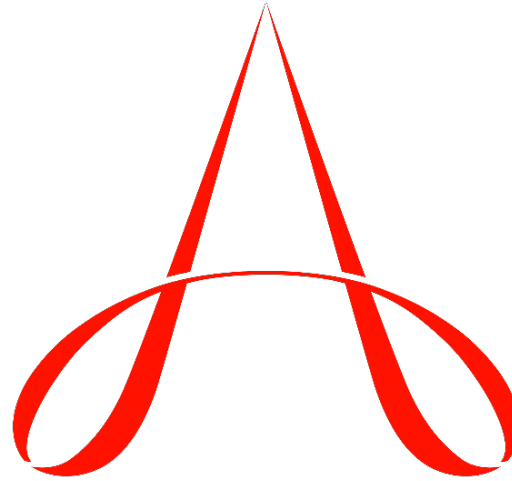




Supplemental Guide: Emergency Medicine



ACGME

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Milestones Supplemental Guide

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

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

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

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

Patient Care 1: Emergency Stabilization	
Overall Intent: To prioritize critical initial stabilization action and mobilize hospital support services in the resuscitation of a critically ill or injured patient and reassess after stabilizing intervention	
Milestones	Examples
<p>Level 1 <i>Detects when a patient’s vital signs are abnormal</i></p> <p><i>Assesses a patient’s ABCs and performs basic interventions</i></p>	<ul style="list-style-type: none"> ● Interprets normal versus abnormal vital signs in the adult and pediatric patient and knows when to call for help ● Recognizes abnormal vital signs in a patient who requires end-of-life care ● Performs a Primary Survey and begins basic interventions such as administering oxygen or intravenous fluids or controlling bleeding
<p>Level 2 <i>Identifies a patient who is unstable and requires immediate intervention</i></p> <p><i>Addresses the unstable vital signs and initiates advanced resuscitation procedures and protocols</i></p>	<ul style="list-style-type: none"> ● For the non-ocult presentations, identifies the unstable patient ● Recognizes that a patient with a low oxygen saturation and depressed mental status will require advanced airway interventions ● Provides supplemental oxygen for a terminally-ill cancer patient who is hypoxic and tachypneic
<p>Level 3 <i>Identifies a patient with occult presentation that is at risk for instability or deterioration</i></p> <p><i>Reassesses the patient’s status after implementing a stabilizing intervention</i></p>	<ul style="list-style-type: none"> ● Identifies in a geriatric trauma patient that the lack of a tachycardic response could be due to the patient taking beta blockers ● After administering blood products, reassesses the patient for response to the intervention or reassesses the patient after placing them on a ventilator ● Addresses advanced directives in a terminally ill patient, implements comfort care, and consults with palliative care team
<p>Level 4 <i>Ascertains, in a timely fashion, when further clinical intervention for a patient is futile</i></p> <p><i>Integrates hospital support services into the management of critically-ill or -injured patients</i></p>	<ul style="list-style-type: none"> ● Identifies that a patient who has suffered an out-of-hospital cardiac arrest secondary to blunt trauma has no chance for survival ● Identifies that invasive measures are futile in a patient who has a terminal illness without documented advanced directives ● Identifies patients who need transfer to higher levels of care; initiates hospital protocols such as Massive Transfusion Protocol
<p>Level 5 <i>Manages patients with rare or complex presentations requiring emergency stabilization</i></p>	<ul style="list-style-type: none"> ● Manages the care of an unstable trauma patient with hemophilia
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Multisource feedback ● Simulation

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Curriculum Mapping	•
Notes or Resources	<ul style="list-style-type: none">• Council of Residency Directors (CORD) Teaching Cases. Oral Board and Simulation Cases. https://www.cordem.org/resources/education--curricula/oral-board--sim-cases. 2020.• EM Sim Cases. https://emsimcases.com/. 2020.• CORD. Standardized Direct Observation Tool. https://www.cordem.org/resources/residency-management/cord-standardized-assessment-methods/. 2020.

Patient Care 2: Performance of Focused History and Physical Exam	
Overall Intent: To abstract findings in patients with multiple current chronic medical problems and identify significant differences between a current presentation and past presentations	
Milestones	Examples
Level 1 <i>Elicits and communicates a reliable comprehensive patient history and performs a physical exam</i>	<ul style="list-style-type: none"> ● Sees a stable patient and independently performs and reports a complete history and physical exam
Level 2 <i>Elicits and communicates a focused patient history and performs a focused physical exam that effectively address the patient’s chief complaint and urgent issues</i>	<ul style="list-style-type: none"> ● When a patient presents with a limb injury and multiple medical problems, identifies the issues that urgently impact the care of that injury, and only presents relevant data ● Presents patient history and physical in an organized and concise manner
Level 3 <i>Prioritizes essential components of a patient history and physical exam, given a limited or dynamic circumstance</i>	<ul style="list-style-type: none"> ● Cares for a patient with acute severe shortness of breath using only the data from emergency medical services (EMS) and the primary and secondary survey that contribute directly to the patients presenting complaint ● Assesses the cardiac and respiratory status of an asthmatic patient in acute respiratory distress who is hypoxic, tachypneic, and unable to provide further history
Level 4 <i>Using all potential sources of data, gathers those that are necessary for the beneficial management of patients</i>	<ul style="list-style-type: none"> ● Extensively reviews the electronic health record (EHR), calls family members and primary care physician to obtain further history for a patient with altered mental status
Level 5 <i>Models the effective use of a patient history and physical exam to minimize the need for further diagnostic testing</i>	<ul style="list-style-type: none"> ● Initiates a general surgery consultation for patient with right lower quadrant tenderness for acute appendicitis based on history and physical examination and without obtaining a computed tomography (CT) scan
Assessment Models or Tools	<ul style="list-style-type: none"> ● Direct observation ● Multisource feedback ● Simulation ● Standardized patients
Curriculum Mapping	<ul style="list-style-type: none"> ●
Notes or Resources	<ul style="list-style-type: none"> ● King RW, Schiavone F, Counselman FL, Panacek EA. Patient care competency in emergency medicine graduate medical education: results of a consensus group on patient care. <i>Acad Emerg Med.</i> 2002;9(11):1227-1235. https://pubmed.ncbi.nlm.nih.gov/12414476/. 2020.

Patient Care 3: Diagnostic Studies	
Overall Intent: To apply the results of diagnostic testing based on the probability of disease and the likelihood of test results altering management	
Milestones	Examples
<p>Level 1 <i>Determines the need for diagnostic studies</i></p> <p><i>Demonstrates understanding of diagnostic testing principles</i></p>	<ul style="list-style-type: none"> ● Discusses the need for a radiograph of a patient who was unable to bear weight after an ankle injury ● Discusses basic principles of sensitivity and specificity of basic emergency department testing
<p>Level 2 <i>Selects appropriate diagnostic studies and reviews the risks, benefits, and contraindications of them</i></p> <p><i>Interprets results of diagnostic testing (e.g., electrocardiogram (EKG), diagnostic radiology, point-of-care ultrasound)</i></p>	<ul style="list-style-type: none"> ● Independently orders laboratory and imaging studies for stable patients and is aware of the contraindications of those tests ● Understands the utility of certain tests (e.g., complete blood count) in an acutely bleeding patient or serial EKGs ● Independently interpret results of common diagnostic testing modalities such as pneumothorax on a chest x-ray or myocardial infarction on an EKG, or free fluid in the abdomen on focused assessment with sonography in trauma (FAST) exam
<p>Level 3 <i>Given a limited or dynamic circumstance, prioritizes the diagnostic studies that are essential</i></p> <p><i>Orders and performs diagnostic testing, considering the pre-test probability of disease and the likelihood of test results altering management</i></p>	<ul style="list-style-type: none"> ● While caring for a multi-trauma patient, recognizes that the patient with a depressed mental status and Glasgow Coma Score of 11 should have a head CT performed in advance of other ordered modalities ● While caring for a female patient who is hypotensive, recognizes the need to perform point-of-care ultrasound (POCUS) to evaluate for abdominal free fluid suggestive of a ruptured ectopic pregnancy ● Knows not to initially order troponin or brain natriuretic peptide tests in a young healthy patient who presents with sudden onset of unilateral pleuritic chest pain; effectively uses decision rules such as Pulmonary Embolism Rule-out Criteria (PERC)
<p>Level 4 <i>Practices cost-effective ordering of diagnostic studies</i></p> <p><i>Considers the factors that impact post-test probability</i></p>	<ul style="list-style-type: none"> ● For a patient with an isolated injury, orders radiographs consistent with the physical exam (e.g., would not order x-rays of the knee and ankle in a patient who fell onto a hip and has consistent physical findings) ● For a patient with a known history of nephrolithiasis who presents with flank pain, performs a POCUS to scan to evaluate for hydronephrosis and recognizes that in the setting of no hydronephrosis and a urinalysis without evidence of infection, recognizes that a CT scan is not indicated ● Orders a CT scan instead of magnetic resonance (MR)

	<ul style="list-style-type: none"> ● Recognizes when a D-dimer should not have been ordered for a patient who was PERC negative; recognizes further testing could lead to a false positive
<p>Level 5 <i>Proposes alternatives when barriers exist to specific diagnostic studies</i></p> <p><i>In the context of the patient presentation, discriminates between subtle and/or conflicting diagnostic results</i></p>	<ul style="list-style-type: none"> ● Orders an alternative study for magnetic resonance imaging (MRI) for a patient with well-documented claustrophobia; develops an effective pharmacologic intervention to facilitate the study ● Understands the diagnostic significance of a patient with an elevated D-dimer who recently had surgery ● In a patient with normal chest x-ray but POCUS showing pneumothorax, understands that POCUS may be more sensitive than radiography
Assessment Models or Tools	<ul style="list-style-type: none"> ● Direct observation ● Multisource feedback ● Simulation ● Standardized patients
Curriculum Mapping	<ul style="list-style-type: none"> ●
Notes or Resources	<ul style="list-style-type: none"> ● POCUS has been shown to be accurate, timely, and cost-effective, while assessing for changes after interventions and over time. The I-AIM model (Indication, Acquisition, Interpretation, and Medical decision making) is one approach to POCUS education and may be a model for development of milestones within PC3. (https://pubmed.ncbi.nlm.nih.gov/22298874/) ● Choosing Wisely. American College of Emergency Physicians. https://www.choosingwisely.org/societies/american-college-of-emergency-physicians/. 2020. ● Jaeschke R, Guyatt G, Sackett DL. Users' guides to the medical literature. III. How to use an article about a diagnostic test. A. Are the results of the study valid?. <i>JAMA</i>. 1994;271(5):389-391. https://pubmed.ncbi.nlm.nih.gov/8283589/. 2020. ● Jaeschke R, Guyatt GH, Sackett DL. Users' guides to the medical literature. III. How to use an article about a diagnostic test. B. What are the results and will they help me in caring for my patients?. <i>JAMA</i>. 1994;271(9):703-707. https://pubmed.ncbi.nlm.nih.gov/8309035/. 2020.

Patient Care 4: Diagnosis

Overall Intent: To narrow and prioritize the list of weighted differential diagnoses to determine appropriate management, using all available data

Milestones	Examples
Level 1 <i>Constructs a list of potential diagnoses based on the patient's chief complaint and initial assessment</i>	<ul style="list-style-type: none"> Constructs a list of potential diagnoses including the more uncommon and esoteric diagnostic possibilities such as carcinoid tumors in a patient with right lower quadrant pain
Level 2 <i>Provides a prioritized differential diagnosis</i>	<ul style="list-style-type: none"> Develops a differential diagnosis that leads with the conditions that pose the highest risk to morbidity and mortality
Level 3 <i>Provides a diagnosis for common medical conditions and demonstrates the ability to modify a diagnosis based on a patient's clinical course and additional data</i>	<ul style="list-style-type: none"> Diagnoses pneumonia, taking into consideration the comorbidities that put the patient at high risk for aspiration pneumonia or lung abscess
Level 4 <i>Provides a diagnosis for patients with multiple comorbidities or uncommon medical conditions, recognizing errors in clinical reasoning</i>	<ul style="list-style-type: none"> Recognizes subtle differences in a patient with chronic obstructive pulmonary disease (COPD) presenting with shortness of breath that was more consistent with a pulmonary embolism as opposed to a disease exacerbation
Level 5 <i>Serves as a role model and educator to other learners for deriving diagnoses and recognizing errors in clinical reasoning</i>	<ul style="list-style-type: none"> Recognizes a patient identified as a high-volume user is presenting with subtle changes in presentation and launches an appropriate work-up
Assessment Models or Tools	<ul style="list-style-type: none"> Chart-stimulated recall Direct observation Multisource feedback Simulation
Curriculum Mapping	<ul style="list-style-type: none">
Notes or Resources	<ul style="list-style-type: none"> CORD. Teaching Cases: Oral Board and Simulation Cases. https://www.cordem.org/resources/education--curricula/oral-board--sim-cases/. 2020. Society to Improve Diagnosis in Medicine. Practice Improvement Tools. https://www.improvediagnosis.org/practice-improvement-tools/. 2020. Croskerry P. <i>The Cognitive Autopsy: A Root Cause Analysis of Medical Decision Making</i>. 1st ed. New York, NY: Oxford University Press; 2020.

Patient Care 5: Pharmacotherapy	
Overall Intent: To select and prescribe appropriate pharmaceutical agents based upon relevant considerations such as mechanism of action, intended effect, financial considerations, possible adverse effects, patient preferences, allergies, potential drug-food and drug-drug interactions, institutional policies, and clinical guidelines; to effectively combine agents and monitors and intervenes in the advent of adverse effects in the emergency department	
Milestones	Examples
<p>Level 1 <i>Describes the different classifications of pharmacologic agents</i></p> <p><i>Consistently asks patients for drug allergies</i></p>	<ul style="list-style-type: none"> ● Articulates the different classes of antihypertensive medications after a patient with a history of hypertension who is non-compliant with previously prescribed medications but has markedly elevated blood pressure throughout the patient’s emergency department course is prescribed an antihypertensive medication at discharge ● During a shift, informs attending a patient who is listed as no known drug allergies in the EHR actually has a history of anaphylaxis to penicillin 10 years earlier that resulted in intensive care unit (ICU) admission
<p>Level 2 <i>Selects appropriate agent for therapeutic intervention</i></p> <p><i>Evaluates for potential adverse effects of pharmacotherapy and drug-to-drug interactions</i></p>	<ul style="list-style-type: none"> ● Articulates the different classes of antihypertensive medications and which is better to use in specific clinical situations ● Prescribes nitrofurantoin for a pregnant patient with a urinary tract infection instead of Bactrim because it is contraindicated in pregnancy
<p>Level 3 <i>Considers array of drug therapy and selects appropriate agent based on mechanism of action and intended effect</i></p> <p><i>Recognizes and acts upon common adverse effects and interactions</i></p>	<ul style="list-style-type: none"> ● After seeing a patient who is in status epilepticus, gives appropriate doses of benzodiazepines that do not stop the seizure, and then describes second- and third-line medications ● When prescribing an antibiotic for treating a urinary tract infection in a pregnant patient, looks at the results of prior urine cultures and considers the antibiotic sensitivity assays within the institution ● After giving a tissue plasminogen activator (tPA) to a stroke patient, performs neuro checks on the patient and notices that the patient has an altered mental status and considers an intracranial hemorrhage
<p>Level 4 <i>Selects the appropriate agent based on patient preferences, allergies, cost, policies, and clinical guidelines</i></p> <p><i>Recognizes and acts upon uncommon and unanticipated adverse effects and interactions</i></p>	<ul style="list-style-type: none"> ● Prescribes nitrofurantoin in conjunction with institutional sensitivity assays for a pregnant patient with a urinary tract infection who has had gastrointestinal upset with amoxicillin and who has an insurance with a large out-of-pocket copay ● Identifies an aortic dissection in a 60-year-old man who was recently treated with a fluoroquinolone for community acquired pneumonia presenting to the emergency department with chest pain; recognizes the fluoroquinolones may have predisposed the patient to aortic dissection

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<p>Level 5 <i>Participates in developing departmental and/or institutional policies on pharmacy and therapeutics</i></p>	<ul style="list-style-type: none"> ● Is an active member of the institution’s Pharmacy and Therapeutics Committee and develops a protocol for the use of anticoagulant reversal in the trauma setting ● Participates in creating a protocol for treatment of pneumonia, including consideration of how it was acquired, comorbid illnesses, and medication allergies
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● In-training examination ● Medical record (chart) audit ● Multisource clinical evaluations ● Simulation exercises
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● Prescribers’ Digital Reference. https://www.pdr.net/. 2020. ● Levine BJ. <i>EMRA Antibiotic Guide</i>. 19th ed. Emergency Medicine Residents' Association; 2020.

Patient Care 6: Reassessment and Disposition	
Overall Intent: To re-evaluate patients throughout the emergency department course, use appropriate data and resources, and develop treatment plan and disposition	
Milestones	Examples
<p>Level 1 <i>Describes basic resources available (e.g., follow-up care, rehabilitation, transfer centers)</i></p> <p><i>Describes basic patient education plans</i></p> <p><i>Identifies the need for patient re-evaluation</i></p>	<ul style="list-style-type: none"> ● Evaluates and treats a patient with an ankle sprain; refers the patient to sports medicine and physical therapy ● Evaluates and treats a patient with an ankle sprain; explains to the patient there is a ligamentous injury and need for splinting and a follow-up ● Prescribes pain management for a patient for with an ankle sprain and reassesses the patient's pain in a timely manner
<p>Level 2 <i>Makes a disposition decision for patients with routine conditions needing minimal resources</i></p> <p><i>Educates patients on simple discharge and admission plans</i></p> <p><i>Monitors that necessary diagnostic and therapeutic interventions are performed</i></p>	<ul style="list-style-type: none"> ● Evaluates, treats, and determines a patient with an ankle sprain may be discharged with a wrap, crutches for ambulatory assistance, nonsteroidal anti-inflammatory drugs (NSAIDs) as needed for pain, and orthopaedics follow-up without the need for an x-ray ● Discharges a patient who has been worked up in the emergency department for low-risk chest pain and explains to the patient the tests performed are all within normal limits and the risk for an adverse cardiac event, is very low; explains the need to follow up with the primary care physician and instructs the patient to return to the emergency department if the symptoms persist, worsen, or any additional symptoms arise ● Works up a patient who has chest pain and a moderate risk for adverse cardiac events, and explains to the patient that based on cardiac risk factors, clinical presentation, and EKG findings, the plan is to admit the patient to the hospital for further cardiac testing and monitoring ● Evaluates a patient who presents to the emergency department for flank pain and orders labs, urine analysis, a CT scan of the abdomen and pelvis, and ketoralac for the pain; follows up with staff to ensure that these interventions have been performed
<p>Level 3 <i>Makes a disposition decision for patients with routine conditions, with resource utilization</i></p> <p><i>Educates patients regarding diagnosis, treatment plan, medication review and primary care physician/consultant appointments</i></p>	<ul style="list-style-type: none"> ● Evaluates a wheelchair-bound patient who presents with dysuria; after determining the patient has a urinary tract infection and may be discharged home on oral antibiotics, consults the social worker to assist with transportation home and obtaining medications from the pharmacy ● Discusses the diagnosis of tibial fracture with the patient and reviews how to manage pain using over-the-counter medications as well as any prescribed medications, and reviews current medications for potential adverse drug-drug interactions; discusses the need for

<p><i>Identifies which patients will require ongoing emergency department evaluation and evaluates the effectiveness of diagnostic and therapeutic interventions</i></p>	<p>follow-up within a certain time frame ensuring the patient has either an appointment or access to make an appointment; assures the patient a safe resumption of daily activities</p> <ul style="list-style-type: none"> ● For a patient with acute decompensated heart failure who is on Bilevel Positive Airway Pressure (BiPAP) and is currently on a nitroglycerin infusion, re-evaluates the patient at regular intervals, titrating the nitroglycerin drip based on the patient’s symptoms and blood pressure; adjusts the BiPAP parameters and fraction of inspired oxygen based on blood gas values, symptoms, and clinical presentation
<p>Level 4 <i>Makes disposition decision for patients with complex conditions, with resource utilization</i></p> <p><i>Educates patients on complex discharge and admission plans, including complex transfers</i></p> <p><i>Evaluates changes in clinical status during a patient’s emergency department course</i></p>	<ul style="list-style-type: none"> ● Consults the trauma and internal medicine services and coordinates admission to a monitored bed after evaluating a patient with multiple medical conditions who sustained multiple rib fractures and pulmonary contusions after falling down stairs following a syncopal episode; patient also has a fever, elevated white blood cell count, a urinary tract infection, and acute kidney injury ● For a patient with a history of multiple sclerosis presenting with fever, cough, and hypotension, diagnoses the patient with severe sepsis secondary to pneumonia and determines the patient requires ICU admission; upon learning the patient prefers to be admitted to a different hospital, consults with the patient’s primary care physician at the outside hospital and relates that the patient will require an ICU bed; informs patient of risks of transfer and coordinates transfer using critical care transportation ● For a patient with a history of colon cancer who presents with shortness of breath and a temperature of 100°F whose vital signs are within normal limits upon arrival to the emergency department who later has respiratory distress and altered mental status, repeats vital signs, provides a definitive airway, obtains an EKG, repeat chest x-ray, and orders a chest computed tomography (CT) to assess for pulmonary embolus, metastatic lung lesions, and other causes of respiratory decompensation
<p>Level 5 <i>Participates in institutional committees to develop systems that enhance safe patient disposition and maximizes resources</i></p> <p><i>Participates in the development of protocols to enhance patient safety</i></p>	<ul style="list-style-type: none"> ● Actively participates in departmental and/or hospital committees that develop protocols for admission to observation units and medical services ● Helps develop interdisciplinary protocols to safely discharge patients to their homes, rehabilitation centers, and skilled nursing facilities ● Develops protocols for pain management in patients with sickle cell disease ● Develops protocols to clean, maintain, and store video laryngoscopy equipment in the department
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Clinical evaluations

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	<ul style="list-style-type: none">• Direct observation• Multisource evaluations• Simulation exercises
Curriculum Mapping	<ul style="list-style-type: none">•
Notes or Resources	<ul style="list-style-type: none">• Chan TM, Sherbino J, Welsher A, Chorley A, Pardhan A. Just the facts: how to teach emergency department flow management. <i>CJEM</i>. 2020;22(4):459-462. https://pubmed.ncbi.nlm.nih.gov/32401190/. 2020.• Gridlocked Game. https://www.gridlockedgame.com/. 2020.

Patient Care 7: Multitasking (Task-Switching)	
Overall Intent: To employ task switching in an efficient and timely manner	
Milestones	Examples
Level 1 <i>Manages a single patient amidst distractions</i>	<ul style="list-style-type: none"> Evaluates a patient with an ankle injury and remains focused on the patient’s progress even though there are multiple patients in the department
Level 2 <i>Task-switches between different patients of similar acuity</i>	<ul style="list-style-type: none"> After evaluating patient with an ankle injury and wrist injury respectively, ensures disposition on the first patient is complete before adding a third patient
Level 3 <i>Employs task-switching in an efficient manner to manage multiple patients of varying acuity and at varying stages of work-up</i>	<ul style="list-style-type: none"> Evaluates a patient with chest pain, and while waiting for serum testing results, evaluates a patient with an ankle injury; launches care for a third patient after receiving a critical lab value, and hands off a fourth patient with asthma to medicine
Level 4 <i>Employs task-switching in an efficient manner to manage the emergency department</i>	<ul style="list-style-type: none"> Cares for several patients of varying acuity levels at different stages of work-up; arranges disposition and finishes documentation of a patient with chest pain to free up a high-acuity patient care room
Level 5 <i>Employs task switching in an efficient manner to manage the emergency department under high-volume or surge situations</i>	<ul style="list-style-type: none"> In a mass casualty or surge situation, identifies and calls in additional residents, nurses, scribes and other staff
Assessment Models or Tools	<ul style="list-style-type: none"> Clinical evaluations Direct observation Multisource evaluations Simulation exercises
Curriculum Mapping	<ul style="list-style-type: none">
Notes or Resources	<ul style="list-style-type: none"> CORD. Standardized Direct Observation Tool. https://www.cordem.org/resources/residency-management/cord-standardized-assessment-methods/. 2020. Heng KWJ. Teaching and evaluating multitasking ability in emergency medicine residents-what is the best practice?. <i>Int J Emerg Med</i>. 2014;7:41. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4306081/. 2020. Skaugset LM, Farrell S, Carney M, et al. Can you multitask? Evidence and limitations of task switching and multitasking in emergency medicine. <i>Ann Emerg Med</i>. 2015;68(2):189-195. https://pubmed.ncbi.nlm.nih.gov/26585046/. 2020.

Patient Care 8: General Approach to Procedures	
Overall Intent: To perform the indicated procedure on all appropriate patients (including those who are uncooperative, at the extremes of age, hemodynamically unstable and those who have multiple comorbidities, poorly defined anatomy, high risk for pain or procedural complications, sedation requirement); to take steps to avoid potential complications, and to recognize the outcome and/or complications resulting from the procedure	
Milestones	Examples
<p>Level 1 <i>Identifies indications for a procedure and pertinent anatomy and physiology</i></p> <p><i>Performs basic therapeutic procedures (e.g., suturing, splinting)</i></p>	<ul style="list-style-type: none"> ● With prompting, identifies the indications for basic emergency medicine procedures, such as ultrasound, laceration repair, splinting, and lumbar punctures and lists the involved anatomy ● After evaluating a patient with a stable distal fibular fracture, ascertains there is no medial malleolar, proximal fibular, or base of fifth metatarsal pain; identifies the need for splint stabilization until the patient is seen by orthopaedics ● Applies a well-padded posterior short-leg fiberglass splint ● Knows the indication for POCUS
<p>Level 2 <i>Assesses indications, risks, benefits, and alternatives and obtains informed consent in low-to moderate-risk situations</i></p> <p><i>Performs and interprets basic procedures, with assistance</i></p> <p><i>Recognizes common complications</i></p>	<ul style="list-style-type: none"> ● Has a comprehensive knowledge of indications, risks, benefits, complications, and alternatives; helps the patient make informed decisions when there is no time pressure ● When caring for a patient with a facial laceration, discusses the benefits of laceration repair and the risk of scarring or infection, and obtains the patient’s consent for a specific method ● Performs a FAST exam and identifies free fluid, with supervision ● Performs basic ultrasound exams, optimizes images, identifies normal anatomy, as well as grossly pathologic findings (large pericardial fluid, large intra-abdominal fluid, severe hydronephrosis, etc.); uses ultrasound for procedural guidance including central line placement, arterial line placement, and abscess incision and drainage ● Before performing a lumbar puncture, explains methods to reduce the risk of postdural puncture headaches; initiates those methods and explains how a postdural puncture headache would present and can list therapeutic interventions to attempt should the complication arise
<p>Level 3 <i>Assesses indications, risks, and benefits and weighs alternatives in high-risk situations</i></p> <p><i>Performs and interprets advanced procedures, with guidance</i></p>	<ul style="list-style-type: none"> ● Has comprehensive knowledge of indications, risks, benefits, complications, and alternatives; urgently consents patients in time-pressured situations and knows when consent is implied, moving towards intervention ● After evaluating a patient with a dyspnea, performs a bedside echocardiogram and identifies a pericardial effusion; discusses the possibility of tamponade, listing the

<p><i>Manages common complications</i></p>	<p>common findings on echocardiogram and decides to proceed with pericardiocentesis with direct supervision</p> <ul style="list-style-type: none"> ● Routinely uses ultrasound in clinical decision making and identifies subtle pathologic findings (small pericardial effusions, right heart strain, cholecystitis, decrease ejection fraction) ● While placing an ultrasound-guided central line, expresses concern about inadvertently puncturing the artery and confirms suspicion using several techniques; after confirming suspicion, removes the needle and holds pressure for a prolonged period before reattempting the line placement
<p>Level 4 Acts to mitigate modifiable risk factors in high-risk situations</p> <p><i>Independently performs and interprets advanced procedures</i></p> <p><i>Independently recognizes and manages complex and uncommon complications</i></p>	<ul style="list-style-type: none"> ● In a hypotensive, septic, obese patient, uses ultrasound, volume expansion, and proper positioning to place a central catheter ● In a peri-arrest trauma patient, identifies tamponade on FAST exam and communicates this finding along with the recommendation that a thoracotomy is indicated ● While placing a central line, expresses concern about an air embolism and considers hyperbaric therapy after confirming that suspicion ● Independently uses and integrates appropriate POCUS applications for clinical management and identifies procedural success and evaluates complications
<p>Level 5 Teaches advanced procedures and independently performs rare, time-sensitive procedures</p> <p><i>Performs procedural peer review</i></p>	<ul style="list-style-type: none"> ● Teaches thoracotomy in the simulation center to more junior residents and medical students; performs rare procedures (e.g., cricothyrotomy) as needed in the emergency department ● Participates in peer-review processes that evaluate procedural competency
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Clinical evaluations ● Direct observation ● Multisource evaluations ● Oral cases ● Procedural labs ● Simulation exercises
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● American College of Emergency Physicians. Ultrasound Policy Statement. https://www.acep.org/globalassets/new-pdfs/policy-statements/ultrasound-guidelines---emergency-point-of-care-and-clinical-ultrasound-guidelines-in-medicine.pdf. 2020.

- Hughes PG, Crespo M, Maier T, Whitman A, Ahmed R. Ten tips for maximizing the effectiveness of emergency medicine procedure laboratories. *J Am Osteopath Assoc.* 2016;116(6):384-390. <https://pubmed.ncbi.nlm.nih.gov/27214775/>. 2020.
- Review Committee advanced procedure list can be used for additional Level 5 examples

Medical Knowledge 1: Scientific Knowledge	
Overall Intent: To understand the pathophysiology of the primary disease processes seen and treated in emergency medicine	
Milestones	Examples
Level 1 <i>Demonstrates scientific knowledge of common presentations and conditions</i>	<ul style="list-style-type: none"> ● Discusses basic knowledge about the evaluation, differential, work-up, and management of common presenting complaints; lists textbook answers for common conditions and uses decision aids, but has difficulty knowing when to stop using decision aids
Level 2 <i>Demonstrates scientific knowledge of complex presentations and conditions</i>	<ul style="list-style-type: none"> ● Translates level-appropriate medical knowledge to multi-dimensional patient presentation ● Discusses more advanced knowledge about the evaluation, differential, work-up, and management of common presenting complaints and can go beyond textbook answers, incorporating up-to-date evidence about common conditions; beginning to master more complex presentations; starts to consider how thinking is influenced by the probability of disease
Level 3 <i>Integrates scientific knowledge of comorbid conditions for complex presentations</i>	<ul style="list-style-type: none"> ● Has mastered basic presentations and has a high degree of knowledge about complex presentations; explains how thinking is guided by a patient's presentation and can weigh multiple factors to appropriately risk stratify and guide diagnostic and therapeutic plans, often incorporating emerging evidence to guide patient management
Level 4 <i>Integrates scientific knowledge of uncommon, atypical, or complex comorbid conditions for complex presentations</i>	<ul style="list-style-type: none"> ● Has mastered basic and complex presentations while considering a wider differential diagnoses including rare conditions; explains reasoning why a patient is or is not at risk for these conditions and demonstrates the ability to risk stratify presenting complaints by integrating data from the literature, the patient's presentation, and personal clinical experience
Level 5 <i>Pursues and integrates new and emerging knowledge</i>	<ul style="list-style-type: none"> ● Demonstrates a high degree of incorporation of evidence-based practice into personal body of knowledge; articulates how the evidence has been evaluated and how to apply it to a given patient ● Participates in scholarly activities focused on direct patient care
Assessment Models or Tools	<ul style="list-style-type: none"> ● Exercises ● Multiple choice exams ● Oral board simulations ● Simulations
Curriculum Mapping	<ul style="list-style-type: none"> ●
Notes or Resources	<ul style="list-style-type: none"> ● Tintinalli J, John OM, Yealy D, et al. <i>Tintinalli's Emergency Medicine: A Comprehensive Study Guide</i>. 9th ed. New York, NY: McGraw-Hill Education; 2019. ● Walls R, Hockberger R, Gausche-Hill M. <i>Rosen's Emergency Medicine: Concepts and Clinical Practice</i>. 9th ed. Philadelphia, PA: Elsevier; 2017.

- JAMAevidence. Users' Guides to the Medical Literature: A Manual for Evidence-Based Clinical Practice, 3rd ed. <https://jamaevidence.mhmedical.com/Book.aspx?bookId=847>. 2020.

Medical Knowledge 2: Treatment and Clinical Reasoning	
Overall Intent: To appropriately treat common and complex patients	
Milestones	Examples
<p>Level 1 <i>Demonstrates knowledge of treatment of common conditions</i></p> <p><i>Identifies types of clinical reasoning errors within patient care, with substantial guidance</i></p>	<ul style="list-style-type: none"> ● Discusses textbook answers about the treatments for common complaints and determines common medications but is unable to describe alternatives ● Is beginning to learn about physician cognition and has an awareness of cognitive errors but cannot yet describe how personal thinking may be influenced by these errors
<p>Level 2 <i>Demonstrates knowledge of treatment of patients with complex conditions</i></p> <p><i>Identifies types of clinical reasoning errors within patient care</i></p>	<ul style="list-style-type: none"> ● Incorporates more advanced knowledge beyond the textbook, as well as guidelines and expert opinion into the management of more advanced patient presentations ● Identifies potential cognitive errors and biases in patient management and recognizes how the influence of fatigue, hunger, and stress may contribute to reasoning errors ● Names common heuristics and cognitive errors
<p>Level 3 <i>Demonstrates knowledge of the impact of patient factors on treatment</i></p> <p><i>Applies clinical reasoning principles to retrospectively identify cognitive errors</i></p>	<ul style="list-style-type: none"> ● Risk-stratifies a complex patient by combining the history, exam, and risk factors; explains how these factors interrelate to impact treatment decisions and explains when a patient fits into guideline recommendations and when to act outside of guidelines ● Quickly reviews cases and determines what errors may have contributed; uncovers basic systems issues that contributed to the error ● Adapts treatment plan to address social determinants of health
<p>Level 4 <i>Demonstrates comprehensive knowledge of the varying patterns of disease presentation and alternative and adjuvant treatments of patients</i></p> <p><i>Continually re-appraises one's clinical reasoning to prospectively minimize cognitive errors and manage uncertainty</i></p>	<ul style="list-style-type: none"> ● Demonstrates the ability to critically evaluate emerging medical evidence and applies it to their patient at the bedside ● Determines whether a patient fits into an accepted treatment pathway and pursues a better course of treatment for a that patient; embraces uncertainty and appreciates how clinical reasoning is influenced by Bayesian logic, bias, and human cognition ● Regularly adjusts clinical reasoning after recognizing a cognitive error ● Demonstrates a high level of metacognition, recognizing where biases and mental state may contribute to error while also recognizing and seeking to correct systems-based issues that induce error-producing conditions
<p>Level 5 <i>Contributes to the body of knowledge on the varying patterns of disease presentation, and alternative and adjuvant treatments of patients</i></p>	<ul style="list-style-type: none"> ● Teaches others about potentially niche presentations ● Participates in research that explores particular disease entities

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<p><i>Coaches others to recognize and avoid cognitive errors</i></p>	<ul style="list-style-type: none"> ● Has a complex understanding of human cognition, including internal and external factors that contribute to cognitive errors ● Engages in scholarly activities that seek to better understand error ● Models best practices for reducing error ● Is sought by other residents to assist on difficult cases
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Medical record (chart) audit ● Multilevel feedback ● Multiple choice examinations ● Oral board simulations ● Reflective writing ● Simulation
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● Trowbridge R, Rencic J, Durning S. <i>Teaching Clinical Reasoning</i>. Philadelphia, PA: American College of Physicians; 2015. ● Croskerry P. From mindless to mindful practice--cognitive bias and clinical decision making. <i>N Engl J Med</i>. 2013;368:2445-2448. https://pubmed.ncbi.nlm.nih.gov/23802513/. 2020. ● Croskerry P, Petrie D, Reilly J, Tait G. Deciding about fast and slow decisions. <i>Acad Med</i>. 2014;89:197-200. https://pubmed.ncbi.nlm.nih.gov/24362398/. 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, families, and health care professionals	
Milestones	Examples
<p>Level 1 <i>Demonstrates knowledge of common patient safety events</i></p> <p><i>Demonstrates knowledge of how to report patient safety events</i></p>	<ul style="list-style-type: none"> ● Lists patient misidentification or medication errors as common patient safety events ● Describes how to report errors at own institution
<p>Level 2 <i>Identifies system factors that lead to patient safety events</i></p> <p><i>Reports patient safety events through institutional reporting systems (simulated or actual)</i></p>	<ul style="list-style-type: none"> ● Identifies lack of hand sanitizer dispenser at each clinical exam room may lead to increased infection rates ● Reports a near miss or medication error through the institutional reporting system
<p>Level 3 <i>Participates in analysis of patient safety events (simulated or actual)</i></p> <p><i>Participates in disclosure of patient safety events to patients and families (simulated or actual)</i></p>	<ul style="list-style-type: none"> ● Preparing for morbidity and mortality presentations ● Participates in an exercise to communicate with patients/families about a medication administration error
<p>Level 4 <i>Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)</i></p> <p><i>Discloses patient safety events to patients and families (simulated or actual)</i></p>	<ul style="list-style-type: none"> ● Collaborates with a team to conduct the analysis of a medication administration errors and can effectively communicate with patients/families about those events
<p>Level 5 <i>Actively engages teams and processes to modify systems for preventing patient safety events</i></p> <p><i>Acts as a role model and/or mentor for others in the disclosing of patient safety events</i></p>	<ul style="list-style-type: none"> ● Assumes a leadership role at the departmental or institutional level for patient safety ● Develops and conducts a simulation for disclosing patient safety events
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● E-module multiple choice tests ● Medical record (chart) audit ● Multisource feedback

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	<ul style="list-style-type: none">● Portfolio● Reflection● Simulation
Curriculum Mapping	<ul style="list-style-type: none">●
Notes or Resources	<ul style="list-style-type: none">● Institute of Healthcare Improvement. Open School. http://www.ihl.org/education/IHIOpenSchool/Pages/default.aspx. 2020.● Langley GJ, Moen RD, Nolan Km, et al. <i>The Improvement Guide: A Practical Approach to Enhancing Organizational Performance</i>. 2nd ed. San Francisco, CA: Jossey-Bass; 2009.

Systems-Based Practice 2: Quality Improvement	
Overall Intent: To conduct a quality improvement project	
Milestones	Examples
Level 1 <i>Demonstrates knowledge of basic quality improvement methodologies and metrics</i>	<ul style="list-style-type: none"> • Describes quality assurance analysis tool
Level 2 <i>Describes local quality improvement initiatives (e.g., emergency department throughput, testing turnaround times)</i>	<ul style="list-style-type: none"> • Summarizes protocols resulting in decreased spread of hospital-acquired <i>C. difficile</i>
Level 3 <i>Participates in local quality improvement initiatives</i>	<ul style="list-style-type: none"> • Participates in project identifying root cause analysis
Level 4 <i>Demonstrates the skills required for identifying, developing, implementing, and analyzing a quality improvement project</i>	<ul style="list-style-type: none"> • Participates in the completion of a quality improvement project to improve hepatitis and HIV screening within the department, including assessing the problem, articulating a broad goal, developing a SMART (Specific, Measurable, Attainable, Realistic, Time-bound) objective plan, and monitoring progress and challenges
Level 5 <i>Creates, implements, and assesses quality improvement initiatives at the institutional or community level</i>	<ul style="list-style-type: none"> • Initiates and completes a quality improvement project to improve hepatitis and HIV screening rates reported to the county health department
Assessment Models or Tools	<ul style="list-style-type: none"> • Direct observation • E-module multiple choice tests • Medical record (chart) audit • Multisource feedback • Portfolio • Reflection • Simulation
Curriculum Mapping	<ul style="list-style-type: none"> •
Notes or Resources	<ul style="list-style-type: none"> • Institute of Healthcare Improvement. Open School. http://www.ihl.org/education/IHIOpenSchool/Pages/default.aspx. 2020. • Langley GJ, Moen RD, Nolan Km, et al. <i>The Improvement Guide: A Practical Approach to Enhancing Organizational Performance</i>. 2nd ed. San Francisco, CA: Jossey-Bass; 2009.

Systems-Based Practice 3: System Navigation for Patient-Centered Care	
Overall Intent: To effectively navigate the health care system, including the interdisciplinary team and other care providers, to adapt care to a specific patient population to ensure high-quality patient outcomes	
Milestones	Examples
<p>Level 1 <i>Demonstrates knowledge of care coordination</i></p> <p><i>Identifies key elements for safe and effective transitions of care and hand-offs</i></p> <p><i>Demonstrates knowledge of population and community health needs</i></p>	<ul style="list-style-type: none"> ● For a patient with multiple myeloma, identifies the hematologist-oncologist, home health nurse, and social workers as members of the team ● Identifies the need to coordinate care in patients with complex problems such as chronic illness in the homeless ● Lists the essential components of a standardized hand-off tool and care transition ● Demonstrates ability to coordinate consultations on same and multiple patients ● Identifies that patients may lack adequate transportation, thus limiting their ability to make it to scheduled and follow-up appointments
<p>Level 2 <i>In routine clinical situations, effectively coordinates patient care integrating the roles of interprofessional teams</i></p> <p><i>In routine clinical situations, enables safe and effective transitions of care/hand-offs</i></p> <p><i>Identifies specific population and community health needs for their local population</i></p>	<ul style="list-style-type: none"> ● Coordinates care with the heart failure clinic at the time of discharge ● Routinely uses a standardized hand-off tool for a stable patient ● Mitigates problems related to limited transportation options for their patient getting to follow-up appointments through referral to medical transport, community paramedicine, and telemedicine
<p>Level 3 <i>In complex clinical situations, effectively coordinates patient care by integrating the roles of the interprofessional teams</i></p> <p><i>In complex clinical situations, enables safe and effective transitions of care/hand-offs</i></p> <p><i>Effectively uses local resources to meet the needs of a patient population and community</i></p>	<ul style="list-style-type: none"> ● Works with the social worker to coordinate care for a homeless patient that will ensure follow-up after discharge ● Routinely uses a standardized hand-off tool when transferring a patient to the ICU ● Refers patients to a local pharmacy which provides a sliding fee scale option and prints pharmacy coupons for patients in need
<p>Level 4 <i>Serves as a role model, effectively coordinates patient-centered care among different disciplines and specialties</i></p>	<ul style="list-style-type: none"> ● Coordinates care for home hospice follow-up

<p><i>Serves as a role model, advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems, including outpatient settings</i></p> <p><i>Participates in changing and adapting practice to provide for the needs of specific populations</i></p>	<ul style="list-style-type: none"> ● Prior to discharge, ensures that communication with primary provider is completed for urgent follow-up ● Assists to design emergency medicine practice protocols for prescribing naloxone to patients with opioid use disorders
<p>Level 5 <i>Analyzes the process of care coordination and leads in the design and implementation of improvements</i></p> <p><i>Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes</i></p> <p><i>Leads innovations and advocates for populations and communities with health care needs</i></p>	<ul style="list-style-type: none"> ● Leads a program to provide paramedicine care to high-risk heart failure patients ● Develops a protocol to improve transitions to long-term care facilities ● Leads development of telehealth diagnostic services
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Objective structured clinical examination (OSCE) ● Quality metrics and goals mined from EHRs ● Review of sign-out tools, use and review of checklists
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● CDC. Population Health Training in Place Program (PH-TIPP). https://www.cdc.gov/pophealthtraining/whatis.html. 2020. ● Kaplan KJ. In pursuit of patient-centered care. http://tissuepathology.com/2016/03/29/in-pursuit-of-patient-centered-care/#axzz5e7nSsAns. 2020. ● Skochelak SE, Hawkins RE, Lawson LE, Starr SR, Borkan J, Gonzalo JD. <i>AMA Education Consortium: Health Systems Science</i>. Elsevier; 2016.

Systems-Based Practice 4: Physician Role in Health Care Systems	
Overall Intent: To understand the physician’s role in the complex health care system and how to optimize the system to improve patient care and the health system’s performance	
Milestones	Examples
<p>Level 1 <i>Identifies key components of the complex health care system (e.g., hospital, skilled nursing facility, finance, personnel, technology)</i></p> <p><i>Describes basic health payment systems, including (e.g., government, private, public, uninsured care) practice models</i></p>	<ul style="list-style-type: none"> ● Articulates differences between skilled nursing and long-term care facilities ● Understands the impact of health plan coverage on prescription drugs for individual patients
<p>Level 2 <i>Describes how components of a complex health care system are interrelated, and how this impacts patient care</i></p> <p><i>Delivers care with consideration of each patient’s payment model (e.g., insurance type)</i></p> <p><i>Identifies basic knowledge domains required for medical practice (e.g., information technology, legal, billing, coding, financial, and personnel aspects)</i></p>	<ul style="list-style-type: none"> ● Explains that improving patient satisfaction impacts patient adherence ● Takes into consideration patient’s prescription drug coverage when choosing an antibiotic for treatment of pneumonia ● Recognizes that appropriate documentation can influence billing and coding
<p>Level 3 <i>Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)</i></p> <p><i>Engages patients in shared decision making, informed by each patient’s payment models</i></p> <p><i>Demonstrates efficient integration of information technology required for medical practice (e.g., electronic health record, documentation required for billing and coding)</i></p>	<ul style="list-style-type: none"> ● Ensures that patient with COPD has a scheduled follow-up appointment at discharge within seven days to reduce risk of readmission ● Discusses that insurance constraints may limit coverage for an MRI in the setting of low-risk acute low back pain ● Understands the core elements of employment contract negotiation
<p>Level 4 <i>Manages various components of the complex health care system to provide efficient</i></p>	<ul style="list-style-type: none"> ● Ensures proper documentation for qualifying inpatient admission versus observation

<p><i>and effective patient care and the transition of care</i></p> <p><i>Advocates for patient care needs with consideration of the limitations of each patient's payment model</i></p> <p><i>Describes core administrative knowledge needed for the transition to practice (e.g., contract negotiation, malpractice insurance, government regulation, compliance)</i></p>	<ul style="list-style-type: none"> • Works collaboratively to improve patient assistance resources for a patient needing medication assisted therapy to prevent future overdoses • Proactively compiles procedure log in anticipation of applying for hospital privileges
<p>Level 5 <i>Advocates for or leads systems change that enhances high value, efficient, and effective patient care, and the transition of care</i></p> <p><i>Participates in health policy advocacy activities</i></p> <p><i>Analyzes individual practice patterns and professional requirements</i></p>	<ul style="list-style-type: none"> • Works with community or professional organizations to advocate for no smoking ordinances • Helps to control the COVID-19 pandemic in the community by communicating the necessity of social distancing, the wearing of masks, and avoiding large groups • Improves informed consent process for non-English-speaking patients requiring interpreter services
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> • Direct observation • Medical record (chart) audit • Patient satisfaction data • Portfolio
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> •
<p>Notes or Resources</p>	<ul style="list-style-type: none"> • Center for Medicare and Medicaid Services. MACRA. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/MACRA-MIPS-and-APMs.html. 2020. • Agency for Healthcare Research and Quality (AHRQ). Measuring the Quality of Physician Care. https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/physician/challenges.html. 2020. • AHRQ. Major Physician Measurement Sets. https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/physician/measurementsets.html. 2020. • The Kaiser Family Foundation. www.kff.org. 2020. • The Kaiser Family Foundation: Topic: Health Reform. https://www.kff.org/topic/health-reform/. 2020. • Dzau VJ, McClellan M, Burke S, et al. Vital directions for health and health care: priorities from a National Academy of Medicine Initiative. <i>NAM Perspectives</i>. Discussion Paper,

National Academy of Medicine, Washington, DC. <https://nam.edu/vital-directions-for-health-health-care-priorities-from-a-national-academy-of-medicine-initiative/>. 2020.

- The Commonwealth Fund. Health System Data Center. http://datacenter.commonwealthfund.org/?_ga=2.110888517.1505146611.1495417431-1811932185.1495417431#ind=1/sc=1. 2020.
- The Commonwealth Fund. Health Reform Resource Center: [http://www.commonwealthfund.org/interactives-and-data/health-reform-resource-center#/f:@facasubcategoriesfacet63677=\[Individual%20and%20Employer%20Responsibility](http://www.commonwealthfund.org/interactives-and-data/health-reform-resource-center#/f:@facasubcategoriesfacet63677=[Individual%20and%20Employer%20Responsibility). 2020.
- Skochelak SE, Hawkins RE, Lawson LE, Starr SR, Borkan J, Gonzalo JD. *AMA Education Consortium: Health Systems Science*. Elsevier; 2016.

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice Overall Intent: To incorporate evidence and patient values into clinical practice	
Milestones	Examples
Level 1 <i>Demonstrates how to access and use available evidence</i>	<ul style="list-style-type: none"> ● Knows how to access and use health information, including accessing articles through the hospital library, using databases, such as UpToDate or ClinicalKey ● Has a basic understanding of the principles of evidence-based practice
Level 2 <i>Articulates the clinical questions that are necessary to guide evidence-based care</i>	<ul style="list-style-type: none"> ● Formulates patient oriented clinical questions and may take the form of PICO (Patient-Intervention-Control-Outcome); self-identifies areas of uncertainty and asks for help in answering clinical questions
Level 3 <i>Locates and applies the best available evidence, integrating it with patient preference, to the care of complex patients</i>	<ul style="list-style-type: none"> ● Demonstrates a high level of mastery with electronic tools applied to clinical practice ● Understands and appropriately uses clinical practice guidelines in making patient care decisions while eliciting patient preferences ● Adheres to department and institutional clinical care policies and processes
Level 4 <i>Critically appraises and applies evidence even in the face of uncertainty and of conflicting evidence to guide care that is tailored to the individual patient</i>	<ul style="list-style-type: none"> ● Has grown comfortable with the variability of medical evidence and demonstrates the ability to critically evaluate source data and merge the evidence with its application at the bedside ● Makes use of best evidence practices while also being able to define when and/or why to deviate from those standards
Level 5 <i>Coaches others to critically appraise and apply evidence for complex patients, and/or participates in the development of guidelines</i>	<ul style="list-style-type: none"> ● Participate as a member (or even leader) of local teams that are tasked with developing best practices in the context of the local institution; sought after by junior learners to teach them how to prepare for and present at journal club; leads clinical teaching on application of best practices in critical appraisal of sepsis criteria ● As part of a team, develops low risk chest pain protocol for the emergency department
Assessment Models or Tools	<ul style="list-style-type: none"> ● Direct observation ● Oral or written examinations ● Presentation evaluation ● Research portfolio
Curriculum Mapping	<ul style="list-style-type: none"> ●
Notes or Resources	<ul style="list-style-type: none"> ● National Institutes of Health. Write Your Application. https://grants.nih.gov/grants/how-to-apply-application-guide/format-and-write/write-your-application.htm. 2020. ● U.S. National Library of Medicine. PubMed Tutorial. https://www.nlm.nih.gov/bsd/disted/pubmedtutorial/cover.html. 2020. ● Institutional Institutional Review Board (IRB) guidelines ● Various journal submission guidelines

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth Overall Intent: To seek clinical performance information with the intent to improve care; reflects on all domains of practice, personal interactions, and behaviors, and their impact on colleagues and patients (reflective mindfulness); develop clear objectives and goals for improvement in some form of a learning plan	
Milestones	Examples
Level 1 <i>Demonstrates an openness to performance data (feedback and other input)</i>	<ul style="list-style-type: none"> ● Accepts feedback ● When discussing goals for a shift, identifies areas in need of improvement from prior feedback and sets appropriate learning goals ● Asks for feedback from the attending physician at the end of the shift
Level 2 <i>Demonstrates an openness to performance data and uses it to develop personal and professional goals</i> <i>Identifies the factors that contribute to the gap(s) between expectations and actual performance</i>	<ul style="list-style-type: none"> ● After receiving a metric report putting the resident in the bottom quartile for throughput, discusses possible reasons with mentor(s) and begins to implement suggested changes ● Assesses time management skills and how it impacts timely completion of clinic notes and literature reviews ● Demonstrates understanding of performance gaps when completing self-evaluation
Level 3 <i>Seeks and accepts performance data for developing personal and professional goals</i> <i>Analyzes and reflects upon the factors that contribute to gap(s) between expectations and actual performance</i>	<ul style="list-style-type: none"> ● Using web-based resources, creates a personal curriculum to improve own evaluation of patients with chest pain ● Participates in quality assurance and process improvement activities related to own performance
Level 4 <i>Using performance data, continually improves and measures the effectiveness of one's personal and professional goals</i> <i>Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance</i>	<ul style="list-style-type: none"> ● Uses performance metrics to determine CT use for minor head injuries; creates an improvement plan to decrease CT use ● After patient encounter, debriefs with the attending and other patient care team members to optimize future collaboration in the care of the patient and family ● Performs a chart audit on personal documentation of the resident's evaluation of patients with chest pain
Level 5 <i>Acts as a role model for the development of personal and professional goals</i> <i>Coaches others on reflective practice</i>	<ul style="list-style-type: none"> ● Models practice improvement and adaptability ● Develops educational module for collaboration with other patient care team members ● Assists first-year residents in developing their individualized learning plans
Assessment Models or Tools	<ul style="list-style-type: none"> ● Chart stimulated recall ● Direct observation

	<ul style="list-style-type: none"> ● Review of learning plan
Curriculum Mapping	<ul style="list-style-type: none"> ●
Notes or Resources	<ul style="list-style-type: none"> ● Burke AE, Benson B, Englander R, Carraccio C, Hicks PJ. Domain of competence: practice-based learning and improvement. <i>Acad Pediatr.</i> 2014;14: S38-S54. https://www.academicpedsjnl.net/article/S1876-2859(13)00333-1/fulltext. 2020. ● Hojat M, Veloski JJ, Gonnella JS. Measurement and correlates of physicians' lifelong learning. <i>Academic Medicine.</i> 2009;84(8):1066-1074. https://journals.lww.com/academicmedicine/fulltext/2009/08000/Measurement_and_Correlates_of_Physicians_Lifelong.21.aspx. 2020. ● Lockspeiser TM, Schmitter PA, Lane JL, Hanson JL, Rosenberg AA, Park YS. Assessing residents' written learning goals and goal writing skill: validity evidence for the learning goal scoring rubric. <i>Academic Medicine.</i> 2013;88(10):1558-1563. https://journals.lww.com/academicmedicine/fulltext/2013/10000/Assessing_Residents_Written_Learning_Goals_and.39.aspx. 2020.

Professionalism 1: Professional Behavior and Ethical Principles	
Overall Intent: To recognize and address lapses in ethical and professional behavior, demonstrates ethical and professional behaviors, and use appropriate resources for managing ethical and professional dilemmas	
Milestones	Examples
<p>Level 1 <i>Demonstrates professional behavior in routine situations and in how to report professionalism lapses</i></p> <p><i>Demonstrates knowledge of the ethical principles underlying patient care</i></p>	<ul style="list-style-type: none"> ● Understands that being tired can cause a lapse in professionalism ● Understands being late has adverse effect on patient care and on professional relationships ● Articulates how the principle of “do no harm” applies to a patient who may not need a central line even though the training opportunity exists ● Recognizes that ethical principles should stop a resident from obtaining informed consent if they are unclear of all the risks of a procedure
<p>Level 2 <i>Identifies and describes potential triggers and takes responsibility for professionalism lapses</i></p> <p><i>Analyzes straightforward situations using ethical principles</i></p>	<ul style="list-style-type: none"> ● Respectfully approaches a resident who is late about the importance of being on time ● Notifies appropriate supervisor when a resident is routinely late ● Applies ethical principles to: informed consent, surrogate decision making, advance directives, confidentiality, error disclosure, stewardship of limited resources, and related topics
<p>Level 3 <i>Exhibits professional behavior in complex and/or stressful situations</i></p> <p><i>Analyzes complex situations using ethical principles, and recognizes the need to seek help in managing and resolving them</i></p>	<ul style="list-style-type: none"> ● Appropriately responds to a distraught family member following an unsuccessful resuscitation attempt of a relative ● After noticing a colleague’s inappropriate social media post that included patient-related information, reviews policies related to posting of content and seeks guidance ● Offers treatment options for a patient, free of bias, while recognizing own limitations and consistently honoring the patient’s choice
<p>Level 4 <i>Sets apart those situations that might trigger professionalism lapses and intervenes to prevent them in oneself and others</i></p> <p><i>Uses appropriate resources for managing and resolving ethical dilemmas</i></p>	<ul style="list-style-type: none"> ● Actively considers the perspectives of others ● Models respect for patients and promotes the same from colleagues when a patient has been waiting an excessively long time to be seen ● Recognizes and uses ethics consults, literature, risk-management/legal counsel to resolve ethical dilemmas
<p>Level 5 <i>Coaches others when their behavior fails to meet professional expectations</i></p>	<ul style="list-style-type: none"> ● Coaches others when their behavior fails to meet professional expectations and creates a performance improvement plan to prevent recurrence

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<p><i>Identifies and addresses system-level factors that either induce or exacerbate ethical problems or impede their resolution</i></p>	<ul style="list-style-type: none"> ● Engages stakeholders to address excessive wait times in the emergency room to decrease patient and provider frustrations that lead to unprofessional behavior
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Global evaluation ● Multisource feedback ● Oral or written self-reflection ● Simulation
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● ACEP. Code of Ethics for Emergency Physicians. https://www.acep.org/patient-care/policy-statements/code-of-ethics-for-emergency-physicians/. 2020. ● American Medical Association. Ethics. https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. 2020. ● American Board of Internal Medicine, ACP-ASIM Foundation, European Federation of Internal Medicine. Medical professionalism in the new millennium: a physician charter. <i>Ann Intern Med</i>. 2002;136:243-246. http://abimfoundation.org/wp-content/uploads/2015/12/Medical-Professionalism-in-the-New-Millennium-A-Physician-Charter.pdf. 2020. ● Bynny RL, Paauw DS, Papadakis MA, Pfeil S. <i>Medical Professionalism. Best Practices: Professionalism in the Modern Era</i>. Menlo Park, CA: Alpha Omega Alpha Medical Society; 2017. ISBN: 978-1-5323-6516-4 ● Levinson W, Ginsburg S, Hafferty FW, Lucey CR. <i>Understanding Medical Professionalism</i>. New York, NY: McGraw-Hill Education; 2014.

Professionalism 2: Accountability/Conscientiousness Overall Intent: To take responsibility for one’s own actions and the impact on patients and other members of the health care team	
Milestones	Examples
<p>Level 1 <i>In routine situations, performs tasks and responsibilities with appropriate attention to detail</i></p> <p><i>Responds promptly to requests and reminders to complete tasks and responsibilities</i></p>	<ul style="list-style-type: none"> ● Completes work hour logs in a timely manner ● Timely attendance at conferences ● Completes end-of-rotation evaluations
<p>Level 2 <i>In routine situations, performs tasks and responsibilities in a timely manner with appropriate attention to detail</i></p> <p><i>Takes responsibility for failure to complete tasks and responsibilities</i></p>	<ul style="list-style-type: none"> ● Completes administrative tasks, documents safety modules, procedure review, and licensing requirements by specified due date ● Receives reminder from program administrator to complete delinquent charts and responds promptly
<p>Level 3 <i>In complex or stressful situations, performs tasks and responsibilities in a timely manner with appropriate attention to detail</i></p> <p><i>Recognizes situations that might impact one’s own ability to complete tasks and responsibilities in a timely manner, and describes strategies for ensuring timely task completion in the future</i></p>	<ul style="list-style-type: none"> ● Notifies attending when clinical workload exceeds their capability ● In preparation for being away from the hospital ensures chart completion and other program responsibilities
<p>Level 4 <i>Recognizes situations that might impact others’ ability to complete tasks and responsibilities</i></p> <p><i>Proactively implements strategies to ensure that the needs of patients, teams, and systems are met</i></p>	<ul style="list-style-type: none"> ● Ensures timely completion of professional requirements for clinical practice to ensure continuation of hospital privileges ● Organizes a pre-shift huddle with staff members and physicians to set goals for the shift to ensure all needs are met
<p>Level 5 <i>Takes ownership of system outcomes</i></p>	<ul style="list-style-type: none"> ● Sets up a meeting with the nurse manager to streamline patient discharges and leads team to find solutions to the problem
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Compliance with deadlines and timelines ● Direct observation ● Global evaluations

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	<ul style="list-style-type: none">• Multisource feedback• Self-evaluations and reflective tools• Simulation
Curriculum Mapping	<ul style="list-style-type: none">•
Notes or Resources	<ul style="list-style-type: none">• ACEP. Code of Ethics for Emergency Physicians. https://www.acep.org/patient-care/policy-statements/code-of-ethics-for-emergency-physicians/. 2020.• Code of conduct from fellow/resident institutional manual• Expectations of residency program regarding accountability and professionalism

Professionalism 3: Self-Awareness and Well-Being	
Overall Intent: To identify, use, manage, improve, and seek help for personal and professional well-being for self and others	
Milestones	Examples
Level 1 <i>Recognizes, with assistance, the status of one’s personal and professional well-being</i>	<ul style="list-style-type: none"> ● Acknowledges own response to work-life balance ● Accesses self-assessment tools
Level 2 <i>Independently recognizes the status of one’s personal and professional well-being and engages in help-seeking behaviors</i>	<ul style="list-style-type: none"> ● Independently identifies and communicates impact of a personal family tragedy
Level 3 <i>With assistance, proposes a plan to optimize personal and professional well-being</i>	<ul style="list-style-type: none"> ● With the multidisciplinary team, develops a reflective response to deal with personal impact of difficult patient encounters and disclosures
Level 4 <i>Independently develops a plan to optimize one’s personal and professional well-being</i>	<ul style="list-style-type: none"> ● Independently identifies ways to manage personal stress
Level 5 <i>Coaches others when their emotional responses or level of knowledge/skills fail to meet professional expectations</i>	<ul style="list-style-type: none"> ● Assists in organizational efforts to address clinician well-being after patient diagnosis/prognosis/death
Assessment Models or Tools	<ul style="list-style-type: none"> ● Direct observation ● Group interview or discussions for team activities ● Individual interview ● Institutional online training modules or assessment tools ● Self-assessment and personal learning plan
Curriculum Mapping	<ul style="list-style-type: none"> ●
Notes or Resources	<ul style="list-style-type: none"> ● This subcompetency is not intended to evaluate a resident’s well-being, but to ensure each resident has the fundamental knowledge of factors that impact well-being, the mechanisms by which those factors impact well-being, and available resources and tools to improve well-being. ● Local resources, including Employee Assistance ● Hicks PJ, Schumacher D, Guralnick S, Carraccio C, Burke AE. Domain of competence: personal and professional development. <i>Acad Pediatr.</i> 2014;14(2 Suppl):S80-97. https://www.sciencedirect.com/science/article/abs/pii/S187628591300332X. 2020. ● ACGME. Tools and Resources. https://www.acgme.org/What-We-Do/Initiatives/Physician-Well-Being/Resources. 2020.

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication	
Overall Intent: To deliberately use language and behaviors to form constructive relationships with patients, to identify communication barriers including self-reflection on biases, and minimize them in the doctor-patient relationships; organize and lead communication around shared decision making	
Milestones	Examples
<p>Level 1 <i>Uses language and non-verbal behavior to reflect respect and establish rapport while accurately communicating one’s own role within the health care system</i></p> <p><i>Identifies common barriers to effective communication (e.g., language, disability)</i></p> <p><i>With insight gained through an assessment of patient/family expectations coupled with an understanding of their health status and treatment options, adjusts one’s communication strategies</i></p>	<ul style="list-style-type: none"> ● Introduces self and faculty member, identifies patient and others in the room, and engages all parties in health care discussion ● Identifies need for and uses a trained interpreter with non-English-speaking patients ● Uses age-appropriate language when discussing vaccinations with pediatric patients
<p>Level 2 <i>Establishes a therapeutic relationship in straightforward encounters with patients using active listening and clear language</i></p> <p><i>Identifies complex barriers to effective communication (e.g., health literacy, technology)</i></p> <p><i>Organizes and initiates communication with a patient/family by clarifying expectations and verifying one’s understanding of the clinical situation</i></p>	<ul style="list-style-type: none"> ● Avoids medical jargon and restates patient/parent perspective when discussing antibiotics versus wait and see for a child with acute otitis media ● Recognizes the need for handouts with diagrams and pictures to communicate information to a patient who is unable to read; simplifies discharge instructions because they were written at a level that could not be understood by the patient ● Clarifies with the patient and family goals for today’s emergency department visit for low back pain ● Ask the patient to explain their understanding of the disease process after your explanation
<p>Level 3 <i>Establishes a therapeutic relationship in challenging patient encounters</i></p> <p><i>When prompted, reflects on biases, while attempting to minimize communication barriers</i></p>	<ul style="list-style-type: none"> ● Acknowledges patient’s request for an MRI for new onset back pain; based on history and physical examination failing to demonstrate significant potential morbidity, educates patient about a stepwise approach with need for follow-up care and evaluation ● In a discussion with the faculty member, acknowledges concern in caring for a patient with COPD who continues to smoke

<p><i>With guidance, sensitively and compassionately delivers medical information to patients, elicits patient/family values, learns their goals and preferences, and acknowledges uncertainty and conflict</i></p>	<ul style="list-style-type: none"> ● Acknowledges the difficulty in taking care of patients with multiple visits and the need to give each visit full attention ● Consults family to determine goals and a plan of care for a terminally ill patient
<p>Level 4 <i>Easily establishes therapeutic relationships with patients, regardless of the complexity of cases</i></p> <p><i>Independently recognizes biases of patients, while attempting to proactively minimize communication barriers</i></p> <p><i>Independently uses shared decision making with a patient/family to align their values, goals, and preferences with potential treatment options and ultimately to achieve a personalized care plan</i></p>	<ul style="list-style-type: none"> ● Engages representative family members with disparate goals in the care of a patient with dementia ● Recognizes potential bias of a patient family member related to a lung cancer death of another family member and acknowledges their concerns ● Uses patient and family input to engage palliative care and develop a plan for home hospice in the terminally ill patient, aligned with the patient's values ● Leads a discussion with team and family members around withdrawal of care
<p>Level 5 <i>Acts as a mentor to others in situational awareness and critical self-reflection with the aim of consistently developing positive therapeutic relationships and minimizing communication barriers</i></p> <p><i>Acts as a role model to exemplify shared decision making in patient/family communication that embodies various degrees of uncertainty/conflict</i></p>	<ul style="list-style-type: none"> ● Leads a discussion group on personal experience of ethical distress ● Serves on a hospital bioethics committee ● Leads the team debrief after a critical incident
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Kalamazoo Essential Elements Communication Checklist (Adapted) ● OSCE ● Self-assessment including self-reflection exercises ● Skills needed to Set the state, Elicit information, Give information, Understand the patient, and End the encounter (SEGUE) ● Standardized patients

Curriculum Mapping	<ul style="list-style-type: none"> •
Notes or Resources	<ul style="list-style-type: none"> • Laidlaw A, Hart J. Communication skills: an essential component of medical curricula. Part I: Assessment of clinical communication: AMEE Guide No. 51. <i>Med Teach</i>. 2011;33(1):6-8. https://www.tandfonline.com/doi/full/10.3109/0142159X.2011.531170. 2020. • Makoul G. Essential elements of communication in medical encounters: the Kalamazoo consensus statement. <i>Acad Med</i>. 2001;76(4):390-393. https://journals.lww.com/academicmedicine/Fulltext/2001/04000/Essential_Elements_of_Communication_in_Medical.21.aspx#pdf-link. 2020. • Makoul G. The SEGUE Framework for teaching and assessing communication skills. <i>Patient Educ Couns</i>. 2001;45(1):23-34. https://www.sciencedirect.com/science/article/abs/pii/S0738399101001367?via%3Dihub. 2020. • Symons AB, Swanson A, McGuigan D, Orange S, Akl EA. A tool for self-assessment of communication skills and professionalism in residents. <i>BMC Med Educ</i>. 2009;9:1. https://bmcmmededuc.biomedcentral.com/articles/10.1186/1472-6920-9-1. 2020.

Interpersonal and Communication Skills 2: Interprofessional and Team Communication Overall Intent: To effectively communicate with the health care team, including consultants, in both straightforward and complex situations	
Milestones	Examples
<p>Level 1 <i>Respectfully requests a consultation</i></p> <p><i>Uses language that reflects the values all members of the health care team</i></p> <p><i>Receives feedback in a respectful manner</i></p>	<ul style="list-style-type: none"> ● When speaking to a consultant, introduces self and is polite ● Acknowledges the contribution of each member of the emergency department team to the patient ● Acknowledges areas in need of improvement communicated to them by members of the health care team ● Requests single service consultation in a non-complicated patient
<p>Level 2 <i>Clearly and concisely requests a consultation or other resources for patient care</i></p> <p><i>Communicates information effectively with all health care team members</i></p> <p><i>Solicits feedback on performance as a member of the health care team</i></p>	<ul style="list-style-type: none"> ● Communicates patient information to the consultant concisely and clearly setting out what is being requested from the service at the end of the consultation ● Shares which consult services have been requested as well as the consultant recommendations with all members of the health care team ● Asks for feedback from the supervising physicians or nursing staff members regarding performance after a patient care encounter
<p>Level 3 <i>Integrates recommendations made by various members of the health care team to optimize patient care</i></p> <p><i>Engages in active listening to adapt to the communication styles of the team</i></p> <p><i>Communicates concerns and provides feedback to peers and learners</i></p>	<ul style="list-style-type: none"> ● After a consultation has been completed, collaborates with the emergency department care team to evaluate and integrate consult recommendations in the patient's treatment plan ● Explains consultant recommendations with the patient and hears concerns regarding treatment options ● Suggests areas for improvement to team members and includes multiple resources for performance enhancement
<p>Level 4 <i>Acts as a role model for flexible communication strategies, i.e., those strategies that value input from all health care team members and that resolve conflict when needed</i></p> <p><i>Uses effective communication to lead or manage health care teams</i></p>	<ul style="list-style-type: none"> ● Mediates conflict and difficult dialogue when multiple practitioners are collaborating on care for a multi-system trauma patient with a closed head injury, pneumothorax, and vascular injury ● Uses closed-loop communication during the management of cardiac arrest and resuscitations

<p><i>Communicates feedback and constructive criticism to superiors</i></p>	<ul style="list-style-type: none"> ● Informs the emergency department director and/or nurse manager about obstacles to patient flow and suggests ways to overcome the issues
<p>Level 5 Acts as a role model for communication skills necessary to lead or manage health care teams</p> <p><i>In complex situations, facilitates regular health care team-based feedback</i></p>	<ul style="list-style-type: none"> ● Presents at conferences regarding effective communication and conflict mediation styles ● Coaches others in conflict mediation styles ● Organizes and leads a multidisciplinary meeting to organize an optimal care plan for an emergency department high-volume user
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Global assessment ● Medical record (chart) audit ● Multisource feedback ● Simulation
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● Green M, Parrott T, Cook G., Improving your communication skills. <i>BMJ</i>. 2012;344:e357. https://www.bmj.com/content/344/bmj.e357. 2020. ● Henry SG, Holmboe ES, Frankel RM. Evidence-based competencies for improving communication skills in graduate medical education: a review with suggestions for implementation. <i>Med Teach</i>. 2013;35(5):395-403. https://www.tandfonline.com/doi/full/10.3109/0142159X.2013.769677. 2020. ● Roth CG, Eldin KW, Padmanabhan V, Freidman EM. Twelve tips for the introduction of emotional intelligence in medical education. <i>Med Teach</i>. 2019;41(7):1-4. https://www.tandfonline.com/doi/full/10.1080/0142159X.2018.1481499. 2020. ● François J. Tool to assess the quality of consultation and referral request letters in family medicine. <i>Can Fam Physician</i>. 2011;57(5):574-575. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3093595/. 2020. ● Fay D, Mazzone M, Douglas L, Ambuel B. A validated, behavior-based evaluation instrument for family medicine residents. <i>MedEdPORTAL</i>. 2007. https://www.mededportal.org/doi/10.15766/mep_2374-8265.622. 2020. ● Dehon E, Simpson K, Fowler D, Jones A. Development of the faculty 360. <i>MedEdPORTAL</i>. 2015;11:10174. http://doi.org/10.15766/mep_2374-8265.10174. 2020. ● Lane JL, Gottlieb RP. Structured clinical observations: a method to teach clinical skills with limited time and financial resources. <i>Pediatrics</i>. 2000;105:973-7. https://pubmed.ncbi.nlm.nih.gov/10742358/. 2020.

- Braddock CH, Edwards KA, Hasenberg NM, Laidley TL, Levinson W. Informed decision making in outpatient practice: time to get back to basics. *JAMA*. 1999;282:2313-2320. <https://pubmed.ncbi.nlm.nih.gov/10612318/>. 2020.

Interpersonal and Communication Skills 3: Communication within Health Care Systems Overall Intent: To effectively communicate using a variety of methods	
Milestones	Examples
<p>Level 1 <i>Accurately documents information in the patient’s record and safeguards the patient’s personal information</i></p> <p><i>Communicates through appropriate channels as required by institutional policy (e.g., patient safety reports, cell phone/pager usage)</i></p>	<ul style="list-style-type: none"> ● Documentation is accurate but may include extraneous information ● Shreds patient list after rounds; avoids talking about patients in the elevator ● Knows how to report patient safety concerns
<p>Level 2 <i>Demonstrates organized diagnostic and therapeutic reasoning through the patient record in a timely manner</i></p> <p><i>Respectfully communicates concerns about the system</i></p>	<ul style="list-style-type: none"> ● Organized and accurate documentation outlines clinical reasoning that supports the treatment plan ● Recognizes that a communication breakdown has happened and respectfully brings the breakdown to the attention of the chief resident or faculty member
<p>Level 3 <i>Concisely reports diagnostic and therapeutic reasoning in the patient record</i></p> <p><i>Uses appropriate channels to offer clear and constructive suggestions for improving the system</i></p>	<ul style="list-style-type: none"> ● Complex clinical thinking is documented concisely but may not contain anticipatory guidance ● Calls patient immediately about a discrepant radiology result ● Knows when to direct concerns locally, departmentally, or institutionally, i.e., appropriate escalation
<p>Level 4 <i>Communicates clearly, concisely, and contemporaneously in an organized written form, including anticipatory guidance</i></p> <p><i>Initiates difficult conversations with appropriate stakeholders to improve the system</i></p>	<ul style="list-style-type: none"> ● Documentation is consistently accurate, organized, and concise, and frequently incorporates anticipatory guidance ● Talks directly to the referring physician about breakdowns in communication in order to prevent recurrence
<p>Level 5 <i>Models feedback to improve others’ written communication</i></p> <p><i>Facilitates dialogue regarding systems issues among larger community stakeholders (e.g., institution, the health care system, and/or the field)</i></p>	<ul style="list-style-type: none"> ● Leads a task force established by the hospital quality improvement committee to develop a plan to improve house staff hand-offs ● Notes are exemplary and used to teach others ● Meaningfully participates in a committee to examine community emergency response systems including psychiatric emergencies

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Assessment Models or Tools	<ul style="list-style-type: none"> ● Direct observation ● Medical record (chart) audit ● Multisource feedback
Curriculum Mapping	<ul style="list-style-type: none"> ●
Notes or Resources	<ul style="list-style-type: none"> ● Bierman JA, Hufmeyer KK, Liss DT, Weaver AC, Heiman HL. Promoting responsible electronic documentation: validity evidence for a checklist to assess progress notes in the electronic health record. <i>Teach Learn Med.</i> 2017 Oct-Dec;29(4):420-432. ● Starmer, Amy J., et al. I-pass, a mnemonic to standardize verbal handoffs. <i>Pediatrics.</i> 2012;129.2:201-204. https://pubmed.ncbi.nlm.nih.gov/22232313/. 2020. ● Haig, K.M., Sutton, S., Whittington, J. SBAR: a shares mental model for improving communications between clinicians. <i>Jt Comm J Qual Patient Saf.</i> 2006 Mar;32(3):167-75. https://pubmed.ncbi.nlm.nih.gov/16617948/. 2020. ● VirtualSmarts. Crucial Moments in Healthcare. https://www.vitalsmarts.com/healthcare/. 2020.

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To help programs transition to the new version of the Milestones, the original Milestones 1.0 have been mapped to the new Milestones 2.0; it is indicated if subcompetencies are similar between versions. These are not exact matches but include some of the same 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: Emergency Stabilization	PC1: Emergency Stabilization
PC2: Performance of Focused History and Physical Exam	PC2: Performance of Focused History and Physical Exam
PC3: Diagnostic Studies	PC3: Diagnostic Studies
PC4: Diagnosis	PC4: Diagnosis
PC5: Pharmacotherapy	PC5: Pharmacotherapy
PC6: Observation and Reassessment	PC6: Reassessment and Disposition
PC7: Disposition	PC6: Reassessment and Disposition
PC8: Multi-tasking	PC7: Multitasking
PC9: General Approach to Procedures	PC8: General Approach to Procedures
PC10: Airway Management	PC8: General Approach to Procedures
PC11: Anesthesia and Acute Pain Management	PC8: General Approach to Procedures
PC12: Other Diagnostic and Therapeutic Procedures: Goal-directed Focused Ultrasound	PC8: General Approach to Procedures
PC13: Other Diagnostic and Therapeutic Procedures: Wound Management	PC8: General Approach to Procedures
PC14: Other Diagnostic and Therapeutic Procedures: Vascular Access	PC8: General Approach to Procedures
MK1: Medical Knowledge	MK1: Scientific Knowledge
	MK2: Treatment and Clinical Reasoning
SBP1: Patient Safety	SBP1: Patient Safety
	SBP2: Quality Improvement
SBP2: Systems-based Management	SBP3: System Navigation for Patient-Centered Care SBP4: Physician Role in Health Care Systems
SBP3: Technology	ICS3: Communication within Health Care Systems
PBL11: Practice-based Performance Improvement	PBL11: Evidence-Based and Informed Practice
	PBL12: Reflective Practice and Commitment to Personal Growth

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PROF1: Professional values	PROF1: Professional Behavior and Ethical Principles
PROF2: Accountability	PROF2: Accountability/Conscientiousness
	PROF3: Self-Awareness and Well-Being
ICS1: Patient Centered Communication	ICS1: Patient- and Family-Centered Communication
ICS2: Team Management	ICS2: Interprofessional and Team Communication

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/>