Systems **Overall Intent:** To understand the fellow's 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, payment systems)*	● Understands the impact of health plan coverage on prescription drugs for individual patients ● Understands the cost of different energy devices in surgery ● Identifies that notes must meet coding requirements
Level 2 *Describes how components of a complex health care system are interrelated, and how this impacts patient care*	● 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 anticoagulant ● Understands that the cost of energy devices should be balanced against clinical benefit ● Recognizes that appropriate documentation can influence the severity of illness determination upon discharge
Level 3 *Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)*	● Ensures that a patient, after distal pancreatectomy, has an early scheduled follow-up appointment at discharge to evaluate for duct leak ● Discusses risks and benefits of pursuing MRI imaging in the setting of breast cancer screening 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 transition of care*	● Ensures proper documentation of three day qualifying hospital stay prior to discharging a patient to a skilled nursing facility for physical therapy ● Works collaboratively to improve patient assistance resources for a patient with a recent amputation and limited resources
Level 5 *Advocates for or leads systems change that enhances high-value, efficient, and effective patient care and transition of care*	● Works with community or professional organizations to advocate against known causes of cancer ● Improves informed consent process for non-English-speaking patients requiring interpreter services ● Completes a Master's of Health Care Administration degree program or equivalent
Assessment Models or Tools	● Direct observation ● Implemented programs ● Medical record (chart) audit
Curriculum Mapping	●
Notes or Resources	● 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. www.kff.org. 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. doi:10.31478/201703e. ● 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 the available evidence and how to incorporate patient preferences and values into the care of patients*	● Identifies evidence-based guidelines
Level 2 *Articulates clinical questions and elicits patient preferences and values in order to guide evidence-based care*	● In a patient with low-risk differentiated thyroid cancer in which different extents of surgery offer the same oncologic outcomes, identifies and discusses potential evidence-based treatment options, and solicits patient perspective
Level 3 *Locates and applies the best available evidence, integrated with patient preference, to the care of patients*	● In a patient with low-risk differentiated thyroid cancer in which different extents of surgery offer the same oncologic outcomes, uses best available evidence, patient factors, and patient preferences to determine optimal treatment plan
Level 4 *Critically appraises and applies evidence, even in the face of uncertain and/or conflicting evidence, to guide care, tailored to the individual patient*	● Accesses the primary literature to identify alternative treatments to surgery for metastatic pancreatic neuroendocrine tumor ● Working with a patient with preconceived treatment notion to identify and accept an alternative approach that is evidence based
Level 5 *Coaches others to critically appraise and apply evidence for patients; and/or participates in the development of guidelines*	● Leads clinical teaching on application of best practices in critical appraisal of cancer care ● As part of a team, develops a prehabilitation program in anticipation of esophagectomy
Assessment Models or Tools	● Direct observation ● Outcomes research ● Presentation evaluation ● Program creation
Curriculum Mapping	●
Notes or Resources	● National Institutes of Health. U.S. National Library of Medicine. Write Your Application. https://grants.nih.gov/grants/how-to-apply-application-guide/format-and-write/write-your-application.htm. 2019. ● National Institutes of Health. U.S. National Library of Medicine. PubMed Tutorial. https://www.nlm.nih.gov/bsd/disted/pubmedtutorial/cover.html. 2019. ● Institutional IRB guidelines ● National Guidelines (e.g., NCCN, ASCO)

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; reflect on all domains of practice, personal interactions, and behaviors, and their impact on colleagues and patients (reflective mindfulness)	
Milestones	**Examples**
Level 1 *Accepts responsibility for personal and professional development by establishing goals* *Identifies the factors that contribute to gap(s) between expectations and actual performance*	● Sets goals for fellowship training ● Understands that personal study program is necessary to avoid gaps in knowledge
Level 2 *Demonstrates openness to performance data (feedback and other input) in order to inform goals* *Analyzes and reflects on the factors that contribute to gap(s) between expectations and actual performance*	● Respectfully receives and integrates feedback and adjusts clinical practice and technique ● When prompted, develops individual education plan to address their gaps in knowledge
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*	● Occasionally asks for feedback from patients, families, faculty members, and patient care team members ● Using educational resources, creates a personal curriculum to reduce gaps in knowledge
Level 4 *Consistently seeks performance data with adaptability and humility* *Challenges assumptions and considers alternatives in narrowing the gap(s) between expectations and actual performance*	● Consistently asks for feedback patients, families, faculty members, and team members and continuously adjusts clinical practice and technique to improve ● Using educational resources that include self-assessment to identify and minimize his/her gaps in knowledge
Level 5 *Role models consistently seeking performance data with adaptability and humility* *Coaches others on reflective practice*	● Models practice improvement and adaptability ● Mentors junior learners in developing their individualized learning plans
Assessment Models or Tools	● Direct observation ● Multisource feedback
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. doi:10.1097/ACM.0b013e3181acf25f. ● 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. doi: 10.1097/ACM.0b013e3182a352e6.

Practice-Based Learning and Improvement 3: Scholarly Activity **Overall Intent:** To demonstrate progressive meaningful participation in scholarly activity to enhance the environment of inquiry	
Milestones	**Examples**
Level 1 *Identifies areas worthy of scholarly investigation*	● Identifies and formulates a research question
Level 2 *Formulates a scholarly plan under supervision of a mentor*	● Creates an original research plan with a mentor
Level 3 *Presents products of scholarly activity at local meetings*	● Presents original research at the institutional level or local chapter of the American Cancer Society
Level 4 *Disseminates products of scholarly activity at regional or national meetings, and/or submits an abstract to regional, state, or national meetings*	● Podium presentation of original research at a national meeting
Level 5 *Publication of independent research that has generated new medical knowledge, educational programs, or process improvement*	● First or senior author a peer-reviewed publication on original research
Assessment Models or Tools	● Assessment of quality of presentations and/or research ● Assessment of quality of publications, protocols, and/or grants
Curriculum Mapping	●
Notes or Resources	● ACGME requirement: o Fellows must demonstrate the ability to: design and implement a prospective data base; conduct clinical cancer research, especially prospective clinical trials; use statistical methods to properly evaluate results of published research studies; guide other learners or other personnel in laboratory or clinical oncology research; and navigate the interface of basic science with clinical cancer care to facilitate translational research

Professionalism 1: Professional Behavior and Ethical Principles **Overall Intent:** To model ethical and professional behavior, identify lapses, and use appropriate resources for managing ethical and professional dilemmas	
Milestones	**Examples**
Level 1 *Identifies and describes potential triggers for professionalism lapses and how to report* *Demonstrates knowledge of the ethical principles underlying the care of cancer patients*	● Understands that being fatigued may cause a lapse in professionalism ● Articulates how the principle of "do no harm" applies to a patient who may not benefit from a laparotomy in the setting of widely metastatic pancreatic cancer with carcinomatosis
Level 2 *Demonstrates professional behavior in routine situations and takes responsibility for own professionalism lapses* *Analyzes straightforward situations using ethical principles*	● Respectfully approaches a nurse who did not see an order written on morning rounds about the importance of the nasogastric tube for decompression and risk for aspiration ● Recognizes the impact of being late to the operating room secondary to rounding inefficiencies ● Identifies and applies ethical principles involved in informed consent when the resident is unclear of all of the risks
Level 3 *Demonstrates professional behavior in complex or stressful situations* *Analyzes complex situations using ethical principles and recognizes need to seek help in managing and resolving complex ethical situations*	● Appropriately responds to a distraught family member, following an unsuccessful resuscitation attempt of a relative ● After noticing a colleague's inappropriate social media post, reviews policies related to posting of content and seeks guidance for resolution ● Offers treatment options for a terminally ill patient while recognizing own limitations and biases, and consistently honoring the patient's choice
Level 4 *Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in self and others* *Recognizes and uses appropriate resources for managing and resolving ethical dilemmas as needed*	● Models respect for patients and promotes the same from colleagues, when a patient has been waiting for 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*	● Coaches others when their behavior fails to meet professional expectations, and creates a performance improvement plan to prevent recurrence

Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution	● Engages stakeholders to address excessive wait times in the surgical oncology clinic to decrease patient and provider frustrations that lead to unprofessional behavior
Assessment Models or Tools	● Direct observation ● Global evaluation ● Multisource feedback ● Oral or written self-reflection ● Simulation
Curriculum Mapping	●
Notes or Resources	● American Medical Association. Ethics. https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. 2019. ● Ferreres AR, Angelos P, Singer EA, Gabler Blair P. *Ethical Issues in Surgical Care*. Chicago, IL: American College of Surgeons; 2017. ● 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. ● 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 the 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*	● Timely attendance at conferences
Responds promptly to requests or reminders to complete tasks and responsibilities	● Completes end-of-rotation evaluations ● Responds promptly to reminders from program administrator to complete work-hour logs
Level 2 *Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations*	● Completes administrative tasks, documents completion of safety modules, procedure review, and licensing requirements by specified due date
Recognizes situations that may impact own ability to complete tasks and responsibilities in a timely manner	● Before going out of town, completes tasks in anticipation of lack of computer access while traveling
Level 3 *Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations*	● Notifies attending of multiple competing demands on call, appropriately triages tasks, and asks for assistance from other fellows or faculty members as needed
Proactively implements strategies to ensure that the needs of patients, teams, and systems are met	● In preparation for being out of the office, arranges coverage for assigned clinical tasks on patients and ensures appropriate continuity of care
Level 4 *Recognizes situations that may impact others' 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 nurse manager to streamline patient discharges and leads team to find solutions to the problem
Assessment Models or Tools	● Compliance with deadlines and timelines ● Direct observation ● Global evaluations ● Multisource feedback ● Self-evaluations and reflective tools

Curriculum Mapping	●
Notes or Resources	● American Medical Association Code of Ethics. https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. Accessed 2019 ● Code of conduct from fellow/resident institutional manual ● Expectations of fellowship program regarding accountability and professionalism

Professionalism 3: Well-Being **Overall Intent:** To identify, manage, 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 of the team, with assistance	● After discussion with the attending, acknowledges own emotional response to patient's terminal cancer diagnosis ● Receives feedback on missed emotional cues after a family meeting
Level 2 *Independently recognizes status of personal and professional well-being* *Independently recognizes status of personal and professional well-being of 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 optimize personal and professional well-being of the team*	● With the multidisciplinary team, develops a reflective response to deal with personal impact of difficult patient encounters and disclosures ● Integrates feedback from the multi-disciplinary team to develop a plan for identifying and responding to emotional cues during the next family meeting
Level 4 *Independently develops a plan to optimize personal and professional well-being* *Independently develops a plan to optimize personal and professional well-being of the team*	● Independently identifies ways to manage personal stress (physical activity) ● Recognizes that team member needs time away to deal with a personal tragedy and proactively coordinates coverage
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 multi-disciplinary team to develop a feedback framework for learners around difficult conversations with patients regarding a terminal cancer diagnosis
Assessment Models or Tools	● Direct observation ● Group interview or discussions for team activities ● Institutional online training modules ● Self-assessment and personal learning plan
Curriculum Mapping	●
Notes or Resources	● Local resources, including Employee Assistance ● ACGME. Tools and Resources. https://www.acgme.org/What-We-Do/Initiatives/Physician-Well-Being/Resources. 2019.

	● General Surgery SCORE Curriculum Professionalism Delivering Bad News https://www.surgicalcore.org/index 2019. ● General Surgery SCORE Curriculum on Wellness https://www.surgicalcore.org/resources 2019.

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication **Overall Intent:** To develop language and behaviors to form constructive relationships with patients, identify and minimize communication barriers; organize and lead communication around shared decision making	
Milestones	**Examples**
Level 1 *Establishes a professional rapport with patients and communicates in a clear and understandable manner* *Identifies common barriers to effective communication (e.g., language, disability)*	● Introduces self and faculty member, 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
Level 2 *Establishes a therapeutic relationship in straightforward patient encounters and compassionately delivers medical information* *Identifies complex barriers to effective communication (e.g., health literacy, cultural)*	● Avoids medical jargon and restates patient perspective when discussing surgical procedures and cancer diagnosis ● Recognizes the need for handouts with diagrams and pictures to communicate information to a patient who is unable to read
Level 3 *Establishes a therapeutic relationship in challenging patient encounters and acknowledges uncertainty in alignment of goals* *When prompted, reflects on personal biases while attempting to minimize communication barriers*	● Continues to engage patient and representative family members with disparate goals in the care of a patient with cancer ● After discussion with attending, realizes that she/he has been avoiding family discussion of withdrawal of care given the fellow's grandfather's recent death from pancreatic cancer
Level 4 *Uses shared decision making to align patient/family values, goals, and preferences with treatment options to make a personalized care plan* *Independently recognizes personal biases while attempting to proactively minimize communication barriers*	● Conducts a family meeting regarding withdrawal of care for a terminally ill cancer patient ● Uses patient and family input to engage palliative care and develop a plan for home hospice in the terminally ill cancer patient, aligned with the patient's values ● Admits to an aversion to caring for a patient with cancer who continues to smoke
Level 5 *Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships*	● Leads a discussion group on personal experience of moral distress

Role models self-awareness while identifying a contextual approach to minimize communication barriers	● Develops a curriculum on social justice which addresses unconscious bias ● Serves on a hospital bioethics committee
Assessment Models or Tools	● Direct observation ● Mock oral examination ● Multisource feedback ● Self-assessment including self-reflection exercises
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. doi:10.3109/0142159X.2011.531170. ● 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. ● 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. doi:10.1186/1472-6920-9-1.

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 *Uses language that values all members of the health care team* *Respectfully receives feedback on performance as a member of the health care team*	● When asking for a cardiology consultation for a patient with acute postoperative electrocardiogram changes and elevated cardiac enzymes, respectfully relays the diagnosis and need for assessment ● Receives consult request for a patient with painless jaundice and pancreatic head mass, asks clarifying questions politely ● Respectfully listens to the advanced practice provider who states their concern that the fellow is being too short with patients during morning rounds
Level 2 *Communicates information effectively with all health care team members* *Solicits feedback on performance as a member of the health care team*	● As a consultant, communicates diagnostic evaluation recommendations clearly and concisely in an organized and timely manner with the primary medical team ● Asks the advanced practice provider and the morning rounding team if the fellow's interactions with patients have improved
Level 3 *Uses active listening to adapt communication style to fit team needs* *Communicates concerns and provides feedback to peers and learners*	● When receiving treatment recommendations from a consulting physician, repeats back the plan to ensure understanding ● After a consultation has been completed, communicates patient care concerns to the primary care and verifies they have received and understand the recommendations
Level 4 *Coordinates recommendations from different members of the health care team to optimize patient care and maintains effective communication in crisis situations* *Communicates feedback and constructive criticism to superiors*	● Seeks and receives consultation from gastroenterology and interventional radiology regarding a hemodynamically unstable patient with a gastrointestinal bleed and determines best method of addressing bleeding and communicates plan to consultants ● Meets with attending and discusses the attending's teaching style and clarifies the need for more feedback on their performance
Level 5 *Role models flexible communication strategies that value input from all health care team members, resolving conflict when needed* *Facilitates regular health care team-based feedback in complex situations*	● Mediates a conflict resolution between different members of the health care team
Assessment Models or Tools	● Direct observation

	● Global assessment ● Multisource feedback
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. doi:10.1080/0142159X.2018.1481499. ● Green M, Parrott T, Cook G., Improving your communication skills. *BMJ*. 2012;344:e357. doi:10.1136/bmj.e357. ● 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. doi:10.3109/0142159X.2013.769677. ● Dehon E, Simpson K, Fowler D, Jones A. Development of the faculty 360. *MedEdPORTAL*. 2015;11:10174. doi:10.15766/mep_2374-8265.10174. ● 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. doi:10.1001/jama.282.24.2313.

Interpersonal and Communication Skills 3: Communication within Health Care Systems **Overall Intent:** To demonstrate effective communication skills within the context of the health care system	
Milestones	**Examples**
Level 1 *Accurately records information in the patient record* *Communicates through appropriate channels as required by institutional policy (e.g., patient safety reports, cell phone/pager usage)*	● Documentation is timely and accurate, without unedited copy/paste, but may include extraneous information ● Identifies institutional and departmental communication hierarchy for concerns and safety issues
Level 2 *Demonstrates organized diagnostic and therapeutic reasoning through notes in the patient record* *Demonstrates efficient use of electronic health record to communicate with the health care team*	● Organized and accurate documentation outlines clinical reasoning that supports the treatment plan ● Develops documentation templates for the hepatobiliary rotation and allows for appropriate sign-out
Level 3 *Concisely integrates all relevant data from outside systems and prior encounters and reports diagnostic and therapeutic reasoning in the patient record* *Appropriately selects direct (e.g., telephone, in-person) and indirect (e.g., progress notes, secure text messages) forms of communication based on context and urgency*	● In clinic, sees and evaluates a patient referred with a liver mass from a primary care physician, reviews all records from outside hospital, and succinctly documents all relevant information in the medical record ● Effectively uses the system to appropriately notify a patient immediately about potentially critical test result
Level 4 *Communicates clearly, concisely, timely, and in an organized written form, including anticipatory guidance* *Achieves written or verbal communication (e.g., patient notes, email) that serves as an example for others to follow*	● Documents goals of care for a patient with end-stage cancer and anticipates catastrophic events based on poor prognosis ● Consultation notes are exemplary and used by the service to teach others
Level 5 *Models feedback to improve others' written communication*	● Leads a task force established by the hospital QI committee to develop a plan to improve hand-offs

Guides departmental or institutional communication around policies and procedures	● Meaningfully participates in a committee to examine communication between the surgical teams and intensive care unit (ICU) to minimize ICU readmissions
Assessment Models or Tools	● 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. doi:10.1080/10401334.2017.1303385. ● Starmer AJ, et al. I-pass, a mnemonic to standardize verbal handoffs. *Pediatrics*. 2012;129(2):201-204. doi:10.1542/peds.2011-2966. ● 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.

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.

Milestones 1.0	Milestones 2.0
PC1: Hepatobiliary/Pancreas: Evaluation and Multimodality Care	PC1: Patient Evaluation and Clinical Decision Making
PC2: Hepatobiliary/Pancreas: Technical Aspects of Surgical Interventions	PC2: Management of Intra-Operative Complications PC3: Intra-Operative Oncologic Decision Making PC4: Intra-Operative Patient Care – Procedural Skills PC5: Intra-Operative Patient Care – Operative Autonomy
PC3: Endocrine/Head and Neck: Evaluation and Multimodality Care	PC1: Patient Evaluation and Clinical Decision Making
PC4: Endocrine/Head and Neck: Technical Aspects of Surgical Interventions	PC2: Management of Intra-Operative Complications PC3: Intra-Operative Oncologic Decision Making PC4: Intra-Operative Patient Care – Procedural Skills PC5: Intra-Operative Patient Care – Operative Autonomy
PC5: Gastrointestinal/Gynecology/Thoracic: Evaluation and Multimodality Care	PC1: Patient Evaluation and Clinical Decision Making
PC6: Gastrointestinal/Gynecology/Thoracic: Technical Aspects of Surgical Interventions	PC2: Management of Intra-Operative Complications PC3: Intra-Operative Oncologic Decision Making PC4: Intra-Operative Patient Care – Procedural Skills PC5: Intra-Operative Patient Care – Operative Autonomy
PC7: Breast: Evaluation and Multimodality Care	PC1: Patient Evaluation and Clinical Decision Making
PC8: Breast: Technical Aspects of Surgical Interventions	PC2: Management of Intra-Operative Complications PC3: Intra-Operative Oncologic Decision Making PC4: Intra-Operative Patient Care – Procedural Skills PC5: Intra-Operative Patient Care – Operative Autonomy
PC9: Melanoma, Sarcoma, Common and Rare Cutaneous and Soft Tissue Malignancies: Evaluation and Multimodality Care	PC1: Patient Evaluation and Clinical Decision Making
PC10: Melanoma, Sarcoma, Common and Rare Cutaneous and Soft Tissue Malignancies: Technical Aspects of Surgical Interventions	PC2: Management of Intra-Operative Complications PC3: Intra-Operative Oncologic Decision Making PC4: Intra-Operative Patient Care – Procedural Skills PC5: Intra-Operative Patient Care – Operative Autonomy

No match	PC6: Immediate Post-Operative Care
No match	PC7: Post-Operative Oncologic Management
MK1: General Knowledge Assessment	MK1: Anatomy MK2: Cancer Biology MK3: Therapeutics
No match	MK4: Clinical Trials
SBP1: Administrative Responsibility	SBP1: Patient Safety and Quality Improvement PROF2: Accountability/ Conscientiousness
SBP2: Coordination and Transitions of Care	SBP2: System Navigation for Patient-Centered Care ICS2: Interprofessional and Team Communication
PBLI1: Improvement of Care	SBP1: Patient Safety and Quality Improvement
PBLI2: Scholarly Activity	PBLI1: Evidence-Based and Informed Practice PBLI3: Scholarly Activity
PBLI3: Teaching	No match
PBLI4: Self-Directed Learning	PBLI2: Reflective Practice and Commitment to Personal Growth
PROF1: Professionalism and Personal Behavior	PROF1: Professional Behavior and Ethical Principles
PROF2: Ethical Issues in Cancer Patients	PROF1: Professional Behavior and Ethical Principles
PROF3: Personal Responsibility	PROF2: Accountability/ Conscientiousness
PROF4: Healthy Work Environment	PROF3: Wellness
ICS1: Effective Communication with Patients and Families	ICS1: Patient and Family-Centered Communication
ICS2: Effective Communication with the Multidisciplinary Cancer Team	ICS2: Interprofessional and Team Communication
No match	SBP3: Physician Role in Health Care Systems
No match	ICS3: Communication within Health Care Systems