Supplemental Guide: Hematology

ACGME

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Milestones Supplemental Guide

This document provides additional guidance and examples for the Hematology 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.

The individuals who have crafted this supplemental guide and in particular, the resources identified for each Milestone, wish to make clear that the resources are intended as suggestions only and do not represent a comprehensive list. We hope and expect that individual programs will identify additional useful resources to help assess fellow performance on each of the Milestones. We also want to make clear that many of the authors of this supplemental guide are members or are otherwise affiliated with the organizations whose resources we site in this document (e.g., National Comprehensive Cancer Network, American Society of Clinical Oncology, American Society of Hematology).

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.

Some milestone descriptions include statements about performing independently. It is important to use this guide in conjunction with the ACGME specialty-specific Program Requirements. Specific language has been included that is best defined through the Program Requirements. One notable area within the requirements is VI.A.2.c) which includes the definitions for levels of supervision:

> Levels of Supervision
>
> To promote oversight of resident supervision while providing for graded authority and responsibility, the program must use the following classification of supervision:
>
> Direct Supervision – the supervising physician is physically present with the resident and patient.
>
> Indirect Supervision:
>
> with Direct Supervision immediately available – the supervising physician is physically within the hospital or other site of patient care, and is immediately available to provide Direct Supervision.
>
> with Direct Supervision available – the supervising physician is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic and/or electronic modalities, and is available to provide Direct Supervision.
>
> Oversight – the supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered

Patient Care 1: Accesses Data Sources to Synthesize Patient and Disease Specific Information Necessary for Clinical Assessment **Overall Intent:** To build upon those skills learned during internal medicine residency and to address specialty-specific skills	
Milestones	**Examples**
Level 1 *Accesses data and gathers a history standard for general internal medicine* *Performs a physical examination standard for general internal medicine*	● Performs a routine history and physical exam on a patient with pancytopenia that lacks specialty specific findings ● Performs a routine history and physical exam on a patient with breast cancer that lacks specialty-specific findings
Level 2 *Gathers a disease-specific history, with assistance* *Performs a disease-specific physical examination, with assistance*	● Performs a history and examination on a patient with pancytopenia that addresses symptoms of cytopenias; includes findings of lymphatic, spleen, and skin examination ● Performs a history and examination on a patient with a breast cancer that includes assessment of lymph nodes, size of mass, breast skin changes, breast cancer risk factors, menstrual status, and family history
Level 3 *Accesses data from multiple sources and collects disease-specific history, including psychosocial issues, from the patient and family members* *Completes a disease-specific physical examination*	● Independently performs a history and examination on a patient with a pancytopenia that includes assessment of peripheral blood smear, prior blood counts, family history of hematologic illness, exposures and prior treatments but sometimes misses important details ● Independently performs a history and examination on a patient with a breast cancer that includes assessment of psychosocial status, pathology reports with ER/PR and Her2/neu status, previous mammograms and a more detailed family history
Level 4 *Consistently synthesizes data from multiple sources and collects a disease-specific history from the patient and family members* *Consistently completes a disease-specific physical examination*	● Consistently performs a history and examination on a patient with a pancytopenia that includes assessment of peripheral blood smear, prior blood counts, family history of hematologic illness, exposures and prior treatments ● Consistently performs a history and examination on a patient with a breast cancer that includes assessment of psychosocial status, previous pathology report, previous mammograms, comorbidities, and a more detailed family history
Level 5 *Role models gathering and synthesis of clinical information*	● Consistently discerns the most important history and physical exam findings to efficiently assess the patient
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit
Curriculum Mapping	●
Notes or Resources	● Coulehan JL, Block MR. Respect, genuineness, and empathy. In: Coulehan JL, Block MR. *The Medical Interview: Mastering Skills for Clinical Practice*. Philadelphia, PA: FA Davis Company; 2006:21-44.

	● Bickley L, Szilagyi PG. *Bates' Guide to Physical Examination and History-Taking*. 11th ed. Philadelphia, PA: Wolters Kluwer Health; 2012. ● Lu KH, Wood ME, Daniels M, et al. American Society of Clinical Oncology Expert Statement: collection and use of a cancer family history for oncology providers. *Journal of Clinical Oncology*. 2014;32(8):833-840. doi:10.1200/JCO.2013.50.9257.

Patient Care 2: Diagnoses and Assigns Stage and Severity of Hematology Disorders **Overall Intent:** To determine diagnosis, and assign stage and/or severity of disease	
Milestones	**Examples**
Level 1 *Generates a differential diagnosis expected of a graduating internal medicine resident* *Orders testing without specialty-specific differential diagnosis*	● Orders initial diagnostic studies for a patient who presents with weight loss, malaise, and palpable lymphadenopathy
Level 2 *Interprets initial diagnostic studies to generate a specialty-specific differential diagnosis* *Determines stage of disorder*	● Determines appropriate initial diagnostic laboratory studies and best location for biopsy ● Assigns clinical stage based on diagnostic laboratory and radiographic studies
Level 3 *Orders advanced diagnostic studies for common disorders when appropriate* *Determines clinical comorbidities*	● Orders immunophenotypic and molecular studies for common lymphomas ● Orders studies to determine presence of clinical co-morbidities
Level 4 *Diagnoses uncommon disorders and determines disease severity using evidence-based studies*	● Uses specialty diagnostic studies to diagnose uncommon lymphoma variants ● Incorporates existing comorbidities to assign disease severity and prognosis
Level 5 *Role models the assignments of stage and disease severity, informed by evidence-based studies and guidelines for specialty disorders*	● Serves as resource for application of evidence-based studies and guidelines and considerations of rare lymphoma variants
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● American Joint Committee on Cancer. Cancer Staging. https://cancerstaging.org Accessed 2019. ● National Comprehensive Cancer Network. NCCN Guidelines. https://www.nccn.org/professionals/physician_gls/default.aspx. Accessed 2019. ● World Health Organization. WHO Classification of Tumors. http://publications.iarc.fr/Book-And-Report-Series/Who-Iarc-Classification-Of-Tumours. Accessed 2019.

	● Arber DA, Orazi A, Hasserjian R, et al. The 2016 revision to the World Health Organization classification of myeloid neoplasms and acute leukemia. *Blood*. 2016;127(20):2391-2405. doi:10.1182/blood-2016-03-643544. ● ASCO University. Cancer Topics. https://university.asco.org/cancer-topics. Accessed 2019. ● American Society of Hematology. ASH Academy. https://ashacademy.org. Accessed 2019.

Patient Care 3: Formulates the Management Plan **Overall Intent:** To establish management plans for hematologic and oncologic diseases	
Milestones	**Examples**
Level 1 *Formulates a management plan for patients without comorbidities, with assistance*	● With assistance, assigns initial treatment for middle-aged patient without comorbidities with diagnosis of chronic lymphocytic leukemia
Level 2 *Formulates a management plan using decision-support tools for patients without comorbidities*	● Uses NCCN Guidelines to assign initial treatment
Level 3 *Formulates a management plan with consideration of disease and patient factors and enrollment in clinical trials*	● Considers patient factors, molecular diagnostics and comorbidities to explore clinical trial options
Level 4 *Consistently formulates management plans that include consideration of clinical trial enrollment and conforms to patient preferences and goals of care*	● Consistently incorporates patient preferences and goals of care in development of the management plan ● Consistently formulates therapeutic plans that include options for standard care, open clinical trials, and alternative treatments
Level 5 *Serves as an expert in formulating management plans*	● Is called upon by colleagues to provide up-to-date data from recent meetings and publications
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit
Curriculum Mapping	●
Notes or Resources	● National Comprehensive Cancer Network. NCCN Guidelines. https://www.nccn.org/professionals/physician_gls/default.aspx. Accessed 2019. ● Wildiers H, Heeren P, Puts M, et al. International Society of Geriatric Oncology consensus on geriatric assessment in older patients with cancer. *Journal of Clinical Oncology*. 2014;32(24):2595-2603. doi:10.1200/JCO.2013.54.8347. ● Mohile SG, Dale W, Somerfield MR, et al. Practical assessment and management of vulnerabilities in older patients receiving chemotherapy: ASCO guideline for geriatric oncology. *Journal of Clinical Oncology*. 2018;36(22):2326-2347. doi:10.1200/JCO.2018.78.8687.

Patient Care 4: Adjusts Management Plans for Acute and Chronic Issues **Overall Intent:** To modify management plans for hematologic and oncologic diseases	
Milestones	**Examples**
Level 1 *Adjusts management plans according to standard guidelines and toxicities, with assistance*	● Considers therapeutic options for a patient with chronic lymphocytic leukemia on treatment and noted to have progressive disease
Level 2 *Adjusts management plans according to standard guidelines and toxicities*	● Modifies treatment using NCCN Guidelines
Level 3 *Adjusts management plans based on response to treatment, side effects of the treatment, and comorbidities*	● Modifies treatment, taking into account comorbidities and response to previous therapy ● Modifies treatment using additional diagnostic and molecular testing information
Level 4 *Adjusts management plans based on anticipation and recognition of subtle toxicities and long-term sequelae and/or changes in patient preferences and goals*	● Consistently uses expected response to therapy, anticipated toxicities, patient goals of care, and clinical trial options when developing a new management plan
Level 5 *Serves as an expert in developing and implementing pathways that influence management plans*	● Is called upon by colleagues to provide up-to-date data from recent meetings and publications
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit
Curriculum Mapping	●
Notes or Resources	● National Comprehensive Cancer Network. NCCN Guidelines. https://www.nccn.org/professionals/physician_gls/default.aspx. Accessed 2019. ● National Cancer Institute. Clinical Trials Information for Patients and Caregivers. https://www.cancer.gov/about-cancer/treatment/clinical-trials. Accessed 2019.

Patient Care 5: Competence in Procedures: **● Performance of Bone Marrow Aspirations and Biopsies** **● Assessment and Interpretation of Complete Blood Count** **● Interpretation of Peripheral Blood Smears** **● Use of Systemic Therapies through all Therapeutic Routes** **Overall Intent:** To be proficient in all of these procedures	
Milestones	**Examples**
Level 1 *Discusses the indications for and assists with all required procedures* *Discusses potential procedural complications*	● Discusses the indication for a bone marrow aspiration and biopsy in a patient with probable recurrent acute myeloid leukemia and assists the supervisor during the procedure
Level 2 *Performs all required procedures, with direct supervision* *Recognizes complications of procedures and enlists help*	● Performs the procedure with the supervisor in attendance; recognizes when the procedure could be difficult, such as in a patient with large body habitus
Level 3 *Competently performs all required procedures, with indirect supervision* *Manages complications of procedures, with supervision*	● Performs bone marrow aspirations and biopsies independently, with supervisor readily available to assist if necessary
Level 4 *Proficiently and independently performs all required procedures* *Anticipates and independently manages complications of procedures*	● Performs bone marrow aspirations and biopsies on patients with large body habitus that requires longer needles and repositioning
Level 5 *Serves as an expert for all required procedures and their complications*	● Serves as the role model for incoming fellows for bone marrow aspirate and biopsy
Assessment Models or Tools	● Direct observation ● Simulation
Curriculum Mapping	●
Notes or Resources	● Focosi D. Bone marrow aspiration and biopsy. *The New England Journal of Medicine*. 2010;362(2):182-183. doi:10.1056/NEJMc0910593. ● Malempati S, Joshi S, Lai S, Braner DA, Tegtmeyer K. Videos in clinical medicine. Bone marrow aspiration and biopsy. *The New England Journal of Medicine*. 2009;361(15):28. doi:10.1056/NEJMvcm0804634.

	● Pereira I, George TI, Arber DA. *Atlas of Peripheral Blood: The Primary Diagnostic Tool*. Philadelphia, PA: Wolters Kluwer; 2012. ● American Society of Clinical Oncology. ACGME, NAS, & Milestones. https://www.asco.org/training-education/education-career-resources/resources-program-directors/acgme-nas-milestones. Accessed 2019.

Medical Knowledge 1: Non-Malignant Hematology (includes Pathophysiology, Diagnostics, Prognostic Information, and Treatment) **Overall Intent:** To build on the knowledge acquired during internal medicine residency in order to provide specialty-specific care for patients with non-malignant hematological disorders	
Milestones	**Examples**
Level 1 *Demonstrates basic knowledge of specialty disorders*	● In the evaluation of a patient with anemia, performs a basic anemia work-up including some, but not all, necessary components
Level 2 *Demonstrates expanding knowledge of specialty disorders and development of clinical reasoning*	● Recognizes the indications for bone marrow biopsy, hemoglobin electrophoresis, direct antiglobulin testing, and the importance of peripheral blood smear review
Level 3 *Demonstrates sufficient knowledge of specialty disorders and clinical reasoning skills to determine evidence-based interventions*	● Understands, diagnoses, and manages common acquired and hereditary anemias; is beginning to understand the pathophysiology and management of rare anemias like paroxysmal nocturnal hemoglobinuria
Level 4 *Synthesizes advanced knowledge of specialty disorders and uses clinical reasoning skills to develop personalized interventions*	● Understands, diagnoses, and manages rare anemias like paroxysmal nocturnal hemoglobinuria, copper deficiency, and congenital bone marrow failure syndromes
Level 5 *Serves as a subject matter expert*	● Is regularly consulted by peers for assistance in the management of common and rare anemias
Assessment Models or Tools	● In-training exam ● Medical record (chart) audit ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● Lichtman MA, Kaushansky K, Prchal JT, Levi MM, Burns LJ, Armitage JO. *Williams Manual of Hematology*. 9th ed. New York, NY: McGraw-Hill Education; 2017. ● Arber DA, Orazi A, Hasserjian R, et al. The 2016 revision to the World Health Organization classification of myeloid neoplasms and acute leukemia. *Blood*. 2016;127(20):2391-2405. doi:10.1182/blood-2016-03-643544.

Medical Knowledge 2: Malignant Hematology (includes Pathophysiology, Diagnostics, Prognostic Information, and Treatment) **Overall Intent:** To build on the knowledge acquired during internal medicine residency to provide specialty-specific care for patients with malignant hematological disorders	
Milestones	**Examples**
Level 1 *Demonstrates basic knowledge of specialty disorders*	● In the evaluation of leukocytosis, determines whether the disorder is lymphoid or myeloid
Level 2 *Demonstrates expanding knowledge of specialty disorders and development of clinical reasoning*	● In the evaluation of leukocytosis, uses basic laboratory and bone marrow results, appropriate imaging study results and clinical factors to stage the patient's disease; recognizes when observation versus treatment is appropriate
Level 3 *Demonstrates sufficient knowledge of specialty disorders and clinical reasoning skills to determine evidence-based interventions*	● Orders and interprets the indicated molecular and cytogenetics studies needed to further define the diagnosis and prognosis of a lymphoid malignancy and to formulate a management plan a patient without significant comorbidities, including consideration on enrollment in clinical trials
Level 4 *Synthesizes advanced knowledge of specialty disorders and uses clinical reasoning skills to develop personalized interventions*	● Personalizes the management plan based on disease characteristics and comorbidities and anticipates and manages toxicities; has a detailed understanding of all the available treatment options
Level 5 *Serves as a subject matter expert*	● Is regularly consulted by peers for assistance in the management of hematologic malignancies
Assessment Models or Tools	● Direct observation ● In-training exam ● Medical record (chart) audit ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● American Society of Hematology. ASH Self-Assessment Program (ASH-SAP). https://www.ashacademy.org/Product/CME_MOC_ProductList/tcsap. Accessed 2019. ● ASCO University. Self-Evaluation Activities. https://university.asco.org/self-evaluation-activities. Accessed 2019. ● National Comprehensive Cancer Network. NCCN Guidelines. https://www.nccn.org/professionals/physician_gls/default.aspx. Accessed 2019.

Medical Knowledge 3: Scholarly Activity **Overall Intent:** To identify areas worthy of investigation, design and implement a plan for investigation, and disseminate the findings of scholarly work	
Milestones	**Examples**
Level 1 *Identifies areas worthy of scholarly investigation*	● After reviewing the literature, identifies the optimal method of teaching a new invasive procedure to house staff
Level 2 *Formulates a scholarly plan under supervision of a mentor*	● With assistance of a mentor, outlines a hypothesis and plan to test two different methods of teaching for a new procedure
Level 3 *Presents products of scholarly activity at local meetings*	● In collaboration with a statistician or supervisor, reviews the data collected during the study of two different teaching methods, writes an abstract, and presents as a poster at a local educational forum
Level 4 *Disseminates products of scholarly activity at regional or national meetings, and/or submits an abstract to regional, state, or national meetings*	● After making a significant contribution to an educational research project, submits an abstract to a nationally recognized educational meeting ● Is contacted by educators from programs for advice regarding educational research
Level 5 *Publication of independent research that has generated new medical knowledge, educational programs, or process improvement*	● Publishes research in peer-reviewed journal
Assessment Models or Tools	● Direct observation ● Portfolio
Curriculum Mapping	●
Notes or Resources	● National Cancer Institute. Clinical Trials Information for Patients and Caregivers. https://www.cancer.gov/about-cancer/treatment/clinical-trials. Accessed 2019. ● Schünemann HJ, Wiercioch W, Brozek J, et al. GRADE Evidence to Decision (EtD) frameworks for adoption, adaption, and de novo development of trustworthy recommendations: GRADE-ADOLOPMENT. *Journal of Clinical Epidemiology*. 2017;81:101-110. doi:10.1016/j.jclinepi.2016.09.009. ● Blome C, Sondermann H, Augustin M. Accepted standards on how to give a Medical Research Presentation: a systematic review of expert opinion papers. *GMS Journal for Medical Education*. 2017;34(1):Doc11. doi:10.3205/zma001088.

Systems-Based Practice 1: Patient Safety **Overall Intent:** To identify patient safety or practice efficiency events and participate in a project with interprofessional colleagues to improve safety or practice	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of common patient safety events* *Demonstrates knowledge of how to report patient safety events*	● Identifies patient identification and medication errors as common safety events ● Is aware that institutions have reporting systems but does not place the report of a patient safety event
Level 2 *Identifies system factors that lead to patient safety events* *Reports patient safety events through institutional reporting systems (simulated or actual)*	● Identifies chemotherapy order set that does not include platelet or white blood cell parameters ● Reports post-chemotherapy bleeding event through the institutional reporting system
Level 3 *Participates in the analysis of patient safety events* *Participates in disclosure of patient safety events to patients and families (simulated or actual)*	● Participates in the analysis of chemotherapy order sets to identify potential safety risks ● In collaboration with the attending, discloses the inappropriate chemotherapy administration due to low blood counts to the patient and family
Level 4 *Conducts analysis of patient safety events and offers error prevention strategies* *Leads disclosure of patient safety events to patients and families with documentation (simulated or actual)*	● Analyzes chemotherapy order sets and offers improvements ● Leads disclosure of the inappropriate chemotherapy administration due to low blood counts to the patient and family
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*	● Leads a multidisciplinary team to improve chemotherapy administration order sets ● Coaches others on how to disclose patient safety events
Assessment Models or Tools	● Direct observation ● Documentation of patient safety project ● Multisource feedback ● Portfolio

Curriculum Mapping	●
Notes or Resources	● Institute for Healthcare Improvement. http://www.ihi.org/Pages/default.aspx. Accessed 2019. ● Steen S, Jaeger C, Price L, Griffen D. Increasing patient safety event reporting in an emergency medicine residency. *BMJ Open Quality*. 2017;6(1):u223876-w5716. doi: 10.1136/bmjquality.u223876.w5716. ● American Medical Association. 5 steps to better patient safety training for residents, fellows. https://www.ama-assn.org/education/improve-gme/5-steps-better-patient-safety-training-residents-fellows. Accessed 2019. ● Bryant-Bova JN. Improving chemotherapy ordering process. *Journal of Oncology Practice*. 2016;12(2):e248-e256. doi: 10.1200/JOP.2015.007443.

Systems-Based Practice 2: Quality Improvement **Overall Intent:** To identify patient safety or practice efficiency events and participate in a project with interprofessional colleagues to improve safety or practice	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of basic quality improvement methodologies and metrics*	● Identifies root cause analysis as one metric for quality improvement
Level 2 *Describes local quality improvement initiatives*	● Identifies an institutional initiative to improve documentation of informed consent for procedures or systemic therapies
Level 3 *Participates in local quality improvement initiatives*	● Participates in institutional project to improve documentation of informed consent for procedures or systemic therapies
Level 4 *Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project*	● Participates in a simulated root cause analysis to determine cause of poor documentation of informed consent for a patient who developed a hematoma after a bone marrow aspiration and biopsy
Level 5 *Creates, implements, and assesses quality improvement initiatives at the institutional or community level*	● Creates an order set for the procedure that has a hyperlink to a required informed consent document
Assessment Models or Tools	● Direct observation ● Documentation of quality improvement project (actual or mock) ● Medical record (chart) audit ● Multisource feedback ● Portfolio
Curriculum Mapping	●
Notes or Resources	● ASCO Practice Central. Quality Improvement Library. https://practice.asco.org/quality-improvement/quality-programs/quality-training-program/quality-improvement-library. Accessed 2019. ● Accordino MK, Heaney ML. Quality improvement and safety curriculum for hematology/oncology fellows at Columbia University. *Journal of Clinical Oncology*. 2018;36(30):247. doi:10.1200/JCO.2018.36.30_suppl.247.

Systems-Based Practice 3: System Navigation for Patient-Centered Care: Coordination and Transitions of Care **Overall Intent:** To coordinate patient-centered care among different disciplines and across health care delivery systems	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of care coordination* *Identifies key elements for safe and effective transitions of care and hand-offs*	● Is aware that an acute leukemia patient will need outpatient care follow up, including laboratory and pegfilgrastim
Level 2 *Coordinates care of patients in routine clinical situations effectively using the roles of their interprofessional teams* *Performs safe and effective transitions of care/hand-offs in routine clinical situations*	● Works with a social worker/health navigator to arrange for home care and laboratory tests ● Inpatient fellow alerts the outpatient team that the patient will be discharged
Level 3 *Coordinates care of patients in complex clinical situations effectively using the roles of their interprofessional teams* *Performs safe and effective transitions of care/hand-offs in complex clinical situations*	● Ensures that the interprofessional outpatient team has systems in place for immediate access to treatment if fever and/or neutropenia develop
Level 4 *Role models effective coordination of patient-centered care among different disciplines and specialties* *Role models and advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems, including outpatient settings*	● Routinely participates in multidisciplinary rounds and coordinates post-discharge care between hematology-oncology, infectious disease, and pharmacy services ● Serves as the model for care transitions including care plans and algorithms, recommendations for blood product support, and key contacts at the referring practices and institution
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*	● Analyzes system processes and develops documentation to improve transitions for patients with acute leukemia who are transferring to different institutions or practices
Assessment Models or Tools	● Direct observation

	● Medical record (chart) audit ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● Lee SJC, Jetelina KK, Marks E, et al. Care coordination for complex cancer survivors in an integrated safety-net system: a study protocol. *BMC Cancer*. 2018;18(1):1204. doi:10.1186/s12885-018-5118-7. ● Wohlauer MV, Arora VM, Horwitz LI, et al. The patient handoff: a comprehensive curricular blueprint for resident education to improve continuity of care. *Academic Medicine*. 2012;87(4):411-418. doi:10.1097/ACM.0b013e318248e766.

Systems-Based Practice 4: System Navigation for Patient-Centered Care: Population Health **Overall Intent:** To adapt practice to provide for the needs of specific populations	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of population and community health care needs*	● Identifies a local population that has barriers to medical care access
Level 2 *Identifies specific population and community health care needs*	● Identifies a population that does not have access to hematology or oncology care due to great distances to travel to receive that care
Level 3 *Identifies local resources to meet community health care needs*	● Initiates referral to set up local nursing service to coordinate patient's long-distance care
Level 4 *Adapts practice to provide for the needs of specific populations*	● Completes blood test monitoring by using a laboratory service located close to the patient's home
Level 5 *Leads innovations and advocates for populations and communities with specific health care needs*	● Develops a telemedicine service to monitor patients' disease status
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback
Curriculum Mapping	●
Notes or Resources	● Medicaid. Telemedicine. https://www.medicaid.gov/medicaid/benefits/telemed/index.html. Accessed 2019. ● Office of Disease Prevention and Health Promotion. Healthy People. Access to Health Services. https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services. Accessed 2019.

Systems-Based Practice 5: Physician Role in Health Care Systems **Overall Intent:** To manage financial factors and incorporate value in shared decision making with patients; to manage various components of the health care system to provide high-value care	
Milestones	**Examples**
Level 1 *Identifies basic financial barriers for individual patients and basic financial components of the health care system* *Identifies key components of the complex health care system*	● Aware that costs of systemic therapy can result in high co-payments and lost wages ● Identifies hospital, skilled nursing facility, finance, personnel, and technology as components of care
Level 2 *Considers financial barriers and quality of care when ordering diagnostic or therapeutic interventions* *Describes how components of a complex health care system are inter-related, and how this impacts ordering therapeutic interventions*	● Considers the costs of systemic therapy when ordering a regimen ● Recognizes that early palliative care consultation can impact the need for other therapeutic interventions
Level 3 *Incorporates value (quality/costs) into shared decision making, with interprofessional team input* *Discusses how individual practice and the broader system affect each other*	● Incorporates the data on disease outcomes into discussions with patients and families regarding systemic therapy options ● Discusses how inefficient communication between services impacts length of stay and readmission rates
Level 4 *Manages financial factors that affect a patient's access to care and decision making* *Manages various components of the complex health care system to provide efficient and effective patient care*	● Addresses financial factors by arranging for as much care as possible to be close to patient's home ● Coordinates care recommendations from the palliative care service and the outpatient team
Level 5 *Role models and teaches patients and interprofessional team members to consider value when making diagnostic and therapeutic recommendations* *Advocates for or leads systems change that enhances high-value, efficient, and effective patient care*	● Leads a conference on identifying patient factors that may impact patients' ability to receive therapy ● Presents institution-specific data to show palliative care outcomes on inpatient quality metrics

Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Quality improvement project
Curriculum Mapping	●
Notes or Resources	● National Cancer Institute. Financial Toxicity and Cancer Treatment. https://www.cancer.gov/about-cancer/managing-care/track-care-costs/financial-toxicity-hp-pdq. Accessed 2019. ● American Academy of Hospice and Palliative Medicine. Quality Initiatives. http://aahpm.org/education/quality. Accessed 2019. ● Agency for Healthcare Research and Quality. Measuring the Quality of Physician Care. https://www.ahrq.gov/talkingquality/measures/setting/physician/index.html. Accessed 2019. ● Agency for Healthcare Research and Quality. Major Physician Measurement Sets. https://www.ahrq.gov/talkingquality/measures/setting/physician/measurement-sets.html. Accessed 2019. ● American College of Physicians. High Value Care. https://www.acponline.org/clinical-information/high-value-care. Accessed 2019.

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice **Overall Intent:** To access and apply evidence to practice even when patients' cases are complicated, the evidence is scarce, or the evidence is conflicting	
Milestones	**Examples**
Level 1 *With assistance, accesses available evidence and practice guidelines for patient care*	● With assistance, reviews the guidelines to choose the best anticoagulation for a patient with provoked deep vein thrombosis
Level 2 *Independently identifies available evidence and practice guidelines for patient care*	● Knows and uses the guidelines to choose the best treatment for a patient with a provoked deep vein thrombosis
Level 3 *Critically appraises evidence and applies to patient care*	● Synthesizes available evidence to make a recommendation for a patient with provoked deep vein thrombosis and morbid obesity
Level 4 *Applies best available evidence, even in the face of insufficient and/or conflicting information*	● Recognizes that the literature has scant and conflicting information about patients with provoked deep vein thrombosis, morbid obesity, underlying cancer diagnosis, and who are under-insured
Level 5 *Serves as a role model to critically appraise and apply evidence to patient care*	● Role models assessment of the literature in order to come up with the best treatment for patients with provoked deep vein thrombosis regardless of the clinical scenarios
Assessment Models or Tools	● Direct observation ● In-training exam ● Medical record (chart) audit
Curriculum Mapping	●
Notes or Resources	● Guyatt G, Rennie D, Meade MO, Cook DJ. *Users' Guides to the Medical Literature*. 3rd ed. New York, NY: Mcgraw-Hill Education; 2015. ● Center for Evidence-Based Medicine. https://www.cebm.net/. Accessed 2019. ● National Comprehensive Cancer Network. NCCN Guidelines. https://www.nccn.org/professionals/physician_gls/default.aspx. Accessed 2019.

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth **Overall Intent:** To improve performance by examining data from their practice and narrowing gaps between actual performance and expected performance; to measure the effectiveness of his/her learning plan and make appropriate changes	
Milestones	**Examples**
Level 1 *Identifies gaps in knowledge and performance* *Actively seeks opportunities to improve*	● Is aware that a regimen of chemotherapy can cause infertility after coaching by the attending physician ● Wants to learn about aplastic anemia
Level 2 *Reflects on the factors which contribute to gaps between expectations and actual performance* *Designs and implements a learning plan, with assistance*	● Reflects on a case in which consent did not include the risk of infertility and requests review papers to learn which regimens of chemotherapy can cause infertility ● With attending, designs a learning plan for aplastic anemia
Level 3 *Institutes changes to narrow the gaps between expectations and actual performance* *Independently creates and implements a learning plan*	● Elects to spend more time in specialty clinics based on in-training exam results ● Independently creates a learning plan on aplastic anemia
Level 4 *Intentionally seeks performance data to narrow the gaps between expectations and actual performance* *Measures the effectiveness of the learning plan and makes appropriate changes*	● Performs chart audit on aplastic anemia patients and compares own outcomes with evidence based outcomes ● Measures the effectiveness of the learning plan by comparing previous and current in-training exam results and makes appropriate modifications
Level 5 *Role models reflective practice* *Facilitates the design and implementation of learning plans for others*	● Consistently reflects on clinical outcomes to improve practice ● Mentors others on assessing performance and developing learning plans
Assessment Models or Tools	● Direct observation ● In-training examination ● Mentored review of learning plan ● Targeted reflective writing
Curriculum Mapping	●
Notes or Resources	● Hojat M, Veloski JJ, Gonnella JS. Measurement and correlates of physicians' lifelong learning. *Academic Medicine*. 2009;84(8):1066-1074. doi:10.1097/ACM.0b013e3181acf25f.

	● Collichio FA, Hess BJ, Muchmore EA, et al. Medical knowledge assessment by hematology and medical oncology in-training examinations are better than program director assessments at predicting subspecialty certification examination performance. *Journal of Cancer Education*. 2017;32(3):647-654. doi: 10.1007/s13187-016-0993-6. ● Burke AE, Benson B, Englander R, Carraccio C, Hicks PJ. Domain of competence: practice-based learning and improvement. *Academic Pediatrics*. 2014;14:S38-S54. doi: 10.1016/j.acap.2013.11.018.

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 knowledge of common ethical principles and potential triggers for professionalism lapses* *Describes when and how to appropriately report professionalism lapses*	● Discusses informed consent, conflict of interest principles, advanced directives, and surrogate decision makers ● Recognizes that fatigue may lead to abrupt behavior some interpret as rude
Level 2 *Analyzes straightforward situations using ethical principles* *Recognizes and takes responsibility for own professionalism lapses*	● Agrees to see a patient who was one hour late for clinic appointment for a colleague who had other responsibilities and needed to leave ● Acknowledges being rude to a nurse over the phone without becoming defensive, making excuses, or blaming others, and then apologizes to the nurse
Level 3 *Manages and resolves complex ethical situations, including personal lapses, with assistance*	● Articulates a plan to transition a patient to another provider due to patient-provider conflict ● Articulates a strategy to manage anger problems in stressful situations that negatively impact others
Level 4 *Intervenes and uses appropriate resources to prevent and manage professionalism lapses and dilemmas in self and others*	● Collaborates with the Ethics Committee and risk management to address a complicated case of patient who has assumed someone else's identity ● Recognizes and reports fatigue and stress in a colleague
Level 5 *Coaches others when their behavior fails to meet professional expectations*	● Proactively identifies poor behavior and works with colleagues in identifying lapses
Assessment Models or Tools	● Direct observation ● Global evaluation ● Multisource feedback ● Self-reflection ● Simulation or role play
Curriculum Mapping	●
Notes or Resources	● American Medical Association. Ethics. https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. Accessed 2019. ● ABIM Foundation. American Board of Internal Medicine. Medical professionalism in the new millennium: a physician charter. *Annals of Internal Medicine*. 2002;136(3):243-246. doi:10.7326/0003-4819-136-3-200202050-00012. ● Byyny RL, Papadakis MA, Paauw DS. *Medical Professionalism Best Practices*. Menlo Park, CA: Alpha Omega Alpha Medical Society; 2015.

	● Levinson W, Ginsburg S, Hafferty F, Lucey CR. *Understanding Medical Professionalism*. 1st ed. New York, NY: McGraw-Hill Education; 2014. ● Jonsen AR, Siegler M, Winslade WJ. *Clinical Ethics: A Practical Approach to Ethical Decisions in Clinical Medicine*. 8th ed. New York, NY: McGraw-Hill Education; 2015. ● UpToDate. Ethical issues in palliative care. https://www.uptodate.com/contents/ethical-issues-in-palliative-care. Accessed 2019. ● Markham MJ, George TJ Jr, Close JL. Fellowship engagement in hematology/oncology professionalism training. *Journal of Clinical Oncology*. 2014;32(11):1164-1166. doi:10.1200/JCO.2013.54.6879.

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*	● After being counseled for delays in renewing prescriptions, acknowledges delays, and promptly responds to prescription refill requests
Level 2 *Performs tasks in a timely manner or provides notification when unable to complete tasks*	● During rounds, receives multiple urgent consult requests and asks attending to assist in triaging patients
Level 3 *Performs tasks in a timely manner with appropriate attention to detail in complex or stressful situations*	● Prioritizes those needing immediate attention and provides appropriate recommendations, despite multiple consults
Level 4 *Takes responsibility in situations that impact the ability of team members to complete tasks and responsibilities in a timely manner*	● Voluntarily assists a colleague who is overwhelmed with multiple urgent consults
Level 5 *Exceeds expectations for supporting team responsibilities*	● Notices call coverage difficulties resulting in colleague stress and leads fellowship class in developing strategies to improve the call coverage structure
Assessment Models or Tools	● Compliance with deadlines and timelines ● Direct observation ● Global/rotation evaluations ● Multisource feedback ● Self-evaluations ● Simulation
Curriculum Mapping	●
Notes or Resources	● ABIM Foundation. American Board of Internal Medicine. Medical professionalism in the new millennium: a physician charter. *Annals of Internal Medicine*. 2002;136(3):243-246. doi:10.7326/0003-4819-136-3-200202050-00012. ● Code of conduct from fellow's home institutional.

Professionalism 3: Fellow Well-Being **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*	● Identifies and communicates personal impact of a patient death, with assistance
Level 2 *Independently recognizes status of personal and professional well-being*	● Independently identifies and communicates personal impact of a patient death
Level 3 *With assistance, proposes a plan to optimize personal and professional well-being*	● With assistance, develops a personal practice to sustain resilience in response to patient deaths
Level 4 *Independently develops a plan to optimize personal and professional well-being*	● Independently develops a personal practice to sustain resilience in response to patient deaths
Level 5 *Role models the continual ability to monitor and address personal and professional well-being* *Advocates for institutional changes to support well-being*	● Assists in organizational efforts to address clinician wellness after patient death ● Collaborates with other fellows to create a committee on well-being
Assessment Models or Tools	● Direct observation ● Group interview or discussions for team activities ● Individual interview ● Participation in institutional well-being programs ● Self-assessment
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 Program, Chief Fellow(s). Wellness Counselor(s), Faculty Mentor, etc. ● ACGME. "Well-Being Tools and Resources." https://dl.acgme.org/pages/well-being-tools-resources. Accessed 2019. ● Stanford Medicine. WELLMD. https://wellmd.stanford.edu/. Accessed 2019. ● American Academy of Pediatrics. Resilience Curriculum: Resilience in the face of grief and loss. https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/hospice-palliative-care/Pages/Resilience-Curriculum.aspx. Accessed 2019.

	● Currow DC, Fallon M, Cherny NI, Portenoy RK, Kaasa S, eds. 2015. Chapter 4.16. Burnout, compassion fatigue, and moral distress in palliative care. *Oxford Textbook of Palliative* Medicine. 5th ed. Oxford, United Kingdom: Oxford University Press; 2015.

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication **Overall Intent:** To use listening, language, behaviors, and self-awareness to form a therapeutic relationship with a patient and his/her family while identifying and minimizing potential barrier to communication	
Milestones	**Examples**
Level 1 *Identifies common barriers to effective communication* *Recognizes the need to adjust communication strategies based on context*	● Recognizes that prognostic disclosure to terminal patients may affect the physician-patient relationship ● Identifies the need for an interpreter for a patient/caregiver who is non-English speaking ● Adjusts communication strategies based on assessment of patient/family expectations and understanding of their health status and treatment options
Level 2 *Identifies complex barriers to effective communication* *Verifies patient/family understanding of the clinical situation to optimize effective communication*	● Identifies the challenge of ensuring patient understanding and consent when they defer decision making to their caregiver ● Uses teach back when discussing prognosis with a patient and their family
Level 3 *Reflects on biases while attempting to minimize communication barriers* *With guidance, uses shared decision making to align patient/family values, goals, and preferences with treatment options to make a personalized care plan*	● With assistance, identifies and reflects on bias towards patient autonomy over preferences in decision making ● With assistance, develops an effective management plan that complies with patient preference to defer decision making to the family
Level 4 *Proactively improves communication by addressing barriers including patient and biases* *Independently, uses shared decision making to make a personalized care plan*	● Researches cultural differences and communication skills and applies new knowledge to improve care of patients ● Independently develops an effective management plan that complies with patient preference to defer decision making to the family
Level 5 *Role models communication that addresses barriers* *Role models shared decision making in patient/family communication, including those with a high degree of uncertainty/conflict*	● Coaches a trainee to acknowledge bias and successfully manage communication with a patient who defers decision making to their caregiver ● Coaches others to communicate with a patient and family to mediate their conflicting ideas of whether disease directed treatment should be continued
Assessment Models or Tools	● Direct observation

	● Multisource feedback ● Objective structured clinical examination ● Self-assessment ● Standardized patients
Curriculum Mapping	●
Notes or Resources	● Back A, Arnold R, Tulsky J. *Mastering Communication with Seriously Ill Patients*. Cambridge: Cambridge University Press; 2009. ● Makoul G. The SEGUE Framework for teaching and assessing communication skills. *Patient Education and Counseling*. 2001;45(1):23-34. doi:10.1016/S0738-3991(01)00136-7. ● O'Sullivan P, Chao S, Russell M, Levine S, Fabiny A. Development and implementation of an objective structured clinical examination to provide formative feedback on communication and interpersonal skills in geriatric training. *Journal of the American Geriatrics Society.* 2008;56(9):1730-1735. doi:10.1111/j.1532-5415.2008.01860.x. ● Vital Talk. www.vitaltalk.org. Accessed 2019. ● Back AL, Arnold RM, Baile WF, Tulskey JA, Fryer-Edwards K. Approaching difficult communication tasks in oncology. *CA Cancer J Clin*. 2005;55(3):164-177. doi:10.3322/canjclin.55.3.164. ● Wright AA, Zhang B, Ray A, et al. Associations between end-of-life discussions, patient mental health, medical care near death, and caregiver bereavement adjustment. *JAMA*. 2008;300(14):1665-1673. doi:10.1001/jama.300.14.1665. ● Symons AB, Swanson A, McGuigan D, Orrange S, Akl EA. A tool for self-assessment of communication skills and professionalism in fellows. *BMC Med Educ*. 2009;9:1. doi:10.1186/1472-6920-9-1. ● American Academy of Hospice and Palliative Medicine. Hospice and Palliative Medicine Competencies Project. http://aahpm.org/fellowships/competencies#competencies-toolkit. Accessed 2019. ● Lane JL, Gottlieb RP. Structured clinical observations: a method to teach clinical skills with limited time and financial resources. *Pediatrics*. 2000;105(4):973-977. https://pediatrics.aappublications.org/content/pediatrics/105/Supplement_3/973.full.pdf. Accessed 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 2: Interprofessional and Team Communication **Overall Intent:** To effectively communicate with the interdisciplinary team and other health care providers in straightforward and complex situations	
Milestones	**Examples**
Level 1 *Uses respectful communication (verbal, non-verbal) with all members of the health care team* *Demonstrates openness to feedback*	● Receives inpatient consult request and asks clarifying questions politely and with mutual respect ● Does not get defensive when approached with feedback
Level 2 *Communicates effectively within and across all health care teams* *Responsive to feedback*	● Communicates concisely, clearly, and in an organized and timely manner how to proceed with the consult work-up ● Clearly modifies behavior in response to feedback
Level 3 *Adapts communication style within and across all health care teams to ensure mutual understanding* *Seeks and provides performance feedback*	● Speaks directly to the consulting team to verify understanding of the work-up of the consult and discusses next steps in management ● Seeks feedback from charge nurse in the infusion center ● Provides constructive feedback to other team members about observed clinical skills
Level 4 *Coordinates recommendations from different members of the health care team to optimize patient care* *Uses feedback to improve own performance and provides actionable feedback to team members*	● Coordinates recommendations from the interdisciplinary team for a patient with multiple complex comorbidities and socioeconomic challenges into a cohesive management plan ● Recognizes a conflict in the infusion center and with the charge nurse, identifies areas for fellows and nursing team improvement
Level 5 *Role models flexible communication strategies that solicits and values input from all health care team members, resolving conflict when needed* *Role models giving and receiving of feedback*	● Consistently leads communication at meetings with terminal patients and their families when the work-up for a patient with a serious illness would not improve quality of life or improve outcome ● Develops role play modules for resolving conflicts between team members
Assessment Models or Tools	● Direct observation ● Multisource feedback ● Standardized patient encounters ● Role play
Curriculum Mapping	●

Notes or Resources	● François, J. Tool to assess the quality of consultation and referral request letters in family medicine. *Can Fam Physician*. 2011;57(5):574–575. ● Consultant Evaluation of Faculty form in Dehon E, Simpson K, Fowler D, Jones A. Development of the faculty 360. MedEdPORTAL Publications. 2015;11:10174. http://doi.org/10.15766/mep_2374-8265.10174. ● Youngwerth J, Twaddle M. Cultures of interdisciplinary teams: how to foster good dynamics. *J Palliat Med*. 2011;14(5):650-654. ● Moore AR, Bastian RG, Apenteng BA. Communication within hospice interdisciplinary teams: a narrative review. *Am J Hosp Palliat Care*. 2016;33(10):996-1012. ● Jain AK, Fennell ML, Chagpar AB, Connolly HK, Nembhard IM. Moving toward improved teamwork in cancer care: the role of psychological safety in team communication. *J Oncol Pract.* 2016 Nov;12(11):1000-1011. Epub 2016 Oct 24.

Interpersonal and Communication Skills 3: Communication within Health Care Systems **Overall Intent:** To effectively communicate in the medical record	
Milestones	**Examples**
Level 1 *Accurately records information in the patient record* *Safeguards patient personal health information in communications*	● Includes the patient's diagnoses in documents, but the notes are unwieldy, long, and use copy-forward without reviewing ● Logs off computer when leaving clinical workstation
Level 2 *Demonstrates organized diagnostic and medical reasoning through notes in the patient record* *Appropriately selects forms of communication based on context*	● Concisely documents recommendations for a patient but does not include patient preferences or co-morbidities ● E-mails about patient care using systems that protect personal health information
Level 3 *Documentation reflects level of complexity and severity of disease* *Communication includes key stakeholders*	● Concisely integrates comorbidities and disease severity into medical decision making ● Ensures documentation is done in a place to which all key members of the team will have access
Level 4 *Documentation reflects medical reasoning, patient preferences, and management recommendations and plans* *Achieves written or verbal communication that is exemplary*	● Consistently includes rationale for diagnostic and treatment recommendations and patient preferences in documentation ● Provides focused clinical recommendations and notes that support appropriate billing and coding
Level 5 *Role models optimal documentation* *Guides departmental or institutional communication policies*	● Creates a template for the management of specialty diseases and disseminates to colleagues ● Serves as house staff representative on the electronic medical record committee
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback
Curriculum Mapping	●

Notes or Resources	● Weis JM, Levy PC. Copy, paste, and cloned notes in electronic health records: prevalence, benefits, risks, and best practice recommendations. *Chest* 2014 Mar;145(3):632-638. https://www.ncbi.nlm.nih.gov/pubmed/24590024 ● Nelson, DD. Copying and pasting patient treatment notes. *Virtual Mentor.* 2011;13(3):144-147. doi: 10.1001/virtualmentor.2011.13.3.ccas1-1103. https://journalofethics.ama-assn.org/article/copying-and-pasting-patient-treatment-notes/2011-06 ● Mathioudakis A, Rousalova I, Gagnat AA, Saad N, Hardavella G. How to keep good clinical records. *Breathe (Sheff)*. 2016;12(4):369–373. doi:10.1183/20734735.018016 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5297955/ ● Kuhn T, Basch P, Barr M, Yackel T, for the Medical Informatics Committee of the American College of Physicians. Clinical Documentation in the 21st Century: executive summary of a policy position paper from the American College of Physicians. *Ann Intern Med*. 2015;162:301–303. doi: 10.7326/M14-2128 https://annals.org/aim/fullarticle/2089368/clinical-documentation-21st-century-executive-summary-policy-position-paper-from ● Thornton JD, Schold JD, Venkateshaiah L, Lander B. Prevalence of copied information by attendings and residents in critical care progress notes. *Crit Care Med*. 41(2013):382-8 https://www.ncbi.nlm.nih.gov/pubmed/23263617

A delayed start date for the Hematology, Medical Oncology, and Hematology-Medical Oncology Milestones 2.0 to July 1, 2021 had an unintentional negative impact on some programs that had already begun working on changes to their assessment tools and the systems used for tracking. To avoid having to redo the work, a “map” between 1.0 and 2.0 has been created to use for the 2020-2021 academic year. For programs choosing to use the new Milestones, this “map” will assist in translating the scores from 2.0 back to the 1.0 version, which can then be entered into the Accreditation Data System (ADS). This is not an exact fit, but will provide enough information for completing the tasks.

The example below demonstrates one subcompetency from the Hematology Milestones that is a straightforward match and one in which several of the 2.0 Milestones map to the 1.0 version. Each program can decide if and how to use this map. If using Milestones 2.0, the conversion to 1.0 can happen during or after the Clinical Competency Committee meeting. For those who have not yet begun to work on converting to Milestones 2.0, this map can aid in the change.

Milestones 1.0	Milestones 2.0
Patient Care 2: Develops and achieves comprehensive management plan for each patient	Patient Care 3: Formulates the Management Plan
Medical Knowledge 1: Possesses Clinical knowledge	Medical Knowledge1: Non-Malignant Hematology Medical Knowledge 2: Malignant Hematology

As a reminder, the ACGME Review Committee does not have access to programs’ Milestone data (other than submission confirmation). More importantly, the Milestones are intended to be a formative assessment of a program’s fellows. The ACGME understands that the 2020-2021 academic year will have many challenges and appreciates the work programs are undertaking to prepare their fellows to provide excellent patient care.

Milestones 1.0	Milestones 2.0
PC1: Gathers and synthesizes essential and accurate information to define each patient's clinical problem(s)	PC1: Accesses Data Sources to Synthesize Patient and Disease Specific Information Necessary for Clinical Assessment Level PC2: Diagnoses and Assigns Stage and Severity of Hematology and Oncology Disorders PBL1: Evidence-Based and Informed Practice
PC2: Develops and achieves comprehensive management plan for each patient	PC3: Formulates the Management Plan
PC3: Manages patients with progressive responsibility and independence	PC4: Adjusts Management Plans for Acute and Chronic Issues
PC4a: Demonstrates skill in performing and interpreting invasive procedures	PC5: Competence in Procedures
PC4b: Demonstrates skill in performing and interpreting non-invasive procedures and/or testing	PC2: Diagnoses and Assigns Stage and Severity of Hematology and Oncology Disorders
PC5: Requests and provides consultative care	PROF2: Accountability/Conscientiousness ICS2: Interprofessional and Team Communication ICS3: Communication within Health Care Systems
MK1: Possesses Clinical knowledge	MK1: Non-Malignant Hematology MK2: Malignant Hematology
MK2: Knowledge of diagnostic testing and procedures.	PC2: Diagnoses and Assigns Stage and Severity of Hematology and Oncology Disorders
MK3: Scholarship	MK3: Scholarly Activity
SBP1: Works effectively within an interprofessional team	ICS2: Interprofessional and Team Communication
SBP2: Recognizes system error and advocates for system improvement	SBP1: Patient Safety SBP2: Quality Improvement
SBP3: Identifies forces that impact the cost of health care, and advocates for and practices cost-effective care	SBP4: System Navigation for Patient-Centered Care: Population Health SBP5: Physician Role in Health Care Systems
SBP4: Transitions patients effectively within and across health delivery systems	SBP3: System Navigation for Patient-Centered Care: Coordination and Transitions of Care SBP4: System Navigation for Patient-Centered Care: Population Health
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: Fellow Well-Being 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/