Supplemental Guide:
Pediatric Critical Care

ACGME

April 2023

TABLE OF CONTENTS

Milestones Supplemental Guide

This document provides additional guidance and examples for the Pediatric Critical Care 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 at the end of this document as well as on the Resources page of the Milestones section of the ACGME website.

Patient Care 1: History and Physical Exam **Overall Intent:** To gather patient history with the level of detail and focus required for the individual patient; to gather objective information while considering information gleaned from patient history and overall clinical context (including patient acuity, developmental stage, etc.); to recognize normal and abnormal physical findings	
Milestones	**Examples**
Level 1 *Gathers a focused, critical care history, with guidance* *Performs a focused, critical care physical examination, with guidance*	● For a seven-month-old with respiratory distress being admitted to critical care unit on high-flow nasal cannula, gathers information pertaining to duration of illness, sick contacts, and reviews emergency department course, but needs assistance ● Observes respiratory mechanics and auscultates lungs in systematic fashion and identifies abnormal findings, but needs assistance
Level 2 *Filters and prioritizes pertinent positives and negatives based on possible critical care diagnoses* *Identifies variants and abnormal findings based on focused critical care physical exam*	● Identifies lack of infectious symptoms (e.g., no secretions, fever) and common risk factors (e.g., no sick contacts) and elicits history of sweating with feeds as pertinent information to broaden differential diagnosis ● Palpates hepatic edge 3 cm below the costal margin
Level 3 *Synthesizes the history to develop a differential diagnosis for simple presentations* *Interprets variants and abnormal findings based on focused critical care physical exam*	● Utilizes data above to guide further inquiry about family history of sudden death and cardiac conditions ● Identifies gallop on cardiac auscultation
Level 4 *Synthesizes the history to develop a differential diagnosis for complex presentations* *Adapts critical care examination based on findings to distinguish between diagnoses*	● Identifies cultural factors resulting in limited primary care utilization and identification of early onset of subtle symptoms such as faltering growth and missed developmental milestones ● Recognizes distinctive facies and low-set ears
Level 5 *Independently distinguishes patient-specific nuances to efficiently drive further information gathering* *Coaches team members to integrate key critical care examination findings and identify nuances between diagnoses*	● Delves into electronic health record (EHR) for birth history to elicit any concerning prenatal history (e.g., intrauterine growth restriction (IUGR), abnormal anatomy scan) to guide additional history gathering from family ● Utilizes cultural resources to augment additional history taking ● Brings interdisciplinary team to patient bedside and demonstrates assessment of cardiac output and volume status, allowing team members to monitor for changes in response to therapy
Assessment Models or Tools	● Direct observation

	● Medical record (chart) review ● Multisource feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● American Board of Internal Medicine. “Mini-CEX.” https://www.abim.org/~/media/ABIM%20Public/Files/pdf/paper-tools/mini-cex.pdf. Accessed 2020. ● The American Board of Pediatrics (ABP). “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Donato, Anthony A., Yoon Soo Park, David L. George, Alan Schwartz, and Rachel Yudkowsky. 2015. “Validity and Feasibility of the Minicard Direct Observation Tool in 1 Training Program. *Journal of Graduate Medical Education* 7(2): 225-229. https://pubmed.ncbi.nlm.nih.gov/26221439/. ● Peterson, M.C., J.H. Holbrook, D. Von Hales, N.L. Smith, and L.V. Staker. 1992. “Contributions of the History, Physical Examination, and Laboratory Investigation in Making Medical Diagnoses.” *Western Journal of Medicine* 156: 163-165. https://pubmed.ncbi.nlm.nih.gov/1536065/. ● Schumacher, Daniel J., Robert Englander, Patricia J. Hicks, Carol Carraccio, and Susan Guralnick. 2014. “Domain of Competence: Patient Care.” *Academic Pediatrics* 14(2) Supp: S13-S35. https://pubmed.ncbi.nlm.nih.gov/24602619/.

Patient Care 2: Organization and Prioritization of Patient Care **Overall Intent:** To organize and appropriately prioritize patient needs to optimize patient outcomes	
Milestones	**Examples**
Level 1 *Organizes patient care responsibilities by focusing on individual (rather than multiple) patients*	• Only manages one patient at a time • Assesses a stable five-year-old patient with status asthmaticus, while not prioritizing a newly admitted hypotensive seven-year-old patient with febrile neutropenia
Level 2 *Organizes and prioritizes the simultaneous care of multiple patients, with guidance*	● Manages multiple patients but cannot triage effectively ● Evaluates and manages the hypotensive patient effectively, but requires prompting by the attending to leave the bedside of the stable patient
Level 3 *Independently and efficiently prioritizes patient care based on level of acuity and available resources*	● Excuses self from the stable patient with status asthmaticus to rapidly evaluate and manage the patient with hypotension
Level 4 *Organizes available resources to optimize patient care, including when volume and acuity approach the capacity of the health care team*	● When caring for multiple patients in the critical care unit, delegates the care of the stable patient while evaluating and managing the unstable hypotensive patient ● Identifies need for nursing or other staff to prioritize care within the unit ● Identifies stable patients for transfer out of critical care unit to accommodate unstable new admission when unit is full
Level 5 *Coaches to improve team performance in the prioritization of patient care and resources*	● After initial stabilization of multiple patients, reviews care as well as teaching points with the resident, and checks in with the nurse and patients' family members for further questions ● Educates team members about how to triage resources during times of high acuity and volume
Assessment Models or Tools	● Direct observation ● Multisource feedback ● Self-assessment ● Simulation
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. "Entrustable Professional Activities for Subspecialties: Critical Care Medicine." https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2021. ● Covey, Stephen. 1989. *The Seven Habits of Highly Effective People*. New York, NY: Simon & Schuster. ● Frankel, Lorry R., Benson S. Hsu, Timothy S. Yeh, Shari Simone, Michael S. D. Agus, Marjorie J. Arca, Jorge A. Coss-Bu, et al. 2019. "Criteria for Critical Care Infants and Children: PICU Admission, Discharge, and Triage Practice Statement and Levels of

	Care Guidance." *Pediatric Critical Care Medicine* 20(9): 847-887. doi: 10.1097/PCC.0000000000001963. https://pubmed.ncbi.nlm.nih.gov/31483379/.

Patient Care 3: Patient Management **Overall Intent:** To lead the health care team in the creation of a comprehensive, patient-centered management plan based on multiple patient factors, including social factors and varied patient backgrounds, regardless of complexity	
Milestones	**Examples**
Level 1 *Implements management plans developed by the team*	● Orders antibiotics and chest x-ray based on sign-out from senior fellow ● Orders consultant's written recommendations without consideration of impact on other management plans in a patient with multi-organ disease process
Level 2 *Develops and implements a comprehensive management plan for simple diagnoses*	● Orders continuously inhaled albuterol and steroids for a patient admitted with status asthmaticus who does not require intubation, considering patient's prior history of critical care unit admissions ● Orders insulin and intravenous fluids (IVF) for an alert patient with diabetes ketoacidosis ● Develops and initiates management plan for seizure control in a patient with status epilepticus who requires noninvasive respiratory support
Level 3 *Develops and implements a comprehensive management plan for complex diagnoses*	● Adjusts ventilator settings to align with lung-protective strategy for a patient requiring invasive mechanical ventilation for severe acute respiratory distress syndrome (ARDS) ● Initiates vasoactive support and antimicrobial therapeutics in a patient with sepsis who underwent bone marrow transplant and is admitted to the critical care unit ● Develops and initiates a post-operative plan for a patient who underwent tetralogy of Fallot repair with acute kidney injury, incorporating recommendations from the cardiology and cardiac surgery teams
Level 4 *Adapts comprehensive management plans for complex diagnoses as patient conditions evolve*	● Recognizes progressive hypoxemia in a patient with ARDS and modifies management plans previously developed on rounds ● Anticipates extubation trial for a patient with acute respiratory failure in two to three days and adjusts current management plan with respect to ventilator changes, sedation, and fluid management ● In a patient who develops septic shock after liver transplant, develops a unified plan for the patient's management engaging all stakeholders ● Consults multidisciplinary services during the prolonged hospital stay (including rehabilitation, case management, social work, and otolaryngology) of a patient with severe traumatic brain injury who is likely to need home ventilation and long-term rehabilitation
Level 5 *Leads multidisciplinary team to optimize patient/family outcomes*	● Leads the team in discussing a management plan by considering the major therapeutic interventions and the evidence for and against each modality ● Recognizing a patient's family's discordant goals of care, leads a multidisciplinary team and family meeting to develop a unified management plan
Assessment Models or Tools	● Case-based discussion ● Direct observation ● Multisource feedback

Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Cook, David A., Steven J. Durning, Jonathan Sherbino, and Larry D. Gruppen. 2019. “Management Reasoning: Implications for Health Professions Educators and a Research Agenda.” *Academic Medicine* 94(9): 1310–1316. https://journals.lww.com/academicmedicine/Fulltext/2019/09000/Management_Reasoning__Implications_for_Health.19.aspx?casa_token=CrKAiT6kwcYAAAAA:RfZyQrmTw4eWBSRQIwC2kpX_ajz_X4rs_ssjLi_btaqHCwzNCrr6eT1rDSLiWQGmKSQiVW2ZqLbRtj8ozw. ● Shaffner DH, Nichols DG. (2021). *Textbook of Pediatric Intensive Care.* 5th ed. Baltimore, Md.: Williams & Wilkins.

Patient Care 4: Pre-Procedure Assessment **Overall Intent:** To counsel patients regarding indications, risks, benefits, and alternatives of common procedures	
Milestones	**Examples**
Level 1 *Identifies indications for procedures and the risks, benefits, and alternatives*	● Identifies that a patient who has a new pleural effusion may benefit from thoracentesis
Level 2 *Assesses indications, risks, benefits, and weighs alternatives in low- to moderate-risk situations*	● Weighs the risks and benefits of a thoracentesis for a new pleural effusion in a patient without comorbidities ● Considers noninterventional options to achieve the same therapeutic result, such as diuretics for pleural effusion
Level 3 *Assesses indications, risks, benefits, and weighs alternatives in high-risk situations*	● Weighs the risks and benefits of a thoracentesis for a new left-sided pleural effusion in a patient with severe cardiomegaly and hypoxia, and consults with interventional radiology
Level 4 *Leads multispecialty discussion on pre-procedural assessment and planning*	● Leads multidisciplinary team discussion for a patient with pleural effusions and large mediastinal mass who may need a thoracentesis
Level 5 *Serves as a peer expert in pre-procedural assessment and planning*	● Is sought out by peers for assistance while planning high-risk procedures
Assessment Models or Tools	● Direct observation ● Chart review ● Case-based presentations/vignettes ● Simulation
Curriculum Mapping	●
Notes or Resources	● American Society of Anesthesiologists Task Force on Central Venous Access. 2012. "Practice Guidelines for Central Venous Access: A Report by the American Society of Anesthesiologists Task Force on Central Venous Access. *Anesthesiology*. 2012;116(3):539-573. https://anesthesiology.pubs.asahq.org/article.aspx?articleid=2443415&_ga=2.100960201.918126446.1568824887-761947262.1568824887. Accessed 2020. ● British Thoracic Society (BTS). "National Safety Standards for Invasive Procedures - Bronchoscopy and Pleural Procedures." https://www.brit-thoracic.org.uk/quality-improvement/clinical-resources/interventional-procedures/national-safety-standards-for-invasive-procedures-bronchoscopy-and-pleural-procedures/. Accessed 2020. ● Doyle, Daniel John, Joseph Maxwell Hendrix, and Emily H. Garmon. 2019. *American Society of Anesthesiologists Classification (ASA Class)*. Treasure Island, FL: StatPearls. https://www.ncbi.nlm.nih.gov/books/NBK441940/. Accessed 2020. ● Playfor, Stephen D., and Katherine Kirkpatrick. 2014. "Procedural Sedation and Anesthesia in the PICU." In *Pediatric Critical Care Medicine*, edited by Derek Wheeler,

	Hector Wong, and Thomas P. Shanley, 91-101. London: Springer. https://doi.org/10.1007/978-1-4471-6359-6_6.

Patient Care 5: Procedures **Overall Intent:** To safely and competently perform procedures commonly performed in the critical care unit, and to anticipate and manage complications	
Milestones	**Examples**
Level 1 *Performs procedures in low- to moderate-risk situations, with direct supervision*	● Places central venous catheter under direct supervision, with the attending at the bedside ● Places a peripheral arterial line in a stable, mechanically ventilated, sedated patient, with attending at bedside ● Needs additional support to anticipate and manage potential complications
Level 2 *Performs procedures in high-risk situations, with direct supervision*	● Places a thoracostomy tube in a spontaneously breathing patient requiring non-invasive respiratory support, with direct supervision ● Places a central venous line in a patient who is hypotensive with challenging intravenous access, with an attending at the bedside ● Anticipates and manages complications for low-to-moderate risk procedures, but still needs support for complications of high-risk procedural situations
Level 3 *Performs procedures in all risk level situations, with indirect supervision*	● Places a thoracostomy tube in a spontaneously breathing patient requiring non-invasive respiratory support, while the attending is seeing a different patient ● Places a femoral venous line for a patient with coagulopathy, while the attending is not present ● Manages pneumothorax following subclavian central venous catheter placement
Level 4 *Teaches and supervises others in performance of procedures in all risk level situations*	● Teaches and supervises a resident in the placement of a central venous catheter ● Supervises other team members in the management of a pneumothorax following subclavian central venous catheter placement
Level 5 *Serves as a peer expert in performance of procedures*	● Successfully places a central venous catheter after multiple failed attempts by peers ● Provides feedback to other fellows to improve performance in placing central venous catheters
Assessment Models or Tools	● Case-based discussion ● Direct observation ● Simulation
Curriculum Mapping	●
Notes or Resources	● Individuals may achieve competence in different procedures at different rates, and this milestone is intended to capture the overall skills ● British Thoracic Society (BTS). “National Safety Standards for Invasive Procedures - Bronchoscopy and Pleural Procedures.” https://www.brit-thoracic.org.uk/quality-improvement/clinical-resources/interventional-procedures/national-safety-standards-for-invasive-procedures-bronchoscopy-and-pleural-procedures/. Accessed 2020. ● Ishizuka, Maki, Vijayeta Rangarajan, Taylor L. Sawyer, Natalie Napolitano, Donald L. Boyer, Wynne E. Morrison, Justin L. Lockman, et al. 2016. “The Development of Tracheal

	Intubation Proficiency Outside the Operating Suite During Pediatric Critical Care Medicine Fellowship Training: A Retrospective Cohort Study Using Cumulative Sum Analysis." *Pediatric Critical Care Medicine*. 17(7): e309-e316. doi:10.1097/PCC.0000000000000774. ● Shaffner DH, Nichols DG. (2021). *Textbook of Pediatric Intensive Care.* 5th ed. Baltimore, Md.: Williams & Wilkins.

Medical Knowledge 1: Foundational Knowledge **Overall Intent:** To demonstrate medical and scientific knowledge and apply it to the care of pediatric patients with critical illness	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of key basic science concepts (e.g., anatomy, pharmacology)*	• Recites equation for cardiac output • Explains the basic anatomy of a pediatric airway
Level 2 *Demonstrates basic knowledge of critical care physiology and pathophysiology*	● Describes how positive pressure ventilation impacts cardiac output ● Explains the five etiologies of hypoxemia
Level 3 *Demonstrates comprehensive/advanced knowledge of critical care physiology and pathophysiology*	● Describes how pulmonary hypertension impacts ventricular interdependence and alters cardiac output ● Identifies appropriate vasoactive medication selection based upon mechanism of action within specific clinical context
Level 4 *Integrates critical care knowledge of patients with multiple interacting disease states and therapies*	● Describes ventilator management strategy in a patient with ARDS and increased intracranial pressure ● Describes fluid management for a patient with sepsis and chronic renal failure
Level 5 *Serves as peer expert for critical care knowledge*	● Utilizes questions on rounds to assist in determining team member level of understanding and tailors educational content accordingly ● Is consulted by peers for interpretation of laboratory data such as thromboelastogram and pulmonary function tests
Assessment Models or Tools	● Direct observation ● In-training examination ● Simulation ● Case-based discussion ● Medical record (chart) audit
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Englander, Robert, and Carol Carraccio. 2014. “Domain of Competence: Medical Knowledge.” *Academic Pediatrics* 14(2)Supp: S36-S37. https://www.sciencedirect.com/science/article/abs/pii/S1876285913003240.

Medical Knowledge 2: Clinical Reasoning **Overall Intent:** To generate a focused and prioritized differential diagnosis while consciously avoiding errors caused by cognitive bias	
Milestones	**Examples**
Level 1 *Synthesizes a specialty-specific, analytic, and prioritized differential diagnosis for simple presentations, with substantial guidance*	● Needs prompting to develop a complete differential diagnosis of wheezing
Identifies instances of clinical reasoning errors within patient care, with substantial guidance	● When pointed out by an attending, recognizes that a diagnosis was accepted without reviewing the history, physical exam, and other data
Level 2 *Synthesizes a specialty-specific, analytic, and prioritized differential diagnosis for simple presentations*	● Develops a complete differential diagnosis of wheezing
Identifies instances of clinical reasoning errors within patient care	● Independently recognizes that a diagnosis was accepted without reviewing the history, physical exam, and other data
Level 3 *Synthesizes a specialty-specific, analytic, and prioritized differential diagnosis for complex presentations*	● Develops a comprehensive differential diagnosis for a patient with rapidly developing altered mental status
Applies clinical reasoning principles to retrospectively identify cognitive errors	● Recognizes a misdiagnosis of asthma in a patient who actually has heart failure
Level 4 *Synthesizes information to reach high-probability and/or high-risk diagnoses and anticipates potential complications in patient care*	● Gathers and evaluates all data and applies clinical practice guidelines to determine course of action for a patient undergoing anti-coagulation therapy who presents with a stroke
Continually re-appraises own clinical reasoning to prospectively minimize cognitive errors and manage uncertainty	● Adjusts original differential diagnosis for refractory status epilepticus based on new information that includes clinical changes, electroencephalogram (EEG) findings, lumbar puncture results, and magnetic resonance imaging (MRI) results
Level 5 *Serves as a peer expert for differential diagnosis*	● Is recognized as an expert and is regularly sought out by peers for complex cases with diagnostic uncertainty
Coaches others to recognize and avoid cognitive errors	● Tactfully redirects a resident who is confident in diagnosis of upper airway edema in a patient who actually has a paralyzed vocal cord
Assessment Models or Tools	● Direct observation

	● Medical record (chart) review ● Multisource feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● Bowen, Judith L. 2006. “Educational Strategies to Promote Clinical Diagnostic Reasoning.” *New England Journal of Medicine*. 355: 2217-2225. https://www.nejm.org/doi/full/10.1056/NEJMra054782. ● Croskerry, Pat. 2008. “Achieving Quality in Clinical Decision Making: Cognitive Strategies and Detection of Bias.” *Academic Emergency Medicine*. 2002;9(11): 1184-1204. https://onlinelibrary.wiley.com/doi/abs/10.1197/aemj.9.11.1184?sid=nlm%3Apubmed. ● Humbert, Aloysius J., Bart Besinger, Edward J. Miech. 2011. “Assessing Clinical Reasoning Skills in Scenarios of Uncertainty: Convergent Validity for a Script Concordance Test in an Emergency Medicine Clerkship and Residency.” *Academic Emergency Medicine* 18(6): 627-634. https://doi.org/10.1111/j.1553-2712.2011.01084.x. ● Journal of General Internal Medicine. “Clinical Reasoning Exercises.” https://www.sgim.org/web-only/clinical-reasoning-exercises/problem-representation-overview#. Accessed 2020. ● Society to Improve Diagnosis in Medicine (SIDM). “Tools & Toolkit.” https://www.improvediagnosis.org/toolkits/. Accessed 2020. ● SIDM. “Assessment of Reasoning Tool.” https://www.improvediagnosis.org/art/. Accessed 2020. ● SIDM. “Consensus Curriculum on Diagnosis.” https://www.improvediagnosis.org/consensuscurriculum/. Accessed 2020. ● SIDM. “Driver Diagram.” https://www.improvediagnosis.org/wp-content/uploads/2018/10/Driver_Diagram_-_July_31_-_M.pdf. Accessed 2020.

Systems-Based Practice 1: Patient Safety **Overall Intent:** To engage in the analysis and management of patient safety events, including relevant communication with patients, their families, and health care professionals	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of common patient safety events* *Demonstrates knowledge of how to report patient safety events*	● Lists common patient safety events such as patient misidentification or medication errors ● Lists "patient safety reporting system" or "patient safety hotline" as ways to report safety events
Level 2 *Identifies system factors that lead to patient safety events* *Reports patient safety events through institutional reporting systems (simulated or actual)*	● Identifies that EHR default timing of orders as "routine" (without changing to "stat") may lead to delays in antibiotic administration time for sepsis ● Reports delayed antibiotic administration time using the appropriate reporting mechanism
Level 3 *Participates in analysis of patient safety events (simulated or actual)* *Participates in disclosure of patient safety events to patients and families (simulated or actual)*	● Participates in department morbidity and mortality presentations with significant attending oversite ● With the support of an attending or risk management team member, participates in the disclosure of a medication order error to a patient's family
Level 4 *Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)* *Discloses patient safety events to patients and families (simulated or actual)*	● Prepares and leads a department morbidity and mortality presentations with minimal assistance from attending ● Leads a quality improvement project aimed at reducing racial disparities ● Leads multispecialty clinical conference case review ● Following consultation with risk management and other team members, independently discloses a medication error to a patient's 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 root cause analysis (mock or actual) ● Conducts a simulation demonstrating techniques and approaches for disclosing patient safety events
Assessment Models or Tools	● Case-based discussion

	● Direct observation ● Electronic learning module ● Guided reflection ● Medical record (chart) audit ● Multisource feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Guralnick, Susan, Stephen Ludwig, and Robert Englander. 2014. “Domain of Competence: Systems-Based Practice.” *Academic Pediatrics*. 14: S70-S79. https://doi.org/10.1016/j.acap.2013.11.015. ● Institute for Healthcare Improvement. http://www.ihi.org/Pages/default.aspx. Accessed 2020. ● Singh, Ranjit, Bruce Naughton, John S. Taylor, Marlon R. Koenigsberg, Diana R. Anderson, Linda L. McCausland, Robert G. Wahler, Amanda Robinson, and Gurdev Singh. 2005. “A Comprehensive Collaborative Patient Safety Residency Curriculum to Address the ACGME Core Competencies.” *Medical Education*. 39(12): 1195-204. DOI: 10.1111/j.1365-2929.2005.02333.x.

Systems-Based Practice 2: Quality Improvement **Overall Intent:** To understand and implement quality improvement methodologies to improve patient care	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of basic quality improvement methodologies and metrics*	● Describes fishbone diagram ● Describes components of a "Plan-Do-Study-Act" cycle
Level 2 *Describes local quality improvement initiatives (e.g., community vaccination rate, infection rate, smoking cessation)*	● Describes an initiative to improve time to antibiotics in sepsis
Level 3 *Participates in local quality improvement initiatives*	● Participates in an ongoing interdisciplinary project to improve time to antibiotics in sepsis
Level 4 *Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project*	● Develops and implements a quality improvement project to improve time to antibiotics in sepsis that includes engaging the unit team, assessing the problem, articulating a broad goal, developing a SMART (Specific, Measurable, Attainable, Realistic, Time-bound) aim, collecting data, analyzing, and monitoring progress and challenges ● In developing a quality improvement project, considers team bias and social determinants of health in patient population
Level 5 *Creates, implements, and assesses quality improvement initiatives at the institutional or community level*	• Initiates and completes a quality improvement project to improve time to antibiotics in sepsis and shares results through a formal presentation to the institutional leaders or at a national meeting
Assessment Models or Tools	● Direct observation ● Poster or abstract presentation ● Multisource feedback ● Committee presentation
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. "Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine." https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Bright Futures. "QI Office System Tools." https://www.aap.org/en/practice-management/bright-futures/bright-futures-quality-improvement/qi-office-system-tools/. Accessed 2022. ● Guralnick, Susan, Stephen Ludwig, and Robert Englander. 2014. "Domain of competence: Systems-Based Practice." *Academic Pediatrics*. 14: S70-S79. https://doi.org/10.1016/j.acap.2013.11.015. ● Institute for Healthcare Improvement. http://www.ihi.org/Pages/default.aspx. Accessed 2020.

	● Murtagh Kurowski, Eileen, Amanda C. Schondelmeyer, Courtney Brown, Christopher E. Dandoy, Samuel J. Hanke, and Heather L. Tubbs Cooley. 2015. “A Practical Guide to Conducting Quality Improvement in the Health Care Setting.” *Current Treatment Options in Pediatrics*. 1:380-392. https://doi.org/10.1007/s40746-015-0027-3.

Systems-Based Practice 3: System Navigation for Patient-Centered Care – Coordination of Care **Overall Intent:** To effectively navigate the health care system, including the interdisciplinary team and other care practitioners; to adapt care to a specific patient population to ensure high-quality patient outcomes	
Milestones	**Examples**
Level 1 *Lists the various interprofessional individuals involved in the patient's care coordination*	● Identifies important members of the medical home team for a technology-dependent patient
Level 2 *Coordinates care of patients in routine clinical situations, incorporating interprofessional teams with consideration of patient and family needs*	● Coordinates home health and develops a feeding regimen with the dietician for a child with a gastrostomy tube
Level 3 *Coordinates care of patients in complex clinical situations, effectively utilizing the roles of interprofessional teams, and incorporating patient and family needs and goals*	● Works to ensure appropriate follow-up for a technology-dependent patient who resides in a rural area with limited family transportation options ● Recognizes that minoritized communities may have additional barriers to access and the need to involve a social worker, case manager, primary care practitioner, and others in finding community resources
Level 4 *Coordinates interprofessional, patient-centered care among different disciplines and specialties, actively assisting families in navigating the health-care system*	● Coordinates and directs a multidisciplinary team/family meeting, including appropriate subspecialists and ancillary services, to ensure that the family's needs are met when a patient is being transferred to hospice
Level 5 *Coaches others in interprofessional, patient-centered care coordination*	● Leads an initiative to educate residents about home health services or medical home model for medically complex, technology-dependent children, ensuring inclusion of discussion on health care disparities ● Coaches and mentors colleagues through a multidisciplinary team meeting of a child with complex health care needs
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● American Academy of Pediatrics (AAP). "Care Coordination Resources." https://www.aap.org/en/practice-management/care-delivery-approaches/care-coordination-resources/. Accessed 2022. ● The American Board of Pediatrics. "Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine." https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022.

	● Skochelak, Susan E., Maya M. Hammond, Kimberly D. Lomis, Jeffrey M. Borkan, Jed. D. Gonzalo, Luan E. Lawson, and Stephanie R. Starr. 2020. *AMA Education Consortium: Health Systems Science*, 2nd ed. Elsevier. ● Starr, Stephanie R., Neera Agrwal, Michael J. Bryan, Yuna Buhrman, Jack Gilbert, Jill M. Huber, Andrea N. Leep Hunderfund, et al. 2017. “Science of Health Care Delivery: An Innovation in Undergraduate Medical Education to Meet Society’s Needs.” *Mayo Clinic Proceedings: Innovations, Quality & Outcomes*. 1(2): 117-129. https://www.sciencedirect.com/science/article/pii/S2542454817300395.

Systems-Based Practice 4: System Navigation for Patient-Centered Care – Transitions in Care **Overall Intent:** To effectively navigate the health care delivery system during transitions of care to ensure high-quality patient outcomes	
Milestones	**Examples**
Level 1 *Uses a standard template for transitions of care/hand-offs*	● When handing off to colleagues on a night shift, reads verbatim from a templated hand-off but lacks context, is not appropriately specific in next steps, and does not provide contingency plans
Level 2 *Adapts a standard template, recognizing key elements for safe and effective transitions of care/hand-offs in routine clinical situations*	● Routinely uses a standardized hand-off for a stable patient, verbalizes a basic understanding of active problems, and provides basic contingency plans ● Discusses a transfer of an infant from the pediatric intensive care unit (PICU) with the primary inpatient care team and provides a problem list, clinical course, and action items to be followed as an outpatient
Level 3 *Performs safe and effective transitions of care/hand-offs in complex clinical situations, and ensures closed-loop communication*	● Routinely uses a standardized hand-off when transferring a patient from the intensive care unit, with direct communication of clinical reasoning, problems warranting continued care, and status of completed/planned interventions; solicits read-back and confirms/uses specific resources and timeline for transfer to occur
Level 4 *Performs and advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems, including transitions to adult care*	● Solicits important information and offers guidance to ensure safe transport for a critically ill patient being transferred from a community hospital ● Provides information to the primary care practitioner about patient being discharged from the critical care unit
Level 5 *Coaches others in improving transitions of care within and across health care delivery systems to optimize patient outcomes*	● Designs and implements standardized hand-off workshop exercises for medical students prior to the start of their clinical rotations ● Develops and implements a process to improve the transition from the critical care unit to other specialties
Assessment Models or Tools	● Direct observation ● Standardized assessment checklist ● Multisource feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Got Transition. “Clinician Education and Resources.” https://www.gottransition.org/resources-and-research/clinician-education-resources.cfm. Accessed 2020. ● Matern, Lukas H., Jeanne M. Farnan, Kristen W. Hirsch, Melissa Cappaert, Ellen S. Byrne, and Vineet M. Arora. 2018. “A Standardized Handoff Simulation Promotes

	Recovery from Auditory Distractions in Resident Physicians." *Simulation in Healthcare*. 13(4): 233-238. DOI: 10.1097/SIH.0000000000000322. ● Society for Adolescent Health and Medicine. 2020. "Transition to Adulthood for Youth with Chronic Conditions and Special Health Care Needs." *Journal of Adolescent Health*. 66(5): P631-634. https://www.jahonline.org/article/S1054-139X(20)30075-6/fulltext. ● Starmer, Amy J., Nancy D. Spector, Rajendu Srivastava, Daniel C. West, Glenn Rosenbluth, April D. Allen, Elizabeth L. Noble, et al. "Changes in Medical Errors after Implementation of a Handoff Program." *New England Journal of Medicine*. 371:1803-1812. DOI: 10.1056/NEJMsa1405556. ● Starmer, Amy J., Nancy D. Spector, Rajendu Srivastava, April D. Allen, Christopher P. Landrigan, Theodore C. Sectish, and I-PASS Study Group. 2012. "I-Pass, A Mnemonic to Standardize Verbal Handoffs." *Pediatrics* 129(2), 201–204. https://doi.org/10.1542/peds.2011-2966.

Systems-Based Practice 5: Population and Community Health **Overall Intent:** To promote and improve health across communities and populations through patient care and advocacy, including public education and elimination of structural racism	
Milestones	**Examples**
Level 1 *Demonstrates awareness of population and community health needs and disparities*	● Lists social determinants of health, such as poverty and structural racism ● Lists adverse childhood experiences
Level 2 *Identifies specific population and community health needs and disparities; identifies local resources*	● Screens patients for adverse childhood experiences ● Identifies the impact of structural racism on a patient who is frequently admitted with status asthmaticus
Level 3 *Uses local resources effectively to meet the needs and reduce health disparities of a patient population and community*	● Refers patients to local resources and programs aimed at providing healthy meals and housing ● Refers to local resources that investigate environmental contributors to asthma
Level 4 *Adapts practice to provide for the needs of and reduce health disparities of a specific population*	● Participates in activities aimed to improve health care access and/or decrease practices that support structural racism
Level 5 *Advocates at the local, regional, or national level for populations and communities with health care disparities*	● Partners with a community organization working to increase bicycle helmet use and availability ● Participates in longitudinal discussions with local, state, or national government policy makers to eliminate structural racism and reduce health disparities
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Reflection
Curriculum Mapping	●
Notes or Resources	● AAP. “Advocacy.” https://services.aap.org/en/advocacy/. 2020. ● AAP Bright Futures. “Promoting Lifelong Health for Families and Communities.” https://downloads.aap.org/AAP/PDF/Bright%20Futures/BF4_LifelongHealth.pdf?_ga=2.268230030.1236819861.1654476607-929400881.1619626826&_gac=1.229642574.1651085941.cj0kcqjw06otbhc_arisaau1yovdcxkc8cjmzqntgqmfsj0_flej6v7e95sxi3exmdjyivnt1vv9rxoaamnzealw_wcb. Accessed 2022. ● The American Board of Pediatrics. “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Blankenburg, Rebecca, Patricia Poitevien, Javier Gonzalez del Rey, Megan Aylor, John Frohna, Heather McPhillips, Linda Waggoner-Fountain, and Laura Degnon. 2020.

	"Dismantling Racism: Association of Pediatric Program Directors' Commitment to Action." *Academic Pediatrics.* 20(8): 1051-1053. doi: 10.1016/j.acap.2020.08.017. ● Centers for Disease Control and Prevention. "Fast Facts: Preventing Adverse Childhood Experiences." https://www.cdc.gov/violenceprevention/aces/fastfact.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fviolenceprevention%2Facestudy%2Ffastfact.html. Accessed 2020. ● CommonHealth ACTION. 2016. "Leveraging the Social Determinants to Build a Culture of Health." https://healthequity.globalpolicysolutions.org/wp-content/uploads/2016/12/RWJF_SDOH_Final_Report-002.pdf. Accessed 2020. ● DallaPiazza, Michelle, Mercedes Padilla-Register, Megana Dwarakanath, Elyon Obamedo, James Hill, and Maria L. Soto-Greene. 2018. "Exploring Racism and Health: An Intensive Interactive Session for Medical Students." *MedEdPORTAL*. 14:10783. https://doi.org/10.15766/mep_2374-8265.10783. ● Johnson, Tiffani J. 2020. "Intersection of Bias, Structural Racism, and Social Determinants with Health Care Inequities." *Pediatrics*. 146(2): e2020003657. https://doi.org/10.1542/peds.2020-003657. ● MedEdPORTAL. "Anti-Racism in Medicine Collection." https://www.mededportal.org/anti-racism. Accessed 2020. ● Trent, Maria, Danielle G. Dooley, Jacqueline Dougé, Section on Adolescent Health, Council on Community Pediatrics, Committee on Adolescence, Robert M. Cavanaugh, et al. 2019. "The Impact of Racism on Child and Adolescent Health." Pediatrics. 144(2):e20191765. https://doi.org/10.1542/peds.2019-1765.

Systems-Based Practice 6: Physician Role in Health Care Systems **Overall Intent:** To understand the physician's role in health systems science to optimize patient care delivery, including cost-conscious care	
Milestones	**Examples**
Level 1 *Engages with patients and other providers in discussions about cost-conscious care and key components of the health care delivery system*	● Considers that insurance coverage, or lack of coverage, can affect prescription drug availability/cost for individual patients ● Participates in conversations about antimicrobial drug selection and considers costs
Level 2 *Identifies the relationships between the delivery system and cost-conscious care and the impact on the patient care*	● Considers whether home nursing care would be available and covered by insurance in the decision-making process for a patient with chronic respiratory failure
Level 3 *Discusses the need for changes in clinical approaches based on evidence, outcomes, and cost-effectiveness to improve care for patients and families*	● Accepts an appropriate level of uncertainty by not ordering a respiratory viral panel when it will not change management ● Discusses cost and potential benefits of performing MRI when formulating treatment plan
Level 4 *Advocates for the promotion of safe, quality, and high-value care*	● Works collaboratively to identify additional services for a patient with a recent traumatic brain injury with sequelae and limited resources ● Advocates for widespread usage of asthma action plan upon discharge to minimize hospital readmissions and improve cost effectiveness
Level 5 *Coaches others to promote safe, quality, and high-value care across health care systems*	● Coaches others to implement Choosing Wisely recommendations ● Leads team members in conversations around care gaps for LGBTQIA+ teens and creates team plans to provide comprehensive care in the critical care unit
Assessment Models or Tools	● Direct observation ● Multisource feedback ● Review and guided reflection on costs accrued for individual patients or patient populations with a given diagnosis ● Workshops
Curriculum Mapping	●
Notes and Resources	● Agency for Healthcare Research and Quality (AHRQ). "Measuring the Quality of Physician Care." https://www.ahrq.gov/talkingquality/measures/setting/physician/index.html. Accessed 2022. ● AAP. "Practice Management." https://www.aap.org/en/practice-management/. Accessed 2022. ● American Board of Internal Medicine. "QI/PI Activities." https://www.abim.org/maintenance-of-certification/earning-points/qi-pi-activities.aspx. Accessed 2020.

	● The American Board of Pediatrics. “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● American College of Physicians. “Newly Revised: Curriculum for Educators and Residents.” https://www.acponline.org/clinical-information/high-value-care/medical-educators-resources/newly-revised-curriculum-for-educators-and-residents-version-40. Accessed 2020. ● Choosing Wisely. “Society of Critical Care Medicine: Five Things Physicians and Patients Should Question.” https://www.choosingwisely.org/societies/society-of-critical-care-medicine/. Accessed 2022. ● The Commonwealth Fund. “State Health Data Center.” http://datacenter.commonwealthfund.org/?_ga=2.110888517.1505146611.1495417431-1811932185.1495417431#ind=1/sc=1. Accessed 2020. ● Crow, Byron, Sami G. Tahhan, Curtis Lacy, Jule Grzankowski, and Juan N. Lessing. 2020. “Things We Do for No Reason™: Routine Correction of Elevated INR and Thrombocytopenia Prior to Paracentesis in Patients with Cirrhosis.” *Journal of Hospital Medicine*. 16(2): 102-104. https://doi.org/10.12788/jhm.3458. ● Dzau, Victor J., Mark McClellan, Sheila Burke, Molly J. Coye, Thomas A. Daschle, Angela Diaz, William H. Frist, et al. 2017. “Vital Directions for Health and Health Care: Priorities from a National Academy of Medicine Initiative.” *NAM Perspectives*. Discussion Paper, National Academy of Medicine, Washington, DC. https://doi.org/10.31478/201703e. ● Solutions for Patient Safety. “Hospital Resources.” https://www.solutionsforpatientsafety.org/for-hospitals/hospital-resources/. Accessed 2020.

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice **Overall Intent:** To incorporate evidence and apply it to individual patients and patient populations	
Milestones	**Examples**
Level 1 *Develops an answerable clinical question and demonstrates how to access available evidence, with guidance*	● Identifies a question such as, "What is the appropriate treatment for this patient with ARDS?" but needs guidance to focus it into a searchable question ● Uses general medical resources (i.e., background information) such as UpToDate or DynaMed to search for answers ● Accesses available evidence using unfiltered resources, retrieving a broad array of related information
Level 2 *Independently articulates clinical question and accesses available evidence*	● Asks, "In treatment of ARDS, what is the evidence for use of inhaled nitric oxide?" ● Uses PubMed to search for the answer to a general clinical question and appropriately filters results
Level 3 *Locates and applies the evidence, integrated with patient preference, to the care of patients*	● Obtains, appraises, and applies evidence to determine use of inhaled nitric oxide in ARDS ● Finds evidence for alternatives to blood transfusions for patients who are Jehovah's Witness and require surgery
Level 4 *Critically appraises and applies evidence, even in the face of uncertainty and conflicting evidence to guide care tailored to the individual patient*	● Seeks out and applies evidence to optimize primary and secondary outcomes for a patient with stem cell transplant and ARDS in accordance with the goals of care ● Elicits patient's prior experiences with systemic racism in the health care system to start conversations about optimal management
Level 5 *Coaches others to critically appraise and apply evidence for complex patients*	● Provides feedback to other learners on their ability to formulate questions, search for the best available evidence, appraise evidence, and apply that information to the care of patients ● Leads development of clinical guidelines/pathways
Assessment Models or Tools	● Direct observation ● Multisource feedback ● Presentation evaluation
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. "Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine." https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Duke University. "Evidence-Based Practice." https://guides.mclibrary.duke.edu/ebm/home. Accessed 2020. ● Guyatt, Gordon, Drummond Rennie, Maureen O. Meade, and Deborah Cook. 2015. *Users' Guides to the Medical Literature: A Manual for Evidence-Based Clinical Practice*, 3rd ed. USA: McGraw-Hill Education. https://jamaevidence.mhmedical.com/Book.aspx?bookId=847. Accessed 2020.

	● US National Library of Medicine. “PubMed® Online Training.” https://www.nlm.nih.gov/bsd/disted/pubmedtutorial/cover.html. Accessed 2020.

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth **Overall Intent:** To continuously improve patient care based on self-evaluation and lifelong learning	
Milestones	**Examples**
Level 1 *Participates in feedback sessions* *Develops personal and professional goals, with assistance*	● Attends biannual program director feedback sessions ● Acknowledges own implicit/explicit biases
Level 2 *Demonstrates openness to feedback and performance data* *Designs a learning plan based on established goals, feedback, and performance data, with assistance*	● After faculty member provides feedback on knowledge gap related to ventilator management, acknowledges need for improvement ● Devises a plan to explore biases and how they impact care of peer relationships
Level 3 *Seeks and incorporates feedback and performance data episodically* *Designs and implements a learning plan by analyzing and reflecting on the factors which contribute to gap(s) between performance expectations and actual performance*	● Following a difficult case, seeks out faculty member to review ventilator management and makes appropriate changes to improve patient care based on feedback ● Identifies problems performing an intubation and arranges to spend more time in the simulation lab to improve skills ● Recognizes own implicit biases that affect the care of a patient and takes steps to mitigate bias
Level 4 *Seeks and incorporates feedback and performance data consistently* *Adapts a learning plan using long-term professional goals, self-reflection, and performance data to measure its effectiveness*	● Adapts learning plan to improve knowledge of respiratory failure based on personal reflection, feedback, and patient data ● Actively seeks out conferences to learn about anti-racism and bystander culture
Level 5 *Role models and coaches others in seeking and incorporating feedback and performance data* *Demonstrates continuous self-reflection and coaching of others on reflective practice*	● Leads a discussion on opportunities to improve adherence to sterile bundle for central line insertion ● Meets with residents regularly to review practice habits and develop their learning goals
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit

	● Review of learning plan ● Review of evaluations (mentor, advisor)
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Burke, Anne E., Bradley Benson, Robert Englander, Carol Carraccio, and Patricia J. Hicks. 2014. “Domain of Competence: Practice-Based Learning and Improvement.” *Academic Pediatrics* 14(2): S38-S54. DOI: https://doi.org/10.1016/j.acap.2013.11.018. ● Lockspeiser, Tai M., Su-Ting T. Li, Ann E. Burke, Adam A. Rosenberg, Alston E. Dunbar 3rd, Kimberly A. Gifford, Gregory H. Gorman, et al. 2016. “In Pursuit of Meaningful Use of Learning Goals in Residency: A Qualitative Study of Pediatric Residents.” *Academic Medicine* 91(6): 839-846. DOI: 10.1097/ACM.0000000000001015. ● Lockspeiser, Tai M., Patricia A. Schmitter, J. Lindsey Lane, Janice L. Hanson, Adam A. Rosenberg, and Yoon Soo Park. 2013. “Assessing Residents’ Written Learning Goals and Goal Writing Skill: Validity Evidence for the Learning Goal Scoring Rubric.” *Academic Medicine* 88(10): 1558-1563. DOI: 10.1097/ACM.0b013e3182a352e6.

Professionalism 1: Professional Behavior **Overall Intent:** To demonstrate ethical and professional behaviors and promote these behaviors in others and to use appropriate resources to manage professional dilemmas	
Milestones	**Examples**
Level 1 *Identifies expected professional behaviors and potential triggers for lapses* *Identifies the value and role of pediatric critical care as a vocation/career*	● Asks a senior fellow or attending for feedback on post-call interactions with staff and colleagues after realizing own tendency to be curt when tired ● Acknowledges the importance of intensivists in informing the public about childhood safety and preventable diseases
Level 2 *Demonstrates professional behavior with occasional lapses* *Demonstrates accountability for patient care as a pediatric critical care physician, with guidance*	● Is late to morning rounds, identifies this lapse, and does not repeat this behavior ● Forgets to relay a patient's parent's concern to oncoming care team and calls co-fellow to ensure information is relayed after prompting
Level 3 *Maintains professional behavior in increasingly complex or stressful situations* *Fully engages in patient care and holds oneself accountable*	● During a busy night on the unit, demonstrates caring and compassionate behaviors with patients, patients' families, colleagues, and staff members ● Advocates for an individual patient's needs in a humanistic and professional manner regarding goals of care, identifying support networks (e.g., social work, pastoral care), and coordination of care by other subspecialists
Level 4 *Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in self and others* *Exhibits a sense of duty to patient care and professional responsibilities*	● Models respect and compassion for patients and promotes the same from colleagues by actively identifying positive professional behavior ● Without prompting, assists colleagues with patient care responsibilities. ● Prioritizes safe transitions of care, especially during shift changes when the critical care unit is busy with high level of acuity ● Speaks up in the moment when observing racist/sexist behavior within the health care team and uses reporting mechanisms to address it
Level 5 *Models professional behavior and coaches others when their behavior fails to meet professional expectations* *Extends the role of the pediatric critical care physician beyond the care of patients by engaging with the community, specialty, and medical profession as a whole*	● Discusses the need to be on time with a resident or junior fellow who continues to be late, making a plan together to address the underlying issues of why the learner is late ● Advocates for process improvement to help a cohort of patients, takes on larger projects to remedy a system issue that is affecting patients, and sees the opportunity to improve care as a responsibility ● Develops education and/or modules on microaggressions and bias
Assessment Models or Tools	● Direct observation

	● Multisource feedback ● Oral or written self-reflection ● Simulation ● Peer assessments
Curriculum Mapping	●
Notes or Resources	● Below are resources that define professionalism and seek to focus it on what key knowledge, skills, and attitudes are required to ensure public trust and promote integrity within the profession. It is important to note a historical context in which the informal and formal assessment of "professionalism" has extended beyond these ideals to negatively impact the careers of women, LGBTQIA+ people, and underrepresented minorities in medicine. Explicitly, examples of this have included the way in which women, marginalized learners, and LGBTQIA+ learners have been targeted for certain forms of self-expression of racial, ethnic, or gender identity. The assessment of professionalism should seek to be anti-racist and eliminate all forms of bias. ● AbdelHameid, Duaa. 2020. "Professionalism 101 for Black Physicians." *New England Journal of Medicine.* 383(5): e34. doi:10.1056/NEJMpv2022773. ● American Board of Internal Medicine Foundation, ACP-ASIM Foundation, and European Federation of Internal Medicine. 2002. "Medical Professionalism in the New Millennium: A Physician Charter." *Annals of Internal Medicine* 136: 243-246. https://doi.org/10.7326/0003-4819-136-3-200202050-00012. ● The American Board of Pediatrics (ABP). "Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine." https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● ABP. "Medical Professionalism." https://www.abp.org/content/medical-professionalism. Accessed 2020. ● ABP. "Teaching, Promoting, and Assessing Professionalism Across the Continuum: A Medical Educator's Guide." https://www.abp.org/professionalism-guide. Accessed 2020. ● American Medical Association. "Ethics." https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. Accessed 2020. ● Bynny, Richard L., Douglas S. Paauw, Maxine Papadakis, and Sheryl Pfeil. 2017. *Medical Professionalism Best Practices: Professionalism in the Modern Era*. Aurora, CO: Alpha Omega Alpha Medical Society. https://www.alphaomegaalpha.org/wp-content/uploads/2022/01/Monograph2018.pdf. ISBN: 978-1-5323-6516-4. ● Domen, Ronald E., Kristen Johnson, Richard Michael Conran, Robert D. Hoffman, Miriam D. Post, Jacob J. Steinberg, Mark D. Brissette, et al. 2016. "Professionalism in Pathology: A Case-Based Approach as a Potential Educational Tool." *Archives of Pathology and Laboratory Medicine* 141: 215-219. https://doi.org/10.5858/arpa.2016-0217-CP.

	● Levinson, Wendy, Shiphra Ginsburg, Frederic W. Hafferty, and Catherine R. Lucey. 2014. *Understanding Medical Professionalism*. New York, NY: McGraw-Hill Education. https://accessmedicine.mhmedical.com/book.aspx?bookID=1058. ● Osseo-Asare, Aba, Lilanthi Balasuriya, Stephen J. Huot, et al. 2018. "Minority Resident Physicians' Views on the Role of Race/Ethnicity in Their Training Experiences in the Workplace." *JAMA Network Open*. 1(5): e182723. doi:10.1001/jamanetworkopen.2018.2723. ● Paul, Dereck W. Jr., Kelly R. Knight, Andre Campbell, and Louise Aronson. 2020. "Beyond a Moment - Reckoning with Our History and Embracing Antiracism in Medicine." *New England Journal of Medicine.* 383: 1404-1406. doi:10.1056/NEJMp2021812 https://www.nejm.org/doi/full/10.1056/NEJMp2021812.

Professionalism 2: Ethical Principles **Overall Intent:** To recognize and address or resolve common and complex ethical dilemmas or situations	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of the ethical principles underlying informed consent, surrogate decision making, advance directives, confidentiality, error disclosure, stewardship of limited resources, and related topics*	● Describes ethical principles of informed consent
Level 2 *Applies ethical principles in common situations*	● Applies the principle of "do no harm" when considering the use of off-label medications
Level 3 *Analyzes complex situations using ethical principles to address conflict/controversy; seeks help when needed to manage and resolve complex ethical situations*	● Offers treatment options for a terminally ill patient, minimizing bias, while recognizing own limitations, and consistently honoring the patient's and family's choice ● Organizes multidisciplinary care conference when subspecialty teams disagree on treatment plan for a patient with prognostic uncertainty to determine future direction in accordance with patient's family's wishes
Level 4 *Manages and seeks to resolve ethical dilemmas using appropriate resources (e.g., ethics consultations, literature review, risk management/legal consultation)*	● Appropriately uses ethics resources to discuss end-of-life care of a child in the intensive care unit with multiorgan failure and poor prognosis ● Uses institutional resources, including social work and risk management, when a patient's parent refuses to accept medical treatment ● Engages with a multidisciplinary team to address issues when patient's family and physicians disagree on care plan for a patient with brain death
Level 5 *Called upon by others to consult in cases of complex ethical dilemmas; identifies and seeks to address system-level factors that induce or exacerbate*	● Participates as part of the ethics consult service, providing guidance for complex cases
Assessment Models or Tools	● Direct observation ● Multisource feedback ● Oral or written self-reflection ● Simulation ● Case-based discussion
Curriculum Mapping	●
Notes or Resources	● American Board of Internal Medicine Foundation, ACP-ASIM Foundation, and European Federation of Internal Medicine. 2002. "Medical Professionalism in the New Millennium: A Physician Charter." *Annals of Internal Medicine* 136: 243-246. https://doi.org/10.7326/0003-4819-136-3-200202050-00012.

	● The American Board of Pediatrics. “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● American Medical Association. “Ethics.” https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. 2020. ● Bynny, Richard L., Douglas S. Paauw, Maxine Papadakis, and Sheryl Pfeil. 2017. *Medical Professionalism Best Practices: Professionalism in the Modern Era*. Aurora, CO: Alpha Omega Alpha Medical Society. https://www.alphaomegaalpha.org/wp-content/uploads/2022/01/Monograph2018.pdf. ISBN: 978-1-5323-6516-4. ● Domen, Ronald E., Kristen Johnson, Richard Michael Conran, Robert D. Hoffman, Miriam D. Post, Jacob J. Steinberg, Mark D. Brissette, et al. 2016. “Professionalism in Pathology: A Case-Based Approach as a Potential Educational Tool.” *Archives of Pathology and Laboratory Medicine* 141: 215-219. https://doi.org/10.5858/arpa.2016-0217-CP. ● Levinson, Wendy, Shiphra Ginsburg, Frederic W. Hafferty, and Catherine R. Lucey. 2014. *Understanding Medical Professionalism*. New York, NY: McGraw-Hill Education. https://accessmedicine.mhmedical.com/book.aspx?bookID=1058. ● Orioles, Alberto, Wynne E. Morrison. 2013. “Medical Ethics in Pediatric Critical Care.” *Critical Care Clinics* 29(2): 359-375. https://doi.org/10.1016/j.ccc.2012.12.002.

Professionalism 3: Accountability/Conscientiousness **Overall Intent:** To take responsibility for one's own actions and their impact on patients and other members of the health care team	
Milestones	**Examples**
Level 1 *Performs tasks and responsibilities, with prompting*	● After being informed by the program director that too many conferences have been missed, changes habits to meet the attendance requirement ● Completes patient care tasks (e.g., callbacks, consultations, orders, procedure notes) after prompting from a supervisor
Level 2 *Performs tasks and responsibilities in a timely manner in routine situations*	● Completes administrative tasks (e.g., licensing requirements) by specified due date ● Completes routine orders, callbacks, procedure notes, and consultations as assigned ● Answers pages and emails promptly with rare need for reminders
Level 3 *Performs tasks and responsibilities in a thorough and timely manner in complex or stressful situations*	● Asks for a co-fellow to assist with accepting an admission while attending to the needs of a decompensating patient
Level 4 *Coaches others to ensure tasks and responsibilities are completed in a thorough and timely manner in complex or stressful situations*	● Reminds co-fellows to attend conference and gives tips on task prioritization ● Supervises co-fellows and residents on a busy night, delegating tasks appropriately, and ensures that all tasks are completed for safe and thorough patient care
Level 5 *Creates strategies to enhance others' ability to efficiently complete tasks and responsibilities*	● Creates a workflow for systematic improvement of multidisciplinary discharge team coordination of care
Assessment Models or Tools	● Compliance with deadlines, timelines, and attendance ● Direct observation ● Multisource feedback ● Peer assessments ● Self-evaluations and reflective tools ● Simulation
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. "Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine." https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● American Medical Association. "Ethics." https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. Accessed 2020. ● Code of conduct from fellow/resident institutional manual ● Expectations of fellowship program regarding accountability and professionalism

Professionalism 4: Well-Being **Overall Intent:** To identify resources to manage and improve well-being	
Milestones	**Examples**
Level 1 *Recognizes the importance of addressing personal and professional well-being*	● Identifies that working in a pediatric intensive care unit may be stressful and impact well-being ● Discusses the importance of a faculty advisor ● Recognizes that personal stress may require a change in time management
Level 2 *Describes institutional resources that are meant to promote well-being*	● Identifies well-being resources such as meditation apps and mental health resources available through the program and institution for co-fellows, residents, and medical students ● Discusses options for Family Medical Leave Act with program director when expecting a child
Level 3 *Recognizes institutional and personal factors that impact well-being*	● Describes the difficulties in balancing professional and personal responsibilities ● Acknowledges how individual response to participating in a difficult end-of-life decision impacts well-being and may impact the approach to patients seen later the same day
Level 4 *Describes interactions between institutional and personal factors that impact well-being*	● Recognizes how microaggressions from coworkers and/or faculty members are impacting performance or engagement in patient care ● Leads a team debrief after a stressful event to promote discussion and team well-being
Level 5 *Coaches and supports colleagues to optimize well-being at the team, program, or institutional level*	● Participates in organizational efforts to address clinician well-being ● Develops a group to provide support for self and others to explore impact of microaggressions and biases
Assessment Models or Tools	● Direct observation ● Reflection ● Advisor feedback ● 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. ● ACGME. "Well-Being Tools and Resources." https://dl.acgme.org/pages/well-being-tools-resources. Accessed 2022. ● The American Board of Pediatrics. "Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine." https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022.

	● Hicks, Patricia J., Daniel Schumacher, Susan Guralnick, Carol Carraccio, and Ann E. Burke. 2014. “Domain of Competence: Personal and Professional Development.” *Academic Pediatrics* 14(2 Suppl): S80-97. https://www.sciencedirect.com/science/article/abs/pii/S187628591300332X. ● Local resources, including employee assistance programs

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication **Overall Intent:** To establish a therapeutic relationship with patients and their families, tailor communication to the needs of patients and their families, and effectively navigate difficult/sensitive conversations	
Milestones	**Examples**
Level 1 *Demonstrates respect and attempts to establish rapport* *Attempts to adjust communication strategies based upon patient/family expectations*	● Introduces self and faculty member, identifies patient and others in the room, and engages all parties in health care discussion ● Uses patient's preferred pronouns when addressing patient ● Identifies need for trained interpreter with non-English-speaking patients
Level 2 *Establishes a therapeutic relationship in straightforward encounters* *Adjusts communication strategies as needed to mitigate barriers and meet patient/family expectations*	● Explores the concerns of parents at the beginning of the admission a child with acute bronchiolitis who does not need intubation ● Uses nonjudgmental language to discuss sensitive topics ● While acknowledging gender identification, appropriately addresses the need for pelvic and/or bimanual exam in a transgender male with uterus/ovaries who is admitted with a surgical abdomen
Level 3 *Establishes a culturally competent and therapeutic relationship in most encounters* *Communicates with sensitivity and compassion, elicits patient/family values, and acknowledges uncertainty and conflict*	● Prioritizes and sets an agenda based on concerns of parents at the beginning of an admission of a child with multiple chronic medical problems who needs to be placed on continuous renal replacement therapy ● Discusses sensitive topics while promoting trust, respect, and understanding ● Recognizes that mispronouncing a patient's name, especially one of a different ethnicity, might be experienced as a microaggression; apologizes to the patient and seeks to correct the mistake ● Discusses resources and options with a teenage patient who is admitted with multiple traumas from a significant other in a manner that supports the patient and avoids bias in presentation of options
Level 4 *Establishes a therapeutic relationship in straightforward and complex encounters, including those with ambiguity and/or conflict*	● Continues to engage parents who refuse immunizations, addressing misinformation and reviewing risks/benefits to assuage these concerns in a manner that engages rather than alienates the patient's family after an asthmatic patient is extubated following a severe influenza infection ● Facilitates sensitive discussions with patient/family and interdisciplinary team ● Asks questions in ways that validate patient identities and promote an inclusive environment

Uses shared decision making with patient/family to make a personalized care plan	● While maintaining trust, engages family of a child with medical complexity along with other members of the multi-specialty care team in determining family wishes and expectations regarding resuscitative efforts in the event of an acute deterioration
Level 5 *Mentors others to develop positive therapeutic relationships* *Models and coaches others in patient- and family-centered communication*	● Coaches a junior resident disclosing serious news to a patient and the patient's family ● Develops a curriculum on patient- and family-centered communication, including navigating difficult conversations
Assessment Models or Tools	● Direct observation ● Multisource feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. "Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine." https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Association of American Medical Colleges MedEdPORTAL. "Anti-Racism in Medicine Collection." https://www.mededportal.org/anti-racism. Accessed 2022. ● Benson Bradley J. 2014. "Domain of Competence: Interpersonal and Communication Skills." *Academic Pediatrics* 14(2 Suppl): S55-S65. https://doi.org/10.1016/j.acap.2013.11.016. Accessed 2020. ● Laidlaw, Anita, and Jo Hart. 2011. "Communication Skills: An Essential Component of Medical Curricula. Part I: Assessment of Clinical Communication: AMEE Guide No. 51." *Medical Teacher* 33(1): 6-8. https://doi.org/10.3109/0142159X.2011.531170. ● Makoul, Gregory. 2001. "Essential Elements of Communication in Medical Encounters: the Kalamazoo Consensus Statement." *Academic Medicine* 76(4): 390-393. https://journals.lww.com/academicmedicine/Fulltext/2001/04000/Essential_Elements_of_Communication_in_Medical.21.aspx#pdf-link. ● Makoul, Gregory. 2001. "The SEGUE Framework for Teaching and Assessing Communication Skills." *Patient Education and Counseling* 45(1): 23-34. https://doi.org/10.1016/S0738-3991(01)00136-7. ● National LGBTQIA+ Health and Education Center: https://www.lgbtqiahealtheducation.org/.

Interpersonal and Communication Skills 2: Interprofessional and Team Communication **Overall Intent:** To communicate effectively with the health care team, including consultants	
Milestones	**Examples**
Level 1 *Respectfully requests a consultation, with guidance* *Identifies the members of the interprofessional team*	● When admitting a patient with Brugada syndrome who was resuscitated in the emergency department, and after being prompted by attending, requests consultation from cardiology ● Introduces each member of the multidisciplinary team to the patient and patient's family during rounds
Level 2 *Clearly and concisely requests consultation by communicating patient information* *Participates within the interprofessional team*	● When requesting a consult from the infectious disease team, clearly and succinctly describes the recent history of an intensive care unit patient who has a new fever ● Sends a message in the EHR to the dietitian of a metabolic patient to discuss increasing the protein restriction
Level 3 *Formulates a specific question for consultation and tailors communication strategy* *Uses bi-directional communication within the interprofessional team*	● For an infant with unexplained hypoglycemia, asks how frequently labs are needed and proactively creates a plan for further work-up should the clinical scenario require it ● After a consultation has been completed via a rapid response activation, communicates with the primary care team to verify they have received and understand the recommendations ● Contacts the metabolic team social worker to arrange for delivery of a specialized formula and completes the order
Level 4 *Coordinates consultant recommendations to optimize patient care* *Facilitates interprofessional team communication*	● Initiates a multidisciplinary meeting to develop shared care plan for a patient with 22q11.2 deletion syndrome with acute hypoxemic respiratory failure of unknown etiology ● Explains to the rest of the team, as well as the parents, the rationale for chromosome analysis, instead of chromosome microarray analysis, as the preferred diagnostic test for suspected Down syndrome ● Leads the morning interprofessional huddle on the inpatient unit
Level 5 *Maintains a collaborative relationship with referring providers that maximizes adherence to practice recommendations* *Coaches others in effective communication within the interprofessional team*	● Role models effective care communication by scheduling and leading weekly multidisciplinary care conversations with the cardiology team providing care for complex patient ● Mediates a conflict among members of the health care team ● Effectively navigates racial discrimination or microaggressions from a colleague as it pertains to another team member

Assessment Models or Tools	● Direct observation ● Global assessment ● Medical record (chart) audit ● Multi-source feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● ACAPT. “NIPEC Assessment Resources and Tools.” https://acapt.org/about/consortium/national-interprofessional-education-consortium-(nipec)/nipec-assessment-resources-and-tools. Accessed 2020. ● Dehon, Erin, Kimberly Simpson, David Fowler, Alan Jones. 2015. “Development of the Faculty 360.” *MedEdPORTAL* 11:10174. http://doi.org/10.15766/mep_2374-8265.10174. ● Fay, David, Michael Mazzone, Linda Douglas, Bruce Ambuel. 2007. “A Validated, Behavior-Based Evaluation Instrument for Family Medicine Residents.” *MedEdPORTAL*. 2007. https://www.mededportal.org/doi/10.15766/mep_2374-8265.622. Accessed 2020. ● François, José. 2011. “Tool to Assess the Quality of Consultation and Referral Request Letters in Family Medicine.” *Canadian Family Physician* 57(5):574–575. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3093595/. Accessed 2020. ● Green, Matt, Teresa Parrott, and Graham Cook. 2012. “Improving Your Communication Skills.” *BMJ*. 344:e357. https://doi.org/10.1136/bmj.e357. ● Henry, Stephen G., Eric S. Holmboe, and Richard M. Frankel. 2013. “Evidence-Based Competencies for Improving Communication Skills in Graduate Medical Education: A Review with Suggestions for Implementation.” *Medical Teacher*. 35(5):395-403. https://doi.org/10.3109/0142159X.2013.769677. ● Interprofessional Education Collaborative Expert Panel. 2011. “Core Competencies for Interprofessional Collaborative Practice: Report of an Expert Panel.” Washington, D.C.: Interprofessional Education Collaborative. https://www.aacom.org/docs/default-source/insideome/ccrpt05-10-11.pdf?sfvrsn=77937f97_2. Accessed 2020. ● Roth, Christine G., Karen W. Eldin, Vijayalakshmi Padmanabhan, and Ellen M. Freidman. 2019. “Twelve Tips for the Introduction of Emotional Intelligence in Medical Education.” *Medical Teacher* 41(7): 1-4. https://doi.org/10.1080/0142159X.2018.1481499.

Interpersonal and Communication Skills 3: Communication within Health Care Systems **Overall Intent:** To effectively communicate using a variety of tools and methods	
Milestones	**Examples**
Level 1 *Records accurate information in the patient record* *Identifies the importance of and responds to multiple forms of communication (e.g., in-person, electronic health record (EHR), telephone, email)*	● If using copy/paste/forward in the EHR, goes back to make changes to note after doing so ● Utilizes communication tools and methods for patient care needs, concerns, and safety issues ● Promptly responds to email regarding change of meeting time
Level 2 *Records accurate and timely information in the patient record* *Selects appropriate method of communication, with prompting*	● Completes rapid response note promptly and with accurate information ● Calls nurse with urgent request for labs after reminder from senior fellow
Level 3 *Concisely documents updated, prioritized, diagnostic and therapeutic reasoning in the patient record* *Aligns type of communication with message to be delivered (e.g., direct and indirect) based on urgency and complexity*	● Produces documentation in acute event note that reflects complex clinical thinking and planning, and is concise ● When a patient begins to decompensate, immediately requests additional resources and contacts the attending ● Emails patient's cardiologist with non-urgent question rather than paging cardiologist on call
Level 4 *Documents diagnostic and therapeutic reasoning, including anticipatory guidance* *Demonstrates exemplary written and verbal communication*	● Accurately documents an end-of-life family conference with clear, concise, and organized goals of care ● Communicates effectively and proactively with collaborating physicians and teams about communication gaps in order to prevent recurrence
Level 5 *Models and coaches others in documenting diagnostic and therapeutic reasoning* *Coaches others in written and verbal communication*	● Reviews notes at the end of the day with a resident to provide coaching on documentation of assessments and plans ● Leads a team to discuss implementation and dissemination of preferred pronouns/names in EHR
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit

	● Multisource feedback ● Peer assessments ● Simulation
Curriculum Mapping	●
Notes or Resources	● The American Board of Pediatrics. “Entrustable Professional Activities for Pediatric Subspecialties: Critical Care Medicine.” https://www.abp.org/content/entrustable-professional-activities-subspecialties. Accessed 2022. ● Benson, Bradley J. 2014. “Domain of Competence: Interpersonal and Communication Skills.” *Academic Pediatrics*.14(2 Suppl): S55-S65. https://doi.org/10.1016/j.acap.2013.11.016. Accessed 2020. ● Bierman, Jennifer A., Kathryn Kinner Hufmeyer, David T. Liss, A. Charlotta Weaver, and Heather L. Heiman. 2017. “Promoting Responsible Electronic Documentation: Validity Evidence for a Checklist to Assess Progress Notes in the Electronic Health Record.” *Teaching and Learning in Medicine.* 29(4): 420-432. https://doi.org/10.1080/10401334.2017.1303385. ● Haig, Kathleen M., Staci Sutton, and John Whittington. 2006. “SBAR: A Shared Mental Model for Improving Communications Between Clinicians.” *Joint Commission Journal on Quality and Patient Safety.* 32(3):167-75. https://doi.org/10.1016/s1553-7250(06)32022-3. ● Starmer, Amy J., Nancy D. Spector, Rajendu Srivastava, April D. Allen, Christopher P. Landrigan, Theodore Sectish, and I-PASS Study Group. 2012. “I-Pass, a Mnemonic to Standardize Verbal Handoffs.” *Pediatrics* 129.2:201-204. https://doi.org/10.1542/peds.2011-2966.

Interpersonal and Communication Skills 4: Communication Around Serious Illness, Including End-of-Life Care **Overall Intent:** To foster effective, patient- and family-centered communication for patients with life-limiting conditions or diseases with uncertain prognosis	
Milestones	**Examples**
Level 1 *Identifies communication of prognosis as a key element for shared decision making*	● Describes to the attending the need to share with the patient's family the range of potential outcomes in a child post-cardiac arrest
Level 2 *Assesses the patient's and family's/caregivers' prognostic awareness and identifies preferences for receiving prognostic information*	● In a care conference, asks the patient's family what they currently understand about the condition and potential outcomes for a child admitted with severe traumatic brain injury ● In meetings with adolescent patients, asks the adolescents how they prefer to receive information about their evolving illness
Level 3 *Delivers prognostic information and recognizes the emotional responses of patient and family/caregivers*	● Following a conversation about acute rejection after a liver transplant, responds to the emotional needs of a patient's family by offering social work or spiritual care support
Level 4 *Tailors communication of prognosis according to disease trajectory, patient/family needs, and medical uncertainty, and attends to the emotional responses*	● Directs a discussion of advanced directives in a patient with Duchenne muscular dystrophy who presented in cardiac arrest, and reaffirms the parent's emotions and uncertainty ● Anticipates emotional response of a patient's family to difficult news and includes multidisciplinary support during care conferences ● Integrates family's communication preferences and concerns into a discussion of the procedures and expectations for a patient being examined for death by neurological criteria
Level 5 *Coaches others in the communication of prognostic information*	● Runs a course for residents on challenging communication with patients at the end of life
Assessment Models or Tools	● Clinical case discussion ● Direct observation ● Multisource feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● Back, Anthony, Robert Arnold, and James Tulsky. 2009. *Mastering Communication with Seriously Ill Patients*. Cambridge: Cambridge University Press. ● Back, Anthony, Robert Arnold, Walter F. Baile, James Tulskey, and Kelly Fryer-Edwards. 2005. "Approaching Difficult Communication Tasks in Oncology." *CA: A Cancer Journal for Clinicians* 55(3): 164-77. https://doi.org/10.3322/canjclin.55.3.164. ● Baile, Walter F., Robert Buckman, Renato Lenzi, Gary Glober, Estela A. Beale, and Ardrzej P. Kudelka. 2000. "SPIKES - A Six-Step Protocol for Delivering Bad News: Application to the Patient with Cancer." *The Oncologist* 5(4): 302-11. doi: 10.1634/theoncologist.5-4-302. PMID: 10964998.

	● Childers, Julie W., Anthony Back, James Tulsky, and Robert M. Arnold. 2017. "REMAP: A Framework for Goals of Care Conversations. *Journal of Oncology Practice* 13(10): e844-e850. doi: 10.1200/JOP.2016.018796. ● DeCourcey, Danielle D., Melanie Silverman, Adeolu Oladunjoye, and Joanne Wolfe. 2019. "Advance Care Planning and Parent-Reported End-of-Life Outcomes in Children, Adolescents, and Young Adults With Complex Chronic Conditions." *Critical Care Medicine* Volume 47(1): 101-108 doi: 10.1097/CCM.0000000000003472. ● Levetown, Marcia, and the Committee on Bioethics. 2008. "Communicating with Children and Families: From Everyday Interactions to Skill in Conveying Distressing Information." *Pediatrics* 121(5): e1441-60. https://doi.org/10.1542/peds.2008-0565. ● VitalTalk. www.vitaltalk.org. Accessed 2018.

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

Milestones 1.0	Milestones 2.0
PC1: Provide transfer of care that ensures seamless transitions	SBP4: System Navigation for Patient-Centered Care – Transitions in Care
PC2: Make informed diagnostic and therapeutic decisions that result in optimal clinical judgement	PC1: History and Physical Exam
PC3: Develop and carry out management plans	PC3: Patient Management MK2: Clinical Reasoning ICS1: Patient- and Family-Centered Communication
PC4: Provide appropriate role modeling	PBLI2: Reflective Practice and Commitment to Personal Growth
	PC2: Organization and Prioritization of Patient Care
	PC4: Pre-Procedure Assessment
	PC5: Procedures
MK1: Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems	MK1: Foundational Knowledge PBLI1: Evidence Based and Informed Practice
SBP1: Work effectively in various health care delivery settings and systems relevant to their clinical specialty	SBP3: System Navigation for Patient Cantered Care – Coordination of Cre SBP6: Physician Role in Health Care Systems
SBP2: Coordinate patient care within the health care system relevant to their clinical specialty	SBP3: System Navigation for Patient Centered Care – Coordination of Care SBP4: System Navigation for Patient-Centered Care – Transitions in Care SBP5: Population and Community Health ICS1: Patient- and Family-Centered Communications ICS2: Interprofessional and Team Communication
SBP3: Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate	SBP5: Population and Community Health SBP6: Physician Role in Health Care Systems
SBP4: Work in inter-professional teams to enhance patient safety and improve patient care quality	SBP1: Patient Safety ICS2: Interprofessional and Team Communication

SBP5: Participate in identifying system errors and implementing potential systems solutions	SBP1: Patient Safety SBP2: Quality Improvement
PBLI1: Identifying strengths, deficiencies, and limits to one's knowledge and expertise	PBLI1: Evidence Based and Informed Practice PBLI2: Reflective Practice and Commitment to Personal Growth
PBLI2: Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement	SBP2: Quality Improvement PBLI2: Reflective Practice and Commitment to Personal Growth
PBLI3: Use information technology to optimize learning and care delivery	PBLI1: Evidence Based and Informed Practice PBLI2: Reflective Practice and Commitment to Personal Growth ICS3: Communication within Health Care Systems
PBLI4: Participate in the education of patients, families, students, residents, fellows, and other health professionals	SBP5: Population and Community Health PBLI1: Evidence Based and Informed Practice ICS1: Patient- and Family-Centered Communications
PROF1: Professional Conduct: High standards of ethical behavior which includes maintaining appropriate professional boundaries	PROF1: Professional Behavior PROF2: Ethical Principles
PROF2: Trustworthiness that makes colleagues feel secure when one is responsible for the care of patients	PBLI1: Evidence Based and Informed Practice PROF1: Professional Behavior PROF3: Accountability/Conscientiousness ICS1: Patient- and Family-Centered Communications
PROF3: Provide leadership skills that enhance team functioning, the learning environment, and/or the health care delivery system/environment with the ultimate intent of improving care of patients	ICS2: Interprofessional and Team Communication ICS3: Communication within Health Care Systems PROF2: Ethical Principles PROF3: Accountability/Conscientiousness
PROF4: The capacity to accept that ambiguity is part of clinical medicine and to recognize the need for and to utilize appropriate resources in dealing with uncertainty	PROF2: Ethical Principles ICS1: Patient- and Family-Centered Communication PBLI1: Evidence Based and Informed Practice
	PROF4: Well-Being
ICS1: Communicate effectively with physicians, other health professionals, and health-related agencies	ICS2: Interprofessional and Team Communication ICS3: Communication within Health Care Systems
ICS2: Work effectively as a member or leader of a health care team or other professional group	ICS2: Interprofessional and Team Communication PBLI2: Reflective Practice and Commitment to Personal Growth PROF3: Accountability/Conscientiousness
ICS3: Act in a consultative role to other physicians and health professionals	MK2: Clinical Reasoning ICS2: Interprofessional and Team Communication ICS3: Communication within Health Care Systems

	ICS4: Communication Around Serious Illness, Including End-of-Life Care

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/