Supplemental Guide:
Physical Medicine and Rehabilitation
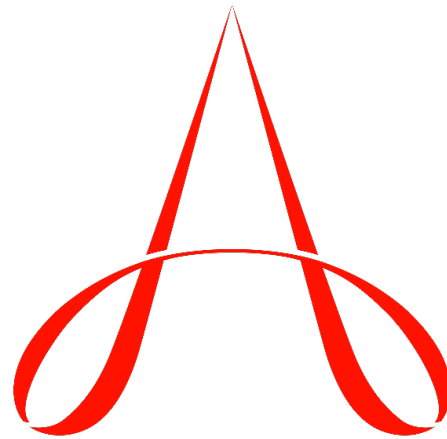
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Milestones Supplemental Guide

This document provides additional guidance and examples for the Physical Medicine and Rehabilitation 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: Physiatric History, Appropriate for Age and Impairment	
Overall Intent: To obtain a thorough and highly relevant medical history with focus on function and other physiatric elements	

Milestones	Examples
Level 1 *Acquires a history with a basic functional and psychosocial assessment*	● While admitting a patient, elicits a history that includes a recent embolic stroke with hemiparesis, depression, and an inability to walk independently
Level 2 *Acquires a comprehensive physiatric history identifying all components of functioning including impairments, activities, participation, and contextual factors*	● When admitting a patient with stroke, identifies difficulty in walking that limits the ability to visit his children who live in a second-floor walk-up apartment
Level 3 *Acquires a relevant history in a prioritized fashion, integrating components of functioning*	● When admitting a patient with stroke to acute rehabilitation, identifies multiple comorbidities, including cardiomyopathy and knee osteoarthritis, which may interfere with rehabilitation for hemiparesis ● For a patient with a history of Parkinson's disease, takes a history that elicits anxiety and fatigue as the most functionally relevant symptoms impacting activity tolerance and quality of life
Level 4 *Elicits key history, including subtleties, in a prioritized and efficient fashion across a spectrum of ages and impairments*	● Elicits the sexual history of a 68-year-old patient who developed an ataxic gait to avoid missing a potential diagnosis of neurosyphilis ● Elicits a history of a high school cross country athlete with a new stress fracture that includes the addition of hill running to her training regimen
Level 5 *Role models the effective gathering of subtle and salient history from patients across a spectrum of ages and impairments*	● Is asked to present to the medical student class on how to take a physiatric history ● Helps a more junior resident to prioritize the elements of taking a patient history ● Teaches a junior resident how to use the framework of the International Classification of Functioning in eliciting a functional history
Assessment Models or Tools	● Chart review / audit ● Direct observation ● Objective structured clinical examination (OSCE)
Curriculum Mapping	●
Notes or Resources	● Textbooks

Patient Care 2: Physical Examination	
Overall Intent: To efficiently perform a hypothesis-driven physiatric examination that identifies subtle or atypical findings over a spectrum of ages and impairments	
Milestones	**Examples**
Level 1 *Performs a general physical examination*	● Performs an accurate heart and lung exam in a stroke survivor with new cough ● Identifies the presence of a murmur during a pre-participation physical
Level 2 *Performs a physiatric examination, including functional assessment*	● Assesses a patient after a stroke, including neurologic, cognitive, and musculoskeletal systems; assesses a patient's ability to move from sit to stand ● Includes a comprehensive evaluation of the shoulder and neck and its impact on the patient's daily activities during an outpatient evaluation for shoulder pain
Level 3 *Performs a hypothesis-driven physiatric examination, with identification of subtle or atypical findings*	● Identifies nystagmus to make a presumptive diagnosis of multiple sclerosis for a patient with new onset of lower extremity weakness and hyperreflexia
Level 4 *Efficiently performs a hypothesis-driven physiatric examination that identifies subtle or atypical findings over a spectrum of ages and impairments*	● Performs a comprehensive examination for a 12-year-old patient with C4 AISA B SCI that includes considerations for development, respiratory function, and spasticity ● Performs a comprehensive examination for a 70-year-old patient with Parkinson's disease that includes functional gait evaluation and mental status that is completed efficiently
Level 5 *Role models a hypothesis-driven physiatric examination that identifies subtle or atypical findings over a spectrum of ages and impairments*	● Is selected to lead a workshop on neuromusculoskeletal examination of adults and children
Assessment Models or Tools	● Chart review ● Direct observation ● OSCE ● Patient feedback ● Peer feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● Physiatric examination is defined as examination to guide the rehabilitation management

Patient Care 3: Medical Management (e.g., Inpatient, Outpatient, Consultative Settings)	
Overall Intent: To develop and implement a comprehensive treatment plan that anticipates, identifies, and addresses potential complications related to neurological and musculoskeletal disorders over a spectrum of ages, conditions, and settings	
Milestones	**Examples**
Level 1 *Identifies and manages general medical conditions and their complications*	● Identifies poorly controlled diabetes as a significant medical issue for a patient on the inpatient rehabilitation service, and orders a diabetic diet, prescribes a sliding scale for insulin, and requests an endocrinology consultation to assist with management
Level 2 *Identifies and manages complications related to complex medical, neurological, and musculoskeletal disorders*	● Identifies an evolving wrist flexion contracture in an individual who comes to the outpatient clinic for a follow-up four months after a middle cerebral artery stroke, and institutes a treatment program to restore range of motion
Level 3 *Develops and implements a comprehensive treatment plan that anticipates and addresses complications related to neurological and musculoskeletal disorders*	● Performs a consultation on a patient who has undergone a transtibial amputation, documents detailed and appropriate management of the residual limb to promote healing and prevent skin breakdown, and (with permission from the primary service) places orders to initiate the treatment plan ● After evaluating a patient who is being admitted to the acute rehabilitation unit for comprehensive treatment after a subarachnoid hemorrhage, enters a complete order set that includes preventative measures for pneumonia, joint contracture, skin breakdown, and deep vein thrombosis
Level 4 *Develops and implements a comprehensive treatment plan that anticipates, identifies, and addresses complications related to neurological and musculoskeletal disorders over a spectrum of ages and conditions*	● Identifies and manages stroke related impairments in pediatric and adult patients and is able to implement preventative measures to minimize secondary complications. ● Develops and implements a treatment plan for a 78-year-old woman who presents to the outpatient clinic after an emergency department visit in which she was found to have an L1 stable osteoporotic compression fracture; the plan includes judicious use of analgesics, management of constipation, prescription for a comfortable lumbo-thoracic orthosis, gentle mobilization with physical therapy, and close follow-up
Level 5 *Role models the development and implementation of a comprehensive treatment plan including consideration of emerging treatments*	● Is observed by a more junior resident while educating a patient in well-established and emerging options for management of the motor and non-motor symptoms related to his Parkinson's disease, including evidence-based exercise recommendations ● Is asked to lead a workshop on the evaluation and management of lumbar stenosis, including the evidence-basis for emerging surgical interventions
Assessment Models or Tools	● Chart review ● Chart stimulated recall ● Direct observation ● OSCE ● Simulation ● Written or oral examinations
Curriculum Mapping	●

Notes or Resources	● Textbooks
	● Clinical guidelines

Patient Care 4: Procedural Skills: Injections for Abnormalities of Tone or Movement (e.g., Chemodenervation, Neurolysis) Performed under Guidance (e.g., Anatomic, Electromyography, Electrical Stimulation, Ultrasound)	
Overall Intent: To recognize the indications for injections for abnormalities of tone or movement; to appropriately plan and effectively perform the injections	
Milestones	**Examples**
Level 1 *Identifies indications and contraindications for the procedure*	● Identifies the muscles with increased tone contributing to mobile ankle equinovarus ● Recommends chemodenervation injections to prevent fixed contracture due to dystonic equinovarus posturing at the ankle
Level 2 *Performs some components of the procedure, with supervision*	● Prepares a patient for a chemodenervation procedure, including obtaining the informed consent, preparing the injection sites, and performing the time out, but requires hands-on assistance to complete the injection
Level 3 *Performs all components of the procedure, with supervision*	● Performs all steps of the chemodenervation injection, but needs verbal assistance to optimize needle placement for some of the targeted muscles
Level 4 *Performs all components of the procedure across a spectrum of presentations*	● Performs all steps of an injection procedure using appropriate technical guidance to perform chemodenervation on muscles responsible for scissoring gait in a 10-year-old patient with spastic diplegic cerebral palsy ● Performs all steps of an injection procedure using appropriate technical guidance to perform chemodenervation on muscles responsible for a clenched fist deformity an adult patient
Level 5 *Role models the performance of the procedure across a spectrum of presentations*	● Is noted for proficiency with chemodenervation procedures and is asked to demonstrate injections for a more junior resident on the service ● Is selected to lead a resident injection workshop
Assessment Models or Tools	● Direct observation ● OSCE ● Simulation
Curriculum Mapping	●
Notes or Resources	● Components include all pre-procedural, procedural, and post-procedural aspects, including anticipation, prevention, and management of complications ● Textbooks ● Workshops ● E-modules

Patient Care 5: Procedural Skills: Joint and Soft Tissue Injections (e.g., Intra-articular, Trigger Point, Bursal, Perineural, Tendon Sheath) Performed under Guidance (e.g., Ultrasound, Fluoroscopy) **Overall Intent:** To perform all components of a broad range of joint and soft tissue injections for patients with a variety of diagnoses, including complex presentations when indicated	
Milestones	**Examples**
Level 1 *Identifies indications for the procedure*	● Identifies that a patient with a swollen knee joint is not a candidate for an injection due to an open wound on the leg ● Recommends a subacromial steroid injection for a patient with subacromial bursitis who has failed conservative care
Level 2 *Performs some components of the procedure, with supervision*	● Prepares a patient for a subacromial steroid injection, including obtaining informed consent, preparing the injection site, and performing the time out, but requires hands-on assistance to complete the injection
Level 3 *Performs all components of the procedure, with supervision*	● Performs all steps of a subacromial steroid injection, but needs verbal assistance to optimize needle placement
Level 4 *Performs all components of the procedure across a spectrum of diagnoses*	● Performs all steps of a subacromial steroid injection on patients of different ages and complexity of presentations ● Performs all steps of a knee injection using ultrasound guidance on a 78-year-old patient with severe osteoarthritis
Level 5 *Role models the performance of all components of the procedure, across a spectrum of diagnoses*	● A senior resident noted for proficiency with subacromial injections (procedures) is asked to demonstrate the procedure for junior residents on the service ● A senior resident is selected to lead a resident injection workshop
Assessment Models or Tools	● Direct observation ● OSCE ● Simulation
Curriculum Mapping	●
Notes or Resources	● Components include all pre-procedural, procedural, and post-procedural aspects, including anticipation, prevention, and management of complications ● E-modules

Patient Care 6: Procedural Skills: Electrodiagnostic Procedures (Planning, Performance, and Interpretation)
Overall Intent: To plan, perform, and interpret nerve conduction and electromyographic studies; to formulate an accurate and thorough electrodiagnostic test report

Milestones	Examples
Level 1 *Identifies sites for nerve stimulation, recording, and electromyography needle insertion*	● Describes recording electrode placement and sites of stimulation for median and ulnar nerve studies
Describes nerve physiology and instrumentation involved in nerve conduction studies and electromyography	● Describes the function of recording electrodes and the principles of common mode rejection/differential amplification
Level 2 *Plans and performs some components of the electrodiagnostic procedure, with supervision*	● Performs median and ulnar nerve conduction studies with hands-on assistance from the attending physician
Distinguishes normal from abnormal electrodiagnostic findings with guidance	● While going over the nerve conduction study data after completing the exam, identifies abnormal values for median sensory and motor distal latencies
Generates elements of an electrodiagnostic report, with assistance	● Documents the abnormal findings in a drafted test report but the attending completes the report, identifying the underlying diagnosis
Level 3 *Plans and performs all components of the electrodiagnostic procedure, with supervision*	● Performs median and ulnar nerve conduction studies, with oversight, and requires occasional verbal guidance to optimize electrode placement during needle electromyography examination
Independently recognizes abnormal electrodiagnostic findings	● Identifies fibrillation potentials during needle electromyography exam of the abductor pollicis brevis
Generates clear and concise electrodiagnostic reports that do not require substantive correction	● Generates a test report correctly identifying a focal median neuropathy at the wrist and characterizing the severity of the electrophysiologic deficit
Level 4 *Plans and performs all components of the electrodiagnostic procedure across a spectrum of diagnoses*	● Performs nerve conduction studies and needle electromyography examination on a diverse group of patients with a spectrum of diagnoses
Interprets electrodiagnostic data and modifies the study as it is being performed	● While performing a needle electromyography examination, correctly identifies fibrillation potentials in the pronator teres of a patient with a presumptive diagnosis of carpal tunnel

Generates tailored electrodiagnostic reports meeting the needs of the referring provider	syndrome; expands planned needle examination to include the biceps, triceps, deltoid, and cervical paraspinals to evaluate for possible cervical radiculopathy ● Independently generates an electrodiagnostic test report, succinctly summarizing the normal and abnormal findings from the study; the report successfully localizes the pathoanatomical lesion and documents the severity of the neurophysiologic dysfunction
Level 5 *Role models the planning and performance of all components of the electrodiagnostic procedures across a spectrum of diagnoses*	● Mentors more junior residents, teaching them how to perform and interpret both commonly and uncommonly performed nerve conduction studies, as well as how to perform and interpret needle electromyography
Makes treatment recommendations to referring provider based on electrodiagnostic findings	● In electrodiagnostic test report documenting a nerve injury, correctly evaluates and communicates to the referring physician the prognosis for recovery of function and the implications for surgical management
Assessment Models or Tools	● Chart review ● Direct observation ● OSCE
Curriculum Mapping	●
Notes or Resources	● Textbooks ● American Association of Electrodiagnostic Medicine. AAEM Practice topic in electrodiagnostic medicine. *Muscle Nerve*. 2002;25:918-922. https://www.aanem.org/getmedia/df604eb2-1bbe-4cf8-a256-cc62f9128e5d/CTS_Reaffirmed.pdf. 2019. ● AANEM Practice Topic. Reporting the Results of Needle EMG and Nerve Conduction Studies: An Education Report. https://www.aanem.org/getmedia/15908152-4080-4e2a-b39e-8b7b36255d0e/RptResultsEMGNCS-pdf.pdf. 2019.

Patient Care 7: Assistive Technologies (e.g., Prosthetics and Orthotics, Adaptive Equipment, Mobility Devices, Seating Systems, Communication Technologies)	
Overall Intent: To generate a detailed prescription, in consultation with other professionals, for a full range of assistive technologies including justification and advocacy, taking into consideration the assessment of impairments, barriers, contraindications and comorbidities, and patient goals	
Milestones	**Examples**
Level 1 *Describes assistive technologies and their indications*	● Explains the general indications for a cane after hip replacement surgery
Level 2 *Evaluates patient need for common assistive technologies based on impairments*	● Explains the specific indications for a cane in a patient with a Trendelenburg gait after hip replacement surgery ● Justifies need for an ankle-foot orthosis to address foot drop
Level 3 *Evaluates patient need for a full range of assistive technologies based on impairments, taking into account barriers, contraindications, comorbidities, and input from other professionals*	● Responds to a physical therapist's concern about a patient's ability to safely navigate within the home and community after a hip replacement due to cognitive impairment and difficulty with maintaining precautions; recommends a walker for within the home and a manual wheelchair for the community ● Identifies the need for assistive technologies for a patient with severe expressive aphasia and visual impairment in collaboration with a speech pathologist
Level 4 *Generates a detailed prescription, in consultation with other professionals, for a full range of assistive technologies including justification and advocacy where needed*	● A young athlete with a transtibial amputation presents to the multidisciplinary prosthetic clinic for a high-tech prosthesis that will allow the patient to continue to participate in sports; in collaboration with the multidisciplinary team, generates a detailed prescription and documents the medical justification and advocates for the patient when the payor initially denies the prosthesis
Level 5 *Serves as a resource to other professionals for clinical problem solving and functional challenges related to assistive technology*	● Provides specific recommendations to realign the fit of a transtibial prosthesis for excessive lateral truncal shift when approached by a physical therapist for help
Assessment Models or Tools	● Chart review ● Direct observation ● Multisource feedback ● OSCE ● Simulation ● Written or oral examination
Curriculum Mapping	●
Notes or Resources	● Textbooks ● Prosthetics and orthotics courses

Patient Care 8: Rehabilitation Interventions	
Overall Intent: To integrate knowledge of impairments, activity limitations, and participation restrictions to prescribe rehabilitation interventions by discipline and with appropriate precautions	
Milestones	**Examples**
Level 1 *Describes common modalities and general rehabilitation therapies by discipline*	● Explains that physical therapists can address range of motion, strength, and mobility ● Explains that speech and language pathologists can address a multitude of issues, including difficulties swallowing, speech articulation, language, and cognition
Level 2 *Prescribes common modalities and general rehabilitation therapies by discipline based on impairments*	● Prescribes physical therapy for range of motion and stretching for a plantar flexor contracture ● Prescribes ice for an acute muscle strain
Level 3 *Provides detailed therapy prescriptions for specific conditions with appropriate precautions*	● Prescribes serial casting by physical therapy to address a recalcitrant plantar flexor contracture, with appropriate precautions for skin monitoring
Level 4 *Integrates comprehensive knowledge of impairments, activity limitations, and participation restrictions to prescribe rehabilitation interventions*	● In addition to prescribing physical therapy and serial casting for a severe plantar flexor contracture, addresses activity limitations such as work and home modifications
Level 5 *Demonstrates the ability to direct and implement rehabilitation interventions in challenging clinical conditions*	● Directs the care of a patient with a severe right sided plantar flexion contracture who has peripheral vascular disease, severe leg edema and dementia
Assessment Models or Tools	● Chart review ● Direct observation ● Multisource feedback ● OSCE ● Simulation ● Written or oral examination
Curriculum Mapping	●
Notes or Resources	● Textbooks

Medical Knowledge 1: Foundational Principles of Physiatric Practice (Anatomy, Pathophysiology, Kinesiology, Pharmacology) Overall Intent: To integrate foundational knowledge into physiatric practice across a spectrum of ages, impairments, and clinical settings	
Milestones	**Examples**
Level 1 *Describes scientific knowledge for general medical conditions*	● Understands differences in mechanisms of action for antihypertensives ● Understands differences in mechanisms of action for nonsteroidal anti-inflammatory drugs (NSAIDs) ● Describes basic anatomy
Level 2 *Describes foundational knowledge relevant to physiatric practice*	● Describes stroke pathophysiology; correlates impairments with lesion location ● Understands expected age-related changes of the spine and poor correlation with pain ● Describes expected upper motor neuron versus lower motor neuron findings based on diagnosis
Level 3 *Integrates foundational knowledge into physiatric practice*	● Recommends open-chain versus closed-chain exercise recommendations based on diagnosis ● Identifies impairments, activity limitations, and participation restrictions
Level 4 *Integrates foundational knowledge into physiatric practice across a spectrum of ages, impairments, and clinical settings*	● Identifies activity limitations based on age, condition, and environment, and develops appropriate functional goals ● Considers diagnosis, age, and comorbidities when recommending medication
Level 5 *Serves as a resource for others for new and emerging concepts relevant to foundational principles of physiatric practice*	● Selected to write a clinical review on stem cell treatment after brain injury ● Invited to present results of research project at a scientific meeting
Assessment Models or Tools	● Chart-stimulated recall ● Clinical/Direct observation ● Objective Structured Clinical Examination ● Self-Assessment Examination for Residents (SAE-R) ● Scholarly activity ● Written assessment
Curriculum Mapping	●
Notes or Resources	● Textbooks ● Journals ● Guidelines ● Online materials / modules

Medical Knowledge 2: Clinical Reasoning	
Overall Intent: To reach high-probability diagnoses with continuous re-appraisal to minimize clinical reasoning errors	

Milestones	Examples
Level 1 *Identifies salient elements of a patient presentation to inform clinical reasoning*	● Presents a basic clinical scenario after interviewing a patient with neck pain
Identifies diagnostic studies for common medical conditions	● Appropriately orders diagnostic studies for evaluation of suspected deep vein thrombosis
Describes common causes of clinical reasoning error	● Describes tendency to be overly influenced by one piece of information (anchor bias)
Level 2 *Develops a prioritized differential diagnosis for common presentations*	● Presents a comprehensive and prioritized differential for neck pain
Identifies diagnostic studies for conditions commonly seen in physiatric practice	● Appropriately orders a urinalysis for evaluation of increase spasticity after spinal cord injury
Identifies types of clinical reasoning errors within patient care, with guidance	● When asked by an attending, recognizes own anchor bias in a clinical scenario
Level 3 *Develops a prioritized differential diagnosis for complex presentations*	● Presents a comprehensive and prioritized differential for pain that spans multiple body regions
Prioritizes the sequence and urgency of diagnostic testing	● Recognizes that a patient with new bowel and bladder incontinence and weakness requires urgent imaging
Demonstrates a structured approach to personally identify clinical reasoning errors	● Describes their own cognitive reasoning process and identifies where clinical reasoning bias can have an impact
Level 4 *Synthesizes information to reach high-probability diagnoses with continuous re-appraisal to minimize clinical reasoning errors*	● Understands the pre-test probability of a spinal cord injury survivor having venous thromboembolism in the setting of acute hypoxia, uses all available information to create a prioritized differential for hypoxia, and identifies the potential for anchor bias, recency bias, premature closure
Considers diagnostic testing based on cost effectiveness and likelihood that results will influence clinical management	● Considers the advantages and disadvantages of diagnostic testing in carpal tunnel syndrome including considerations of cost-effectiveness and next step in management

Anticipates and accounts for errors and biases	● In a patient with prior history of narcotic use disorder and chronic back pain presenting with acute back pain and radiculopathy does not discount new pain indicating possible cauda equina syndrome
Level 5 *Role models identification of cost-effective diagnostic testing* *Coaches others to minimize clinical reasoning errors*	● Leads a quality improvement (QI) project to improve cost-effective diagnostic testing ● Helps student to identify and reduce clinical reasoning errors
Assessment Models or Tools	● Chart review ● Data about practice habits ● Direct observation ● Online modules ● OSCE ● QI process ● SAE-R ● Written/oral examination
Curriculum Mapping	●
Notes or Resources	● The Society to Improve Diagnosis in Medicine. Inter-Professional Consensus Curriculum on Diagnosis and Diagnostic Error. https://www.improvediagnosis.org/competency-summary-list/. 2019. ● The Society to Improve Diagnosis in Medicine. Driver Diagram. https://www.improvediagnosis.org/wp-content/uploads/2018/10/Driver_Diagram_-_July_31_-_M.pdf. 2019. ● The Society to Improve Diagnosis in Medicine. Assessment of Reasoning Tool. https://www.improvediagnosis.org/art/. 2019. ● Guidelines (e.g. AANEM, low back pain) ● Embedded EHR tools

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**
Level 1 *Demonstrates knowledge of common patient safety events* *Demonstrates knowledge of how to report patient safety events*	● Has basic knowledge of the potential for a medication error and how to report one if it occurs
Level 2 *Identifies system factors that lead to patient safety events* *Reports patient safety events through institutional reporting systems (simulated or actual)*	● Identifies and reports a medication error, along with system factors contributing to that issue
Level 3 *Participates in analysis of patient safety events (simulated or actual)* *Participates in disclosure of patient safety events to patients and families (simulated or actual)*	● Prepares for morbidity and mortality presentations, joining a root cause analysis group ● Reviews a patient safety event and communicates with patient/family
Level 4 *Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)* *Discloses patient safety events to patients and families (simulated or actual)*	● Collaborates with a team to lead the analysis of a patient safety event and can competently communicate with patients/families about those events
Level 5 *Actively engages teams and processes to modify systems to prevent patient safety events* *Role models or mentors others in the disclosure of patient safety events*	● Competently assumes an active role at the departmental or institutional level for patient safety initiatives, possibly even being the person to initiate action or call attention to the need for action
Assessment Models or Tools	● Chart or other system documentation by fellow ● Direct observation at bedside or in meetings ● Documentation of QI or patient safety project processes or outcomes ● E-module multiple choice tests

	● Multisource feedback ● Portfolio ● Simulation
Curriculum Mapping	●
Notes or Resources	● Institute of Healthcare Improvement. http://www.ihi.org/Pages/default.aspx. 2019.

Systems-Based Practice 2: Quality Improvement (QI)
Overall Intent: To develop an understanding of QI principles and engage in QI activities

Milestones	Examples
Level 1 *Demonstrates knowledge of basic quality improvement methodologies and metrics*	● Has basic knowledge of QI principles and strategies, but has not yet participated in such activities
Level 2 *Describes quality improvement initiatives*	● Is aware of improvement initiatives within their scope of practice
Level 3 *Participates in quality improvement initiatives*	● Participates in a QI activity to improve patient hand-offs
Level 4 *Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project*	● Initiates a QI project with the use of a standardized template for hand-offs and analyzes the results
Level 5 *Creates, implements, and assesses quality improvement initiatives at the institutional or community level*	● Competently assumes an active role at the departmental or institutional level for QI initiatives, possibly even being the person to initiate action or call attention to the need for action
Assessment Models or Tools	● Chart or other system documentation by fellow ● Direct observation at bedside or in meetings ● Documentation of QI or patient safety project processes or outcomes ● E-module multiple choice tests ● Multisource feedback ● Portfolio ● Simulation
Curriculum Mapping	●
Notes or Resources	● Institute of Healthcare Improvement. http://www.ihi.org/Pages/default.aspx. 2019. ● American Academy of Physical Medicine and Rehabilitation. QI Guidelines Resource https://www.aapmr.org/quality-practice/evidence-based-medicine/clinical-practice-guidelines/guideline-resources. Accessed 2019. ● ABPMR QI Guidelines Resource

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**
Level 1 *Demonstrates knowledge of care coordination*	● Identifies the members of the interprofessional/interdisciplinary team, including other specialty physicians, nurses, consultants, social workers, case managers, and therapists, and describes their roles, but is not yet routinely using team members or accessing all available resources
Identifies key elements for safe and effective transitions of care and hand-offs	● Lists the essential components of an effective sign-out and care transition including sharing information necessary for successful on-call/off-call transitions
Demonstrates knowledge of population and community health needs and disparities	● Identifies components of social determinants of health and how they impact the delivery of patient care
Level 2 *Coordinates care of patients in routine clinical situations effectively using the roles of the interprofessional teams*	● Coordinates with interprofessional team members for routine cases, but requires supervision to ensure all necessary referrals and testing are made
Performs safe and effective transitions of care/hand-offs in routine clinical situations	● Performs a routine case sign-out but still needs direct supervision to identify and appropriately triage cases or calls (priority versus non-priority case or call) and anticipatory guidance
Identifies specific population and community health needs and inequities for their local population	● Knows which patients are at high risk for specific health outcomes related to health literacy concerns, cost of testing or therapy, LGBTQ status, socioeconomic status, religion, culture, and family support
Level 3 *Coordinates care of patients in complex clinical situations effectively collaborating with members of the interprofessional teams*	● Develops a comprehensive treatment plan in coordination with consultants from other medical specialties, physical therapists, speech pathology
Performs safe and effective transitions of care/hand-offs in complex clinical situations	● Coordinates a complex discharge from an acute inpatient rehabilitation with home health agency, pharmacy, acute care team and primary care physician.
Uses local resources effectively to meet the needs of a patient population and community while minimizing health care inequities	● Identifies a discount pharmacy close to where the patient lives
Level 4 *Role models effective coordination of patient-centered care among different professions and specialties*	● Role models and educates students and more junior team members regarding the engagement of appropriate interprofessional team members, as needed for each patient and/or case, and ensures the necessary resources have been arranged

Role models and advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems and settings	● Models efficient hand-off to the rehab team, and coordinates and prioritizes consultant input for a specific diagnosis to ensure the patient gets appropriate follow-up
Participates in changing and adapting practice to provide for the needs of specific populations	● Identifies patient populations at high risk for poor health care outcomes due to health disparities and inequities, and implements strategies to improve care
Level 5 *Analyzes the process of care coordination and leads in the design and implementation of improvements*	● Works with hospital or ambulatory site team members or leadership to analyze care coordination in that setting, and takes a leadership role in designing and implementing changes to improve the care coordination
Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes	● Develops a validated tool to improve safe and effective transitions of care
Leads innovations and advocacy in partnership with populations and communities experiencing health care inequities	● Designs a social determinants of health curriculum to help others learn to identify local resources and barriers to care ● Effectively uses telehealth for proactive outreach clinics
Assessment Models or Tools	● Case management quality metrics and goals mined from electronic health records (EHR) ● Chart review ● Direct observation (including discussion during rounds, case workup and case presentations) ● Lectures/workshops on social determinants of health or population health with identification of local resources ● Multisource feedback ● OSCE ● Review of sign-out tools, use and review of checklist
Curriculum Mapping	●
Notes or Resources	● Centers for Disease Control (CDC). Population Health Training in Place Program (PH-TIPP). https://www.cdc.gov/pophealthtraining/whatis.html. 2019. ● Skochelak SE, Hawkins RE, Lawson LE, Starr SR, Borkan J, Gonzalo JD. *Health Systems Science*. 1st ed. Philadelphia, PA: Elsevier; 2016.

Systems-based Practice 4: Physician Role in Health Care Systems	
Overall Intent: To understand his/her role in the complex health care system and how to optimize the system to improve patient care and the health system's performance	
Milestones	**Examples**
Level 1 *Identifies key components of the complex health care system including the various venues for post-acute care*	● Identifies that post-acute care, includes acute inpatient rehabilitation facility, skilled nursing facility, long term acute care hospital
Describes basic health payment systems (e.g., government, private, public, uninsured care) and practice models	● Names systems and providers involved in test ordering and payment
Identifies basic knowledge domains for effective transition to practice (e.g., information technology, legal, billing and coding, financial, personnel)	● Recognizes that Medicare, Medicaid, the VA, and commercial third-party payers are different payment systems
Level 2 *Describes how components of a complex health care system are inter-related, and how this impacts patient care*	● Understands how improving patient satisfaction improves patient adherence and remuneration to the health system; is not yet able to consistently think through clinical redesign to improve quality and does not yet modify personal practice to enhance outcomes
Delivers care with consideration of each patient's payment model (e.g., insurance type)	● Applies knowledge of health plan features, including formularies and network requirements in patient care situations
Demonstrates use of information technology required for medical practice (e.g., electronic health record, documentation required for billing and coding)	● Uses hospital EHR to write note meeting basic requirements for billing"
Level 3 *Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)*	● Understands that extended length of stay impacts the ability of other patients to have an inpatient bed and increases costs
Engages with patients in shared decision making, informed by each patient's payment models	● Uses shared decision making and adapts the choice of the most cost-effective testing depending on the relevant clinical needs

Describes core administrative knowledge needed for transition to practice (e.g., contract negotiations, malpractice insurance, government regulation, compliance)	● Understands state law concerning requirements for malpractice insurance and consequences for noncompliance
Level 4 *Navigates the various components of the complex health care system to provide efficient and effective patient care and transition of care*	● Works collaboratively with other services to identify patient assistance resources
Advocates for patient care needs (e.g., community resources, patient assistance resources) with consideration of the limitations of each patient's payment model	● Advocates for a customized wheelchair to prevent downstream costs and complications
Analyzes individual practice patterns and professional requirements in preparation for independent practice	● Recognizes the need in practice to set aside time for "New Patient" slots in busy clinical practice setting
Level 5 *Advocates for or leads systems change that enhances high value, efficient and effective patient care, and transition of care*	● Works with community or professional organizations to advocate for no smoking ordinances
Participates in health policy advocacy activities	● Develops processes to decrease opioid prescribing for one or more clinical services
Educates others to prepare them for transition to practice	● Discusses personal experiences in setting up a private practice with the other residents
Assessment Models or Tools	● Chart review/audit of patient care ● Direct observation ● Patient satisfaction data
Curriculum Mapping	●
Notes or Resources	● Agency for Healthcare Research and Quality (AHRQ). The Challenges of Measuring Physician Quality. https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/physician/challenges.html. 2019. ● AHRQ. Major Physician Performance Sets. https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/physician/measurementsets.html. 2019. ● The Kaiser Family Foundation. Health Reform. https://www.kff.org/topic/health-reform/. 2019.

	● Dzau VJ, McClellan M, Burke S, et al. Vital directions for health and health care: priorities form a national academy of medicine initiative. *JAMA*. 2017;317(14):1461-1470. https://nam.edu/vital-directions-for-health-health-care-priorities-from-a-national-academy-of-medicine-initiative/. 2019.

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice	
Overall Intent: To incorporate evidence and patient values into clinical practice	

Milestones	Examples
Level 1 *Demonstrates how to access and use available evidence*	● Identifies the clinical problem and obtains the appropriate evidence-based guideline for the patient but is not yet able to ask the appropriate questions or elicit patient preferences regarding clinical algorithms
Level 2 *Locates and applies the best available evidence, integrated with patient preference, to the care of straightforward patients*	● Asks the appropriate questions of the patient in order to elicit preferences for disease management/treatment but is not yet able to use the information to identify the course of clinical care
Level 3 *Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients*	● Obtains and applies evidence in the care of complex patients when there is relative agreement in what the evidence suggests
Level 4 *Critically appraises and applies evidence even in the face of uncertainty and conflicting evidence to guide care, tailored to the individual patient*	● Assesses the primary literature to answer a very specific clinical question ● Assesses the primary literature to address a unique patient when the evidence is unclear or emerging ● Is aware of novel therapeutic techniques or new evidence that challenges current guidelines and demonstrates the ability to appropriately apply this information
Level 5 *Coaches others to critically appraise and apply evidence for complex patients; and/or participates in the development of guidelines*	● Formally teaches others how to find and apply best practice or develops, independently or as a part of a team, thoughtful clinical guidelines
Assessment Models or Tools	● Case based assessment ● Direct observation ● Journal Club ● Oral or written examination ● Research portfolio
Curriculum Mapping	●
Notes or Resources	● National Institutes of Health. Write Your Application. https://grants.nih.gov/grants/how-to-apply-application-guide/format-and-write/write-your-application.htm. 2019. ● U.S. National Library of Medicine. PubMed Tutorial. https://www.nlm.nih.gov/bsd/disted/pubmedtutorial/cover.html. 2019. ● Institutional IRB guidelines ● Various journal submission guidelines

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Professional Growth
Overall Intent: To seek clinical performance information with the intent to improve care; reflect on all domains of practice, personal interactions, and behaviors, and their impact on colleagues and patients, families and caregivers (reflective mindfulness); develop clear objectives and goals for improvement in some form of a learning plan

Milestones	Examples
Level 1 *Accepts responsibility for professional development* *Identifies and/or acknowledges gaps between expectations and actual performance* *Actively seeks opportunities to improve*	● Acknowledges need to improve ● Begins to seek ways to determine where improvements are needed and makes some specific goals that are reasonable to execute and achieve
Level 2 *Demonstrates openness to verbal feedback and other performance data* *Analyzes and reflects on the factors which contribute to performance gaps* *Designs and implements a learning plan, with assistance*	● Summarizes feedback that's been received ● Increasingly able to identify performance gaps in terms of diagnostic skills and daily work; uses feedback from others ● Asks faculty members about performance and opportunities for improvement ● Uses feedback with a goal of improving communication skills with peers/colleagues, staff members, and patients the following week ● Improves from prior feedback ● Drafts goals for learning plan but needs to use mentor feedback for effective implementation
Level 3 *Seeks and incorporates verbal feedback and other performance data intermittently, with humility and adaptability* *Analyzes, reflects on, and institutes behavioral changes to narrow performance gaps* *Independently designs and implements a learning plan*	● Takes input from peers/colleagues and supervisors to gain complex insight into personal strengths and areas to improve ● Acts on input and is appreciative and not defensive ● Documents goals in a more specific and achievable manner, such that attaining them is reasonable and measurable ● Uses multiple sources of data to inform goals and plan
Level 4 *Seeks and incorporates verbal feedback and other performance data consistently, with humility and adaptability* *Uses data to measure the effectiveness of the learning plan to address performance gaps and modifies it when necessary*	● Consistently identifies ongoing gaps and chooses areas for further development ● Uses multiple sources of data to evaluate the success of past learning plan and define next steps

Level 5 *Role models consistent incorporation of verbal feedback and other performance data* *Coaches others on reflective practice, including the design and implementation of learning plans*	● Encourages other learners on the team to consider how their behavior affects the rest of the team ● Provides effective feedback for others regarding learning plans
Assessment Models or Tools	● Direct observation ● Multisource feedback ● Peer feedback ● Review of learning plan
Curriculum Mapping	●
Notes or Resources	● Hojat M, Veloski JJ, Gonnella JS. Measurement and correlates of physicians' lifelong learning. *Academic Medicine*. 2009;84(8):1066-1074. https://journals.lww.com/academicmedicine/fulltext/2009/08000/Measurement_and_Correlates_of_Physicians__Lifelong.21.aspx. 2019. ● 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. *Academic Medicine*. 2013;88(10):1558-1563. https://journals.lww.com/academicmedicine/fulltext/2013/10000/Assessing_Residents__Written_Learning_Goals_and.39.aspx. 2019.

Professionalism 1: Ethical Practice	
Overall Intent: To understand ethical principles, apply them in clinical practice, and use appropriate resources for managing ethical dilemmas	
Milestones	**Examples**
Level 1 *Approaches clinical care and educational duties with actions consistent with core ethical principles*	● Discusses the basic principles underlying ethics (beneficence, nonmaleficence, justice, autonomy) and professionalism (professional values and commitments), and how they apply in various situations (informed consent process) ● Obtains informed consent for procedures
Level 2 *Demonstrates consistent application of ethical principles in routine clinical practice, such as informed consent, surrogate decision making, advance directives, confidentiality, error reporting and disclosure, and stewardship of limited resources*	● Uses ethical principles to analyze straightforward situations ● When obtaining informed consent for a procedure, consistently gives patients the information necessary to understand the scope and nature of potential risks and benefits of the procedure in order to make a decision, and follows the patients' wishes ● Acknowledges a medical error, and provides the patient an explanation of the error and its consequences without deception or non-disclosure

Level 3 *Recognizes tensions between conflicting ethical principles in complex situations and seeks appropriate guidance to help resolve ethical dilemmas*	● Analyzes conflicts (or perceived conflicts) between patients/providers/staff members or between professional values
	    o Consults with a genetic counselor about the implications of genetic testing
	    o Requests an ethics consult for Jehovah's Witness patient with potential transfusion needs
	    o Submits an Institutional Review Board (IRB) review for a research project
	● Analyzes difficult real or hypothetical ethics case scenarios or situations, and recognizes the underlying ethical principles and any potential tensions between them
	● Uses shared decision making and educates patients to improve compliance with recommended treatment, but respects the competent patient's right to refuse treatment, even if it is medically indicated

Level 4 *Manages ethical dilemmas, using appropriate resources as needed to facilitate resolution (e.g., ethics consultations, literature review, risk management/legal consultation)*	● Participates in creation of a behavioral plan to address a patient's verbal abuse of staff with ethically appropriate enforceable consequences for inappropriate behaviors, in consultation with the ethics team and with engagement of the patient as much as feasible Facilitates communication about the plan to promote consistency of response within the rehabilitation team
Level 5 *Serves as a resource for others to resolve complex ethical dilemmas*	● Identifies and seeks to address system-wide factors or barriers to promoting a culture of ethical practice through participation in a work group, committee, or task force ● Serves as the resident member of the IRB or Ethics Committee
Assessment Models or Tools	● Direct observation ● Global evaluation ● Mentor and program director observations ● Multisource feedback

	● Oral or written self-reflection (e.g., of a personal or observed lapse, ethical dilemma, or systems-level factors) ● Simulation
Curriculum Mapping	●
Notes or Resources	● American Medical Association. Ethics. https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. 2019. ● Kirschner KL. Ethical-legal issues in physiatrics. *PMR*. 2009;1(1):81. https://onlinelibrary.wiley.com/doi/full/10.1016/j.pmrj.2008.12.003. 2019.

Professionalism 2: Professional Behaviors	
Overall Intent: To recognize and address lapses in professional behavior, demonstrate professional behaviors, and use appropriate resources for minimizing potential professionalism lapses	
Milestones	**Examples**
Level 1 *Identifies professionalism lapses in self and others* *Describes when and how to appropriately report lapses*	● Identifies and describes potential triggers for professionalism lapses, describes when and how to appropriately report professionalism lapses, and outlines strategies for addressing common barriers to reporting
Level 2 *Demonstrates professional behavior in routine situations* *Takes responsibility for own professionalism lapses when applicable and identifies contributing factors*	● Demonstrates professional behavior in routine situations and can acknowledge a lapse without becoming defensive, making excuses, or blaming others ● Displays respect for patients and expects the same from others ● Apologizes for the lapse when appropriate and taking steps to make amends if needed ● Articulates strategies for preventing similar lapses in the future
Level 3 *Anticipates situations that may trigger professionalism lapses* *Takes remedial action to address lapses when applicable*	● Recognizes that when getting calls late at night, it is important to be respectful to the caller ● Apologizes to the nurse after an outburst in response to a call
Level 4 *Demonstrates professional behavior across situations and settings* *Proactively intervenes to prevent lapses*	● Analyzes difficult real or hypothetical professionalism case scenarios or situations, recognizes own limitations, and consistently demonstrates professional behavior ● Actively and consistently seeks to consider the perspectives of others to prevent lapses
Level 5 *Coaches others when their behavior fails to meet professional expectations* *Addresses system issues to minimize potential for professionalism lapses*	● Coaches junior resident who is frequently late to rounds ● Identifies and seeks to address system-wide factors or barriers to promoting a culture of professional behavior through participation in a work group, committee, or task force
Assessment Models or Tools	● Direct observation ● Multisource feedback ● Oral or written self-reflection (e.g., of a personal or observed lapse, ethical dilemma, or systems-level factors) ● Simulation
Curriculum Mapping	●
Notes or Resources	● ABIM Foundation. American Board of Internal Medicine. Medical professionalism in the new millennium: a physician charter. *Annals of Internal Medicine*. 2002;136(3):243-246.

https://annals.org/aim/fullarticle/474090/medical-professionalism-new-millennium-physician-charter. 2019.
- Byyny RL, Papadakis MA, Paauw DS, Pfiel S, Alpha Omega Alpha. *Medical Professionalism Best Practices.* Menlo Park, CA: Alpha Omega Alpha Honor Medical Society; 2015. https://alphaomegaalpha.org/pdfs/2015MedicalProfessionalism.pdf. 2019.
- Levinson W, Ginsburg S, Hafferty FW, Lucey CR. *Understanding Medical Professionalism.* 1st ed. New York, NY: McGraw-Hill Education; 2014. https://accessmedicine.mhmedical.com/book.aspx?bookID=1058. 2019.
- Bynny RL, Paauw DS, Papadakis MA, Pfeil S, Alpha Omega Alpha. *Medical Professionalism Best Practices: Professionalism in the Modern Era.* Menlo Park, CA: Alpha Omega Alpha Honor Medical Society; 2017. http://alphaomegaalpha.org/pdfs/Monograph2018.pdf. 2019.
- ABPMR. https://www.abpmr.org/MOC/PartI/ProfessionalismDefinition. 2019.

Professionalism 3: Accountability	
Overall Intent: To take responsibility for one's own actions and the impact on patients and other members	

Milestones	Examples
Level 1 *Responds promptly to requests or reminders to complete responsibilities*	● Responds quickly to reminders from program administrator to complete case logs ● Completes clinic notes on the day of service after gentle prompting from attending ● Performs patient hand-off to the on-call resident after being reminded to do so ● Completes evaluations of peers and attendings when reminded by program administrator
Level 2 *Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations*	● Completes case logs without prompting from program administrator ● Completes appropriately detailed clinic notes on the day of service without prompting from attending ● Completes patient hand-off to the on-call resident at the pre-designated time ● Submits required evaluations on time without requiring reminders
Level 3 *Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations*	● Completes all work on the inpatient rehabilitation service prior to leaving town to give a poster presentation at a conference ● Appropriately notifies resident on day service about overnight call events during transition of care or hand-off in order to avoid patient safety issues and compromise of patient care ● Notifies attending of multiple competing demands on call, appropriately triages tasks, and asks for assistance from other residents or faculty members, if needed
Level 4 *Proactively implements strategies to ensure that the needs of patients, teams, and systems are met in a timely manner*	● Senior resident advises more junior residents in how to manage their time in completing patient care tasks and escalates to communicating with program director if problem requires a system-based approach and/or needs addressing at a higher administrative level ● Takes responsibility for potential adverse outcomes and professionally discusses these concerns with the interprofessional team
Level 5 *Coaches others to optimize timely task completion*	● Sets up a meeting with the nurse manager to streamline patient discharges ● Leads team to find solutions to a problem that has been identified
Assessment Models or Tools	● Compliance with deadlines and timelines ● Direct observation ● Mentor and program director observations ● Multisource feedback ● Self-evaluations and reflective tools ● Simulation
Curriculum Mapping	●
Notes or Resources	● Code of conduct from fellow/resident institutional manual ● Expectations of residency program regarding accountability and professionalism

- Fornari A, Akbar S, Tyler S. Critical synthesis package: assessment of professional behaviors (APB). *MedEdPORTAL. 2014;10:9902. https://www.mededportal.org/publication/9902. 2019.*
- Muueller PS. Teaching and assessing professionalism in medical learners and practicing physicians. *Rambam Maimonides Med J*. 2015;6(2):e0011. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4422450/. 2019.
- Mueller PS. Incorporating professionalism into medical education: the Mayo Clinic experience. *Keio J Med*. 2009;58(3)133-143. https://www.jstage.jst.go.jp/article/kjm/58/3/58_3_133/_article. 2019.
- Wilkinson TJ, Wade WB, Knock LD. A blueprint to assess professionalism: results of a systematic review. *Acad Med*. 2009;84(5):551-558. https://journals.lww.com/academicmedicine/fulltext/2009/05000/A_Blueprint_to_Assess_Professionalism__Results_of.8.aspx. 2019.
- Donnon T, Al Ansari A, Al Alawi S, Violato C. The reliability, validity, and feasibility of multisource feedback physician assessment: a systematic review. *Acad Med*. 2014;89(3):511-516. https://journals.lww.com/academicmedicine/fulltext/2014/03000/The_Reliability,_Validity,_and_Feasibility_of.34.aspx. 2019.

Professionalism 4: Patient Care Etiquette with Patients of All Abilities	
Overall Intent: To attend to the comfort and dignity of all patients regardless of any impairment or disability	

Milestones	Examples
Level 1 *Recognizes the need to respect the dignity of all patients regardless of impairments or disabilities*	● Understands that all patients should be treated with respect, with due attention to their comfort and dignity, regardless of disability
Level 2 *Demonstrates specific elements of verbal and physical communication that reflect respect for people with impairments or disabilities*	● Sits at the level of a wheelchair user for conversation ● Treats the wheelchair as part of the user's personal space ● Talks directly to the person with disability not through their caregiver or companion ● Uses language that emphasizes the individual person and not just the disability when referring to the patient ("a person with paraplegia", not "a paraplegic") ● Adjusts pillows and blanket if needed after examination, and replaces the call button or wheelchair so it is accessible to the patient if moved during patient examination in bed ● Identifies self and makes the patient aware verbally before making physical contact with a patient who is blind
Level 3 *Proactively maintains patient's comfort and dignity during history taking and physical examination for those with mild impairments or disabilities*	● Takes care to avoid causing discomfort to the patient while testing active range of motion of an inflamed knee joint ● Approaches a patient with a right visual field defect from the patient's left (good) side in order to not startle them
Level 4 *Proactively maintains patient's comfort and dignity during history taking and physical examination for those with severe impairments or disabilities*	● Turns a patient with dense hemiplegia with ease during physical examination without pulling on the weak arm, keeps the weak arm supported at all times during the turn, and appropriately uses techniques such as bending the opposite knee or crossing the patient's ankles in the direction of the turn to facilitate the movement; controls any spasms provoked by the movement by exerting gentle pressure on the spastic limb
Level 5 *Serves as a role model and as a resource for others by coaching them in behaviors and actions that optimize the comfort, dignity, and respect of people with impairments or disabilities*	● Is recognized as a role model for demonstrating disability etiquette in clinical interactions and selected to teach a workshop on optimal techniques to examine patients with different disabling conditions
Assessment Models or Tools	● Direct observation ● Global evaluation ● Mentor and program director observations ● Multisource feedback ● Oral or written self-reflection ● Simulation
Curriculum Mapping	●

Notes or Resources	- United Spinal Association. *Disability Etiquette: Tips on Interacting with People with Disabilities.* New York, NY: United Spinal Association. https://www.unitedspinal.org/pdf/DisabilityEtiquette.pdf. 2019. - Sabharwal S. Objective assessment and structured teaching of disability etiquette. *Acad Med*. 2001;76(5):509. https://journals.lww.com/academicmedicine/Fulltext/2001/05000/Objective_Assessment_and_Structured_Teaching_of.38.aspx#pdf-link. 2019. - Sabharwal S. Assessment of competency in positioning and movement of physically disabled patients. *Acad Med*. 2000;75(5):525. https://journals.lww.com/academicmedicine/Fulltext/2000/05000/Assessment_of_Competency_in_Positioning_and.47.aspx. 2019.

Professionalism 5: Resident Well-Being and Help-Seeking **Overall Intent:** To identify, use, manage, improve, and seek help for personal and professional well-being	
Milestones	**Examples**
Level 1 *Recognizes status of personal and professional well-being, with assistance*	● Describes personal well-being during semi-annual evaluation with program director or during mentor meeting with prompting
Level 2 *Independently recognizes status of personal and professional well-being and demonstrates appropriate help seeking behaviors*	● Describes employee assistance program and resident wellness program
Level 3 *With assistance, proposes, implements, and refines a plan to optimize personal and professional well-being*	● With supervision, assists in developing a personal action plan to address stress and burnout ● With the help of the program director, creates a plan to optimize work efficiency
Level 4 *Independently develops, implements, and refines a plan to optimize personal and professional well-being*	● Plans to exercise three times each week to reduce stress
Level 5 *Coaches others and addresses system barriers and facilitators to optimize personal and professional well-being*	● Assists with the formation of resident wellness programming
Assessment Models or Tools	● Direct observation ● Group interview or discussions for team activities ● Institutional online training modules ● Mentor and program director observations ● Self-assessment and personal learning plan
Curriculum Mapping	●
Notes or Resources	● This subcompetency is not intended to evaluate a fellow's well-being, but to ensure each fellow has the fundamental knowledge of factors that impact well-being, the mechanisms by which those factors impact well-being, and available resources and tools to improve well-being. ● Local resources, including Employee Assistance ● ACGME. "Well-Being Tools and Resources." https://dl.acgme.org/pages/well-being-tools-resources. 2019. ● Busireddy KR, Miller JA, Ellison K, Ren V, Qayyum R, Panda M. Efficacy of interventions to reduce resident physician burnout: a systematic review. *Journal of Graduate Medical Education*. 2017;9(3):294-301. doi:10.4300/JGME-D-16-00372.1.

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication	
Overall Intent: To deliberately use language and behaviors to form constructive relationships with the patient and others (e.g., family and caregivers), identify communication barriers including self-reflection on personal biases, and minimize them in the doctor-patient relationships; to organize and lead communication around shared decision making	
Milestones	**Examples**
Level 1 *Uses language and nonverbal behavior to demonstrate respect and establish rapport* *Minimizes common barriers to effective communication (e.g., language, disability)* *Accurately communicates own role within the health care system*	● Self-monitors and controls tone, non-verbal responses, and language and asks questions to invite patient/family/caregiver participation ● Before a family meeting, adjusts the seating in the room and sits down so that all participants can see and hear one another ● Identifies common communication barriers in patient care and uses interpretation services and picture boards) ● Avoids medical jargon and can communicate at a level understandable to a lay person ● Ensures communication is at the appropriate reading level to be understood by the patient/family/caregiver ● Accurately communicates their role as a resident to patients/families/caregivers
Level 2 *Establishes a therapeutic relationship in straightforward encounters using active listening and clear language* *Minimizes complex barriers to effective communication (e.g., health literacy, cultural)* *Organizes and initiates communication with patient/family by clarifying expectations and verifying understanding of the clinical situation*	● Establishes a professional relationship with patients/families/caregivers, with active listening, attention to affect, and questions that explore the optimal approach to daily tasks ● With patient consent, consults pastoral services to facilitate communication between a patient and their family related to differing views of how religion impacts treatment ● Effectively leads patient/family/caregiver goal meetings in straightforward cases, with attending guidance
Level 3 *Establishes a therapeutic relationship in challenging patient encounters* *When prompted, reflects on personal biases while attempting to minimize communication barriers* *With guidance, sensitively and compassionately delivers medical information, elicits*	● Successfully establishes rapport with challenging patients ● Maintains and repairs a therapeutic relationship through times of conflict ● Attempts to mitigate identified communication barriers, including reflection on implicit biases when prompted ● Provides information in a tailored way to meet the needs of patient/family/caregivers using written versus verbal communication, amount of information, and number of choices desired ● Elicits what is most important to the patient/family/caregivers, and acknowledges uncertainty in medical complexity and prognosis

patient/family values, goals and preferences, and acknowledges uncertainty and conflict	
Level 4 *Easily establishes therapeutic relationships, with attention to patient/family concerns and context, regardless of complexity* *Overcomes personal biases while proactively minimizing communication barriers* *Independently, uses shared decision making to align patient/family values, goals, and preferences with treatment options to make a personalized care plan*	● Has won the trust of the patient and family and can explain that what the family wants for the patient may not be what is best for the patient ● Identifies that they did not ask patients who are transgender which pronouns to use and adds the question to future routine communication ● Anticipates and proactively addresses communication barriers, including eliciting past experiences and preferences of patients/families/caregivers, and recognition of own implicit bias ● Engages in shared decision-making process with the patient and family, including a recommended plan to align patient's unique goals with treatment options
Level 5 *Mentors others in developing positive therapeutic relationships* *Role models self-awareness practice while teaching a contextual approach to minimize communication barriers* *Role models shared decision making in patient/family communication including those with a high degree of uncertainty/conflict*	● Role models and supports colleagues in self-awareness and reflection to improve therapeutic relationships with patients ● Is an example to others of leading shared decision making with clear recommendations to patients and families even in more complex clinical situations
Assessment Models or Tools	● Direct observation ● Kalamazoo Essential Elements Communication Checklist (Adapted) ● Multisource feedback ● 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 or structured case discussions
Curriculum Mapping	●
Notes or Resources	● Laidlaw A, Hart J. Communication skills: an essential component of medical curricula. Part I: Assessment of clinical communication: AMEE Guide No. 51. *Med Teach*. 2011;33(1):6-8. https://www.researchgate.net/publication/49706184_Communication_skills_An_essential

component_of_medical_curricula_Part_I_Assessment_of_clinical_communication_AMEE _Guide_No_511. 2019.
- Makoul G. Essential elements of communication in medical encounters: The Kalamazoo consensus statement. *Acad Med*. 2001;76(4):390-393. https://www.researchgate.net/publication/264544600_Essential_elements_of_communicat ion_in_medical_encounters_The_Kalamazoo_Consensus_Statement. 2019.
- Makoul G. The SEGUE Framework for teaching and assessing communication skills. *Patient Educ Couns*. 2001;45(1):23-34. https://www.researchgate.net/publication/11748796_The_SEGUE_Framework_for_teachi ng_and_assessing_communication_skills. 2019.
- Symons AB, Swanson A, McGuigan D, Orrange S, Akl EA. A tool for self-assessment of communication skills and professionalism in residents. *BMC Med Educ*. 2009;9:1. https://bmcmededuc.biomedcentral.com/articles/10.1186/1472-6920-9-1. 2019.

Interpersonal and Communication Skills 2: Interprofessional and Team Communication	
Overall Intent: To effectively communicate with the health care team, including consultants	

Milestones	**Examples**
Level 1 *Uses respectful language that values all members of the health care team*	● Shows respect in health care team communications through words and actions ● Uses respectful communication with colleagues in allied health rehabilitation disciplines, clerical staff members, and technical staff members ● Listens to and considers others' points of view, is nonjudgmental and actively engaged, and demonstrates humility
Level 2 *Communicates information effectively with all health care team members* *Solicits feedback on performance as a member of the health care team*	● Verifies understanding of own communications within the health care team ● Demonstrates active listening by fully focusing on the speaker, making eye contact and reflecting on and summarizing the conversation ● Communicates clearly and concisely in an organized and timely manner during consultant encounters, as well as with the health care team in general
Level 3 *Checks own understanding while listening to adapt communication style to fit team needs* *Communicates concerns and provides feedback to members of the health care team*	● Verifies own understanding of communications from staff member by restating critical values and unexpected diagnoses ● Raises concerns or provides opinions and feedback when needed to others on the team ● Uses teach-back or other strategies to assess understanding during consultations ● Respectfully provides feedback to junior members of the medical team for the purposes of improvement Identifies and seeks to resolve barriers to communication
Level 4 *Coordinates recommendations and communication from different members of the health care team to optimize patient care* *Communicates feedback and constructive criticism to superiors*	● Supportive of group decision making and group responsibility reflective of a collaborative interdisciplinary team model ● Adapts communication strategies in handling complex situations ● Offers suggestions to negotiate or resolve conflicts among health care team members; raises concerns or provides opinions and feedback, when needed, to superiors on the team
Level 5 *Role models flexible communication strategies that value input from all health care team members, resolving conflict when needed* *Facilitates regular health care team-based feedback in complex situations*	● Communicates with all health care team members, resolves conflicts, and provides feedback appropriate to any situation ● Organizes a team meeting to discuss and resolve potentially conflicting points of view on a plan of care
Assessment Models or Tools	● Direct observation ● Global assessment ● Multisource assessment ● Record or chart review for professionalism and accuracy in written communications

	● Simulation encounters
Curriculum Mapping	●
Notes or Resources	● Roth CG, Eldin KW, Padmanabhan V, Freidman EM. Twelve tips for the introduction of emotional intelligence in medical education. *Med Teach.* 2018:1-4. https://www.tandfonline.com/doi/full/10.1080/0142159X.2018.1481499. 2019. ● Green M, Parrott T, Cook G. Improving your communication skills. *BMJ.* 2012;344:e357. https://www.bmj.com/content/344/bmj.e357. 2019. ● Henry SG, Holmboe ES, Frankel RM. Evidence-based competencies for improving communication skills in graduate medical education: a review with suggestions for implementation. *Med Teach.* 2013;35(5):395-403. https://www.tandfonline.com/doi/full/10.3109/0142159X.2013.769677. 2019. ● King JC, Blankenship KJ, Schalla W, Mehta A. Rehabilitation Team Function and Prescriptions, Referrals, and Order Writing. In: Frontera WR. DeLisa's *Physical Medicine and Rehabilitation*. 5th Ed. Philadelphia, PA; 2010:362-384. https://musculoskeletalkey.com/rehabilitation-team-function-and-prescriptions-referrals-and-order-writing/. 2019.

Interpersonal and Communication Skills 3: Communication within Health Care Systems	
Overall Intent: To effectively communicate using a variety of methods	

Milestones	Examples
Level 1 *Accurately records information in the patient record while safeguarding patient personal health information*	● Notes are accurate but may include extraneous information and can be disorganized
Demonstrates basic knowledge of appropriate channels of communication within the institution (e.g., pager callback, timely response to emails)	● Identifies institutional and departmental communication hierarchy for concerns and safety issues ● Understands how to contact members of the interprofessional team
Level 2 *Demonstrates organized and complete diagnostic and therapeutic reasoning through notes in the patient record, including appropriate modifications when using copy-and-paste function*	● Notes are organized and accurate but may still contain some extraneous information ● Assists with documentation of team meeting
Communicates through appropriate channels as required by institutional policy (e.g. patient safety reports)	● Recognizes that a communication breakdown has happened and respectfully brings the breakdown to the attention of the appropriate individual ● Reports a patient safety event
Level 3 *Communicates clearly, concisely, timely, and in an organized written form, including anticipatory recommendations*	● Documentation is accurate, organized, concise, and includes anticipatory (if/then) guidance
Appropriately selects direct (e.g. telephone, in-person) and indirect (e.g. progress notes, text messages) forms of communication based on context	● Uses appropriate communication method when sharing results needing urgent attention
Level 4 *Provides feedback to improve others' written communication*	● Provides feedback to colleagues who have insufficient documentation ● Talks directly to a colleague about breakdowns in communication in order to prevent recurrence
Achieves written or verbal communication that serves as an example for others to follow	● Participates in efforts to improve communication within the local environment
Level 5 *Models feedback to improve others' written communication*	● Leads a task force established by the department to develop a plan to improve house staff hand-offs

Guides departmental or institutional communication around policies and procedures	● Teaches colleagues how to improve discharge summaries
Assessment Models or Tools	● Chart review for documented communications ● Multisource feedback ● Observation of sign-outs, observation of requests for consultations
Curriculum Mapping	●
Notes or Resources	● Bierman JA, Hufmeyer KK, Liss DT, Weaver AC, Heiman HL. Promoting responsible electronic documentation: validity evidence for a checklist to assess progress notes in the electronic health record. *Teach Learn Med.* 2017;29(4):420-432. https://www.tandfonline.com/doi/full/10.1080/10401334.2017.1303385. 2019. ● Starmer AJ, Spector ND, Srivastava R, et al. I-PASS, a mnemonic to standardize verbal handoffs. *Pediatrics.* 2012;129(2):201-204. https://ipassinstitute.com/wp-content/uploads/2016/06/I-PASS-mnemonic.pdf. 2019. ● Haig KM, Sutton S, Whittington J. SBAR: a shared mental model for improving communication between clinicians. *Jt Comm J Qual Patient Saf.* 2006;32(3)167-175. https://www.ncbi.nlm.nih.gov/pubmed/16617948. 2019.

In an effort to aid programs in the transition to using the new version of the Milestones, the original Milestones 1.0 have been mapped to the new Milestones 2.0. Also indicated below are where the subcompetencies are similar between versions. These are not necessarily exact matches but are areas that include some of the same elements. Note that not all subcompetencies map between versions. Inclusion or exclusion of any subcompetency does not change the educational value or impact on curriculum or assessment.

Milestones 1.0	Milestones 2.0
PC1: History (Appropriate for age and impairment)	PC1: Physiatric History, Appropriate for Age and Impairment
PC2: Physiatric Physical Examination	PC2: Physical Examination
PC3: Diagnostic Evaluation	MK2: Clinical Reasoning
PC4: Medical Management	PC3: Medical Management
PC5: Rehabilitation/Functional Management	PC5: Assistive Technologies PC6: Rehabilitation Interventions
PC6: Procedural Skills	PC4: Procedural Skills: Injections for Abnormalities of Tone or Movement PC5: Procedural Skills: Joint and Soft Tissue Injections
PC7: Procedural Skills: Electrodiagnostic Procedures	PC6: Procedural Skills: Electrodiagnostic Procedures
MK: Psychiatric Knowledge	MK1: Foundational Principles of Physiatric Practice
SBP1: Systems thinking	SBP3: System Navigation for Patient-Centered Care SBP4: Physician Role in Health Care Systems
SBP2: Team approach to enhance patient care coordination	ICS2: Patient and Family Education
SBP3: Patient Safety	SBP1: Patient Safety
PBLI1: Self-Directed Learning and Teaching	PBLI2: Reflective Practice and Commitment to Personal Growth
PBLI2: Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems	PBLI1: Evidence-Based and Informed Practice
PBLI3: Quality Improvement (QI)	SBP2: Quality Improvement
PROF1: Compassion, integrity, and respect for others, as well as sensitivity and responsiveness to diverse patient populations, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation	PROF1: Ethical Principles ICS2: Interprofessional and Team Communication
PROF2: Knowledge about, respect for, and adherence to the ethical principles (including beneficence, least harm, respect for autonomy, and justice) relevant to the practice of medicine	PROF1: Ethical Principles

PROF3: Professional behaviors and accountability to self, patients, society, and the profession	PROF2: Professional Behavior PROF3: Accountability
ICS1: Relationship Management	ICS1: Patient and Family-Centered Communication
ICS2: Information Gathering and Sharing	ICS1: Patient and Family-Centered Communication ICS2: Interprofessional and Team Communication ICS3: Interprofessional and Team Communication
No match	PROF4: Patient Care Etiquette with Patients of All Abilities
No match	PROF5: Resident Well-Being and Help-Seeking

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/