# Supplemental Guide: Pediatric Rehabilitation Medicine



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### **Milestones Supplemental Guide**

This document provides additional guidance and examples for the Pediatric 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 (<u>Supplemental Guide Template available</u>) 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 <u>Resources</u> page of the Milestones section of the ACGME website.

Patient Care 1: History for Pediatric Rehabilitation Patients Overall Intent: To obtain a thorough and appropriate history, focusing on function and relevant psychosocial context; to ultimately optimize patient outcomes

Milestones	Examples
<b>Level 1</b> Acquires and presents a basic pediatric physiatric history, including medical, functional, and psychosocial elements	• While assessing a patient with developmental delay, elicits a history of prematurity with intraventricular hemorrhage and left-sided weakness, delays in gross motor milestones including delayed independent sitting at two years old; in addition to birth history, elicits that there is no other relevant past medical or surgical history
<b>Level 2</b> Acquires and presents a comprehensive pediatric physiatric history identifying all components of functioning, including development, impairments, activities, participation, and contextual factors	• While assessing a 10 year old with spastic diplegic cerebral palsy, assesses function in activities at school and at home, inquires about functional challenges that may impact participation in various settings, and assesses detailed review of symptoms to capture impairments including visual, hearing, cognitive, swallowing, and mental health
<b>Level 3</b> Acquires and presents a relevant pediatric physiatric history in a prioritized fashion, integrating components of functioning within the context of development	<ul> <li>During the assessment of a 16-year-old football player presenting with a mild traumatic brain injury, elicits relevant history of prior injuries, prior mental health or cognitive disorders, sport-specific activities including current training regimen, and other factors that may impact recovery (e.g., sleep disorders, current stressors)</li> <li>During the presentation of the history of a patient with prolonged hospitalization, includes pertinent medical complications with direct impact on rehabilitation</li> </ul>
<b>Level 4</b> Elicits and presents key pediatric physiatric history, including subtleties, in a prioritized and efficient fashion across a spectrum of ages and impairments	• When an 18-month-old patient presents with language delays, elicits a history including concerns for hearing acuity and birth history significant for cytomegalovirus (CMV), inquires about prior work-up including imaging, laboratory studies, and consultations with other specialists, and reviews speech therapy notes to assess progress and goals
<b>Level 5</b> Role models the effective gathering and presentation of subtle and salient pediatric physiatric history from patients across a spectrum of ages and impairments	<ul> <li>Effectively presents to the medical student class on how to take a pediatric physiatric history</li> <li>Role models the presentation of a salient pediatric physiatric history for the multidisciplinary team</li> </ul>
Assessment Models or Tools	<ul> <li>Direct observation</li> <li>Medical record (Chart) review</li> <li>Multisource feedback</li> <li>Objective structured clinical examination (OSCE)</li> <li>Resident observation and competency assessment</li> <li>Simulation</li> </ul>
Curriculum Mapping	
Notes or Resources	Textbooks

### Patient Care 2: Physical Examination for Pediatric Rehabilitation Patients

**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
<b>Level 1</b> Performs and presents a basic pediatric physiatric examination	<ul> <li>Identifies impairments with age-appropriate functional use of upper and lower extremities for a toddler presenting with frequent falls</li> </ul>
<b>Level 2</b> Performs and presents a comprehensive, developmentally appropriate pediatric physiatric examination	• Engages a 5-year-old patient to assess intermittent toe-walking, completes a musculoskeletal (e.g., spine and lower extremities) and neurological (e.g., strength, tone, reflexes) exam, and assesses for other developmental impairments including speech and fine motor skills
<b>Level 3</b> Performs and presents a hypothesis- driven pediatric physiatric examination, with identification of subtle or atypical findings over a spectrum of ages and impairments	• When a 10-year-old patient with a C6 American Spinal Injury Association Impairment Scale (AIS) A spinal cord injury presents with fever, diaphoresis, and headache, identifies a sacral pressure ulcer as the etiology of these symptoms
<b>Level 4</b> Efficiently performs and presents a hypothesis-driven pediatric physiatric examination, with identification of subtle or atypical findings over a spectrum of ages and impairments	<ul> <li>While assessing a 16-year-old patient with a traumatic brain injury, assesses for accompanying injuries (e.g., long bone fractures, sixth cranial nerve (CN 6) palsy) or behavioral changes, performs appropriate initial exam to assess for post-traumatic amnesia, tests motor strength, balance, coordination, gait, etc., and performs serial exams to monitor ongoing neurocognitive recovery</li> <li>Performs the Hammersmith infant neurological examination</li> </ul>
<b>Level 5</b> Role models a hypothesis-driven pediatric physiatric examination that identifies subtle or atypical findings over a spectrum of ages and impairments	<ul> <li>Effectively presents to the medical student class what maneuvers to perform during the pediatric physiatric examination based on the differential diagnosis</li> <li>Leads a workshop on neuromusculoskeletal examination of children</li> </ul>
Assessment Models or Tools	<ul> <li>Direct observation</li> <li>Medical record (Chart) review</li> <li>Multisource feedback</li> <li>OSCE</li> <li>Resident observation and competency assessment</li> <li>Simulation</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul> <li>Conferences and workshops</li> <li>Physiatric examination is defined as examination to guide the rehabilitation management</li> </ul>

### Patient Care 3: Differential Diagnosis of Pediatric Rehabilitation Medicine Patients

**Overall Intent:** To consistently develop a complete and prioritized differential diagnosis that leads to efficient and appropriate diagnostic testing and treatment

Milestones	Examples
<b>Level 1</b> Produces a basic differential diagnosis for common pediatric physiatric disorders and associated conditions	• Presents a basic differential diagnosis for delayed milestones and toe walking with basic considerations include idiopathic toe walking, autism, cerebral palsy
<b>Level 2</b> Generates a comprehensive differential diagnosis that includes pediatric physiatric disorders and associated conditions	• For the example in Level 1: Expands the differential diagnosis to include peripheral nerve disorders, neuromuscular disorders, spinal dysraphism
<b>Level 3</b> Develops a focused, age-appropriate differential diagnosis, including pediatric medical conditions and less common conditions	<ul> <li>Identifies Rett Syndrome in a young girl with toe walking, autistic features, and developmental regression</li> </ul>
<b>Level 4</b> <i>Produces a prioritized differential diagnosis across a spectrum of ages and impairments</i>	<ul> <li>Differentiates the cause of cavus foot deformity based on age of presentation</li> </ul>
<b>Level 5</b> Efficiently produces a focused and prioritized differential diagnosis accounting for rare conditions	• With normal serum studies and brain imaging, identifies rare or less commonly known diagnoses in the differential for hypotonia such as metabolic and genetic disorders
Assessment Models or Tools	<ul> <li>Case-based assessment</li> <li>Direct observation</li> <li>Medical record (Chart) review</li> <li>Multisource feedback</li> <li>OSCE</li> <li>Resident observation and competency assessment</li> <li>Simulation</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul> <li>Evidence-based/consensus guidelines</li> <li>Systematic reviews</li> <li>Textbooks</li> </ul>

### Patient Care 4: Diagnostic Evaluation of Pediatric Rehabilitation Medicine Patients

**Overall Intent:** To efficiently prioritize and interpret diagnostic testing and assessment measurements to optimize patient management

Milestones	Examples
<b>Level 1</b> Orders appropriate diagnostic studies for conditions commonly seen in pediatric physiatry (e.g., dysplastic hip), based on established guidelines or consensus	• Orders urologic assessment and urodynamic studies in an infant with spina bifida
<b>Level 2</b> Orders comprehensive, hypothesis- driven diagnostic studies for conditions commonly seen in pediatric physiatry	• Orders endocrine labs based on suspicion of hypothalamus-pituitary-adrenal axis disorder in traumatic brain injury
Identifies common pediatric assessment tools and outcome measures	<ul> <li>Assigns appropriate gross motor function classification system level for a patient with cerebral palsy</li> </ul>
<b>Level 3</b> Appropriately prioritizes the sequence and urgency of diagnostic testing, and begins to interpret results to guide further management	• In a spinal cord patient with new on set urinary incontinence, orders urinalysis to evaluate for urinary tract infection, then progresses to bladder studies
Uses appropriate outcome measures and scales for diagnoses	<ul> <li>In a patient with a traumatic brain injury, appropriately identifies and uses Glasgow Coma Scale, Post Traumatic Amnesia, Childhood Orientation and Amnesia Tool</li> </ul>
<b>Level 4</b> Orders diagnostic testing and assessment tools based on cost effectiveness and likelihood that results will influence clinical management (e.g., gait analysis)	Orders electromyography to prioritize which genetic tests to order in Charcot-Marie-Tooth disease
Integrates knowledge of functional goals, results of pediatric assessment tools, and prognosis to optimize patient management	<ul> <li>Uses evidence-based assessment tools (e.g., On track, Toronto Scale) to provide anticipatory guidance to families regarding function potential</li> </ul>
<b>Level 5</b> Streamlines testing for cost effectiveness and minimal patient and family burden	Spearheads the implementation of validated assessment tools for clinical use
Serves as a resource to others for the implementation of assessment tools and outcome measures	
Assessment Models or Tools	Case-based assessment
	Direct observation

	<ul> <li>Medical record (Chart) review</li> <li>Multisource feedback</li> <li>OSCE</li> <li>Resident observation and competency assessment</li> <li>Simulation</li> </ul>
Curriculum Mapping	•
Notes or Resources	Evidence-based/consensus guidelines
	Systematic reviews
	Textbooks

### Patient Care 5: Medical Management of Pediatric Rehabilitation Medicine Patients

**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
<b>Level 1</b> Identifies and manages general medical conditions and their complications	<ul> <li>Identifies neurogenic bladder as a significant medical issue for a child with spinal cord dysfunction on the inpatient rehabilitation service, and orders strict monitoring of intake and output, a scheduled urinary catherization program, and requests a urology consultation to assist with longitudinal management and considers developmental age in the goal setting for urinary continence</li> </ul>
<b>Level 2</b> Identifies and manages complications related to complex medical, neurological, and musculoskeletal disorders	• Identifies an evolving ankle plantarflexion contracture in a child with cerebral palsy who comes to the outpatient clinic for a follow-up one year from previous assessment, and institutes a treatment program to improve range of motion and compensate for leg length discrepancy
<b>Level 3</b> Develops and implements a comprehensive evidence-based treatment plan that anticipates and addresses complications related to medical, neurological, and musculoskeletal disorders	<ul> <li>Identifies and manages stroke-related impairments in pediatric and young adult patients, and implements preventative measures to minimize secondary complications</li> </ul>
<b>Level 4</b> Develops a treatment plan that anticipates and addresses complications across the spectrum of ages (e.g., complications that occur in adulthood from a childhood onset condition)	<ul> <li>Assesses an outpatient who has a transtibial amputation, documents detailed and appropriate management of the residual limb to promote healing and prevent skin breakdown and provide education about functional expectation and long-term potential complications in residual limb including bony growth and leg length inequality</li> </ul>
<b>Level 5</b> Role models the development and implementation of a comprehensive treatment plan, including consideration of emerging treatments	• Educates a patient's family and/or caregivers in well-established and emerging options for management of the motor deficits related to a diagnosis of spinal muscular atrophy
Assessment Models or Tools	<ul> <li>Case-based assessment</li> <li>Direct observation</li> <li>Medical record (Chart) review</li> <li>Multisource feedback</li> <li>OSCE</li> <li>Resident observation and competency assessment</li> <li>Simulation</li> </ul>
Curriculum Mapping	
Notes or Resources	Clinical guidelines

• Textbooks

### Patient Care 6: Rehabilitation/Functional Management of Pediatric Rehabilitation Medicine Patients – Assistive Devices and Technologies

**Overall Intent:** To generate a detailed prescription, in consultation with other professionals, for a full range of assistive devices and technologies, including justification and advocacy, taking into consideration the assessment of impairments, barriers, contraindications and comorbidities, and patient goals

Milestones	Examples
<b>Level 1</b> Evaluates patient need for common assistive devices and technologies based on impairment	• Explains the general indications for a walker in a child with cerebral palsy
<b>Level 2</b> Evaluates patient need for a full range of assistive devices and technologies based on impairments, accounting for barriers, contraindications, comorbidities, issues related to growth and development, and input from other professionals	<ul> <li>Explains the specific indications for a gait trainer, walker, or forearm crutches in the gait progression of a child with cerebral palsy</li> <li>Demonstrates ability to evaluate patient readiness for power mobility</li> <li>Justifies need for specific ankle-foot orthosis to address crouch gait, jump gait, dorsiflexion weakness, or spastic equinus</li> </ul>
<b>Level 3</b> Generates a detailed prescription, in consultation with other professionals, for a full range of assistive devices and technologies, including justification and advocacy where needed	<ul> <li>Responds to a physical therapist's concern about a patient's ability to safely navigate within his home and community due to cognitive impairment and difficulty with motor coordination; provides a detailed prescription for a gait trainer within the home and a manual wheelchair for the community</li> <li>Provides a detailed prescription for assistive technologies for a patient with severe expressive aphasia and visual impairment in collaboration with a speech pathologist and advocates for use in the school setting</li> </ul>
<b>Level 4</b> Serves as a resource to other professionals for clinical problem solving and functional challenges related to assistive devices and technologies	• For a young athlete with a transfemoral amputation, presents to the multidisciplinary prosthetic clinic for a prosthesis with componentry that will allow her to continue to participate in her sport; 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
<b>Level 5</b> Involved in research/development of novel assistive devices or technologies	<ul> <li>Is involved in research looking at novel computer interface(s) or integration of motion capture video games as a therapeutic tool</li> </ul>
Assessment Models or Tools	<ul> <li>Case-based assessment</li> <li>Direct observation</li> <li>Medical record (Chart) review</li> <li>Multisource feedback</li> <li>OSCE</li> <li>Resident observation and competency assessment</li> <li>Simulation</li> </ul>

Curriculum Mapping	•
Notes or Resources	Prosthetics and orthotics courses
	Textbooks

Patient Care 7: Rehabilitation/Functional Management of Pediatric Rehabilitation Medicine Patients – Rehabilitation Interventions Overall Intent: To generate a detailed prescription for a full range of therapy interventions, taking into consideration the patient's impairments, developmental stage, condition-specific goals and precautions, response to previous therapy interventions, and patient and family goals

Milestones	Examples
<b>Level 1</b> Prescribes common rehabilitation therapies for children based on impairments	<ul> <li>Prescribes physical therapy for a child with a gait impairment and lower extremity weakness</li> </ul>
<b>Level 2</b> Prescribes common rehabilitation therapies accounting for developmental needs and understanding expected goals	<ul> <li>Prescribes physical therapy for a nine-month-old child with lower extremity weakness to work on crawling, sitting independently, and accepting weightbearing in preparation for gait training</li> </ul>
<b>Level 3</b> Generates specific therapy prescriptions, targeting for condition-specific goals and precautions	• Prescribes physical therapy for an eight-year-old boy with Duchenne muscular dystrophy with recommendations to instruct in range of motion program targeting ankle plantarflexors, hamstrings, and hip flexors and avoidance of strengthening activities
<b>Level 4</b> Monitors and adjusts the therapy interventions based on previous results and reassessment	• In an 18-month-old child with high lumbar myelomeningocele who has significant lower extremity weakness and has failed to progress in ambulation training in physical therapy, redirects therapist to focus on range of motion, use of standing frame, and obtainment of a mobility device
<b>Level 5</b> Participates in research and development of novel therapy interventions	• Participates in a research study evaluating the impact of physical therapy interventions on prognosis for ambulation in children with spina bifida
Assessment Models or Tools	<ul> <li>Case-based assessment</li> <li>Direct observation</li> <li>Medical record (Chart) review</li> <li>Multisource feedback</li> <li>OSCE</li> <li>Resident observation and competency assessment</li> <li>Simulation</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul> <li>Evidence-based / consensus guidelines</li> <li>Textbooks</li> </ul>

### Patient Care 8: Procedural Skills in Pediatric Rehabilitation Medicine

Overall Intent: To ensure knowledge of and the ability to perform or appropriately refer for the full range of procedures that are available to treat childhood hypertonia

Milestones	Examples
<b>Level 1</b> Demonstrates basic understanding of indications for various spasticity procedures in pediatric patients	• Explains the indications for chemodenervation and intrathecal baclofen therapy
Performs procedures with hands-on assistance	
<b>Level 2</b> Provides basic education to patients and families regarding procedure-specific information and treatment options and obtains informed consent	• Educates patients and families that the effects of chemodenervation agents are localized and temporary, that there is a risk for systemic spread, and explains expected benefits including onset and duration of effects
Performs procedures with verbal guidance	
<b>Level 3</b> Selects spasticity procedures based on individual condition; provides in-depth education to patients and families regarding procedure- specific information and treatment options	• Educates patients and families on the mechanism of action of chemodenervation agents, specific adverse effects associated with systemic spread, and adjunctive therapies to maximize treatment effects; identifies appropriate muscles and dose/concentration for chemodenervation agents
Modifies procedures to accommodate patient's impairments and minimize discomfort; consistently performs procedures without attending direction	• For a chemodenervation procedure, considers which patients might require sedation
<b>Level 4</b> Troubleshoots spasticity interventions that are ineffective or when complications arise Skillfully performs a wide variety of procedures and teaches others in the safe performance of these procedures	<ul> <li>Effectively evaluates lack of efficacy of chemodenervation agents by considering suboptimal adjunctive therapies, or antibody formation, and potential benefits of alternative toxin types or localization techniques</li> </ul>
<b>Level 5</b> Effectively uses spasticity procedures in complex clinical scenarios Develops a curriculum	• Determines a suitable treatment plan in a patient where there is not one clear optimal hypertonia treatment due to lack of response to previous treatments, risk of systemic spread, difficulty predicting functional gains, or potential for poor adherence to adjunctive therapies
Assessment Models or Tools	<ul> <li>Case-based assessment</li> <li>Direct observation</li> <li>Medical record (Chart) review</li> </ul>

	<ul> <li>Multisource feedback</li> <li>OSCE</li> <li>Resident observation and competency assessment</li> <li>Simulation</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul><li>Evidence-based/consensus guidelines</li><li>Textbooks</li></ul>

Medical Knowledge 1: Physiatric Knowledge Overall Intent: To integrate foundational knowledge into physiatric practice across a spectrum of ages, impairments, and clinical settings	
Milestones	Examples
<b>Level 1</b> Demonstrates basic knowledge of complex pediatric medical conditions and basic preventive care	<ul> <li>Knows appropriate vital signs for age</li> <li>Calculates bladder volume using Burger's equation</li> <li>Applies weight-based dosing</li> </ul>
<b>Level 2</b> Synthesizes physiatric knowledge of common pediatric rehabilitation disorders, secondary conditions, treatment options, and complications	<ul> <li>Understands expected age-related changes of the musculoskeletal system</li> <li>Provides age-appropriate bowel/bladder management for a patient with a spinal cord injury</li> </ul>
<b>Level 3</b> Synthesizes physiatric knowledge of complex pediatric rehabilitation disorders, secondary conditions, treatment options, and complications	<ul> <li>Recognizes osteopenia as a secondary complication of immobility in children with cerebral palsy</li> <li>Recognizes the risk of subsequent development of scoliosis with growth after cervical spinal cord injury in a prepubescent child</li> </ul>
<b>Level 4</b> Integrates physiatric knowledge into practice across a spectrum of ages, impairments, educational and clinical scenarios	<ul> <li>Identifies the potential need for transition to a power wheelchair in anticipation of an adolescent patient navigating a college campus</li> </ul>
<b>Level 5</b> Serves as a resource for others for new and emerging concepts and investigation relevant to foundational principles of physiatric practice	<ul> <li>Writes a clinical review on stem cell treatment after brain injury</li> <li>Presents results of research project at a scientific meeting</li> </ul>
Assessment Models or Tools	<ul> <li>Case-based assessment</li> <li>Direct observation</li> <li>Resident observation and competency assessment</li> <li>Simulation</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul> <li>Guidelines</li> <li>Journals</li> <li>Online materials/modules</li> <li>Textbooks</li> </ul>

Medical Knowledge 2: Growth and Development		
Overall Intent: To understand and apply knowledge about development and growth throughout childhood and adolescence and the potential		
impact impairments in these areas have on functional capabilities		
Milestones	Examples	
Level 1 Demonstrates knowledge of basic	<ul> <li>Demonstrates the ability to assess developmental milestones using an age-appropriate,</li> </ul>	
growth and developmental milestones	evidence-based screening tool	
<b>Level 2</b> Recognizes atypical growth or development (e.g., recognition of persistent primitive reflexes)	<ul> <li>Recognizes developmental red flags in gross motor, fine motor, speech-language, cognitive and social-emotional domains and institutes therapy interventions/referrals to address</li> </ul>	
Demonstrates knowledge of anatomy and physiology related to growth (e.g., bladder volume, skeletal immaturity, pubertal maturation)	<ul> <li>Calculates an appropriate fluid intake goal and bladder volume maximum for a child with spinal cord injury who is starting a clean intermittent urinary catheterization program</li> </ul>	
<b>Level 3</b> Recognizes influence of development and impairment level on current functional capabilities	<ul> <li>Assesses cognitive and fine motor skills of a child with myelomeningocele to determine their readiness for self-catheterization</li> </ul>	
Applies knowledge of pathophysiology to the growth and development of a child (e.g., precocious puberty in brain disorders, hip dysplasia with cerebral palsy)	<ul> <li>Identifies that a patient with cerebral palsy may have precocious puberty</li> </ul>	
<b>Level 4</b> Applies knowledge of developmental trajectory to provide a functional prognosis	<ul> <li>Uses knowledge of developmental milestones and age at acquisition for a child with cerebral palsy to provide anticipatory guidance and realistic rehabilitation expectations for parents and therapists</li> </ul>	
Synthesizes the knowledge of anatomy and physiology in the context of prevention and treatment (e.g., use of practice guidelines for osteopenia and hip dysplasia in cerebral palsy)	Demonstrates use of evidence-based hip surveillance guidelines in cerebral palsy and effectively counsels parents on likelihood of need for surgical intervention	
<b>Level 5</b> Collaborates on the development of practice guidelines or educational resources for clinicians in the area of growth and development	<ul> <li>Establishes a hip surveillance screening program in their health system or community for children with spastic cerebral palsy based upon international evidence-based hip surveillance guidelines</li> </ul>	
Assessment Models or Tools	Case-based assessment	
	Direct observation	
	<ul> <li>Resident observation and competency assessment</li> </ul>	
	Simulation	

Curriculum Mapping	•
Notes or Resources	Guidelines
	• Journals
	Online materials/modules
	Textbooks

### Systems-Based Practice 1: Patient Safety in Pediatric Rehabilitation

**Overall Intent:** To engage in the analysis, management, and prevention of patient safety events, including relevant communication with patients, families, and health care professionals

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

	<ul> <li>Multisource feedback</li> <li>Portfolio</li> <li>Simulation</li> </ul>
Curriculum Mapping	•
Notes or Resources	• Institute of Healthcare Improvement. <u>http://www.ihi.org/Pages/default.aspx</u> . 2021.

Systems-Based Practice 2: Quality Improvement (QI) in Pediatric Rehabilitation Overall Intent: To develop an understanding of QI principles and engage in QI activities	
Milestones	Examples
<b>Level 1</b> Demonstrates knowledge of basic quality improvement methodologies and metrics	<ul> <li>Has basic knowledge of QI principles and strategies, but has not yet participated in such activities</li> </ul>
Level 2 Describes quality improvement initiatives	Is aware of improvement initiatives within their scope of practice
Level 3 Participates in quality improvement initiatives	<ul> <li>Participates in a QI activity to improve patient hand-offs</li> </ul>
<b>Level 4</b> Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project	<ul> <li>Initiates a QI project with the use of a standardized template for hand-offs and analyzes the results</li> </ul>
<b>Level 5</b> Creates, implements, and assesses quality improvement initiatives at the institutional or community level	<ul> <li>Competently assumes an active role at the departmental or institutional level for continuous QI initiatives, possibly even being the person to initiate action or call attention to the need for action</li> </ul>
Assessment Models or Tools	<ul> <li>Chart or other system documentation by fellow</li> <li>Direct observation</li> <li>Documentation of QI or patient safety project processes or outcomes</li> <li>E-module multiple choice tests</li> <li>Multisource feedback</li> <li>Portfolio</li> <li>Simulation</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul> <li>American Academy of Physical Medicine and Rehabilitation. QI Guidelines Resource <u>https://www.aapmr.org/quality-practice/evidence-based-medicine/clinical-practice-guidelines/guideline-resources</u>. 2021.</li> <li>ABPMR QI Guidelines Resource</li> <li>Institute of Healthcare Improvement. http://www.ihi.org/Pages/default.aspx. 2021.</li> </ul>

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	
<b>Level 1</b> Demonstrates understanding and knowledge of care coordination	<ul> <li>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</li> </ul>	
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	
<b>Level 2</b> Coordinates care of patients in routine clinical situations effectively using the roles of the interprofessional team members	<ul> <li>Coordinates with interprofessional team members for routine cases, but requires supervision to ensure all necessary referrals and testing are made</li> </ul>	
Performs safe and effective transitions of care/hand-offs in routine clinical situations	<ul> <li>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</li> </ul>	
Identifies specific population and community health needs and inequities for the local population	<ul> <li>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</li> </ul>	
<b>Level 3</b> Coordinates care of patients in complex clinical situations effectively collaborating with members of the interprofessional teams	<ul> <li>Develops a comprehensive treatment plan in coordination with consultants from other medical specialties, therapies, etc.</li> </ul>	
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 the local population and community to minimize health care inequities	<ul> <li>Identifies a discount pharmacy card that can be used at the local pharmacy</li> </ul>	

<b>Level 4</b> Role models effective coordination of patient-centered care among different professions and specialties	• Role models and educates students and 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 different levels of health care and settings	<ul> <li>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</li> </ul>
Participates in changing and adapting practice to provide equitable accessible and quality care for specific populations	<ul> <li>Identifies patient populations at high risk for poor health care outcomes due to health disparities and inequities, and implements strategies to improve care</li> </ul>
<b>Level 5</b> 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
Leads quality improvement of transitions of care within and across different levels of health care and settings 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 to make sustainable improvements	<ul> <li>Designs a social determinants of health curriculum to help others learn to identify local resources and barriers to care</li> </ul>
Assessment Models or Tools	• Case management quality metrics and goals mined from electronic health records (EHR)
	Medical record (Chart) review
	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, 2021
	• Skochelak SF, Hawkins RF, Lawson LF, 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 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	
<b>Level 1</b> Identifies key components of the health care system, including the various venues for post-acute care	<ul> <li>Identifies that post-acute care includes acute inpatient rehabilitation facilities, skilled nursing facilities, long-term acute care hospitals</li> </ul>	
Describes basic health payment systems (e.g., government, private, public, uninsured care) and practice models	<ul> <li>Names systems and providers involved in test ordering and payment</li> </ul>	
Identifies basic knowledge domains for effective transition to practice (e.g., information technology, legal, billing and coding, financial, personnel)	<ul> <li>Recognizes that Medicare, Medicaid, and commercial third-party payors are different payment systems</li> </ul>	
<b>Level 2</b> Describes how components of a health care system are interrelated, and how this impacts patient care	<ul> <li>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; does not yet modify personal practice to enhance outcomes</li> </ul>	
Identifies care plan that is compatible with each patient's payment model (e.g., insurance type) and obstacles for delivery	<ul> <li>Applies knowledge of health plan features, including formularies and network requirements in patient care situations</li> </ul>	
Demonstrates use of information technology required for medical practice (e.g., electronic health record, documentation required for billing and coding)	<ul> <li>Uses hospital EHR to write notes that meet basic requirements for billing</li> </ul>	
<b>Level 3</b> Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)	<ul> <li>Understands that extended length of stay impacts the ability of other patients to have an inpatient bed and increases costs</li> </ul>	
Engages with patients and families in shared decision making, informed by each patient's payment models	<ul> <li>Uses shared decision making and adapts the choice of the most cost-effective testing depending on the relevant clinical needs</li> </ul>	

Describes core administrative knowledge needed for transition to practice (e.g., contract negotiations, malpractice insurance, government regulation, compliance)	<ul> <li>Knows that there are state laws requiring malpractice insurance</li> </ul>
<b>Level 4</b> Navigates the various components of the health care system to provide efficient and effective patient care and transition of care	<ul> <li>Works collaboratively with other services to identify patient assistance resources</li> </ul>
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	<ul> <li>Recognizes the need in practice to set aside time for "New Patient" slots in a busy clinical practice setting</li> </ul>
<b>Level 5</b> Advocates for or leads systems change that enhances high-value, efficient and effective patient care and transition of care	<ul> <li>Works with community or professional organizations to advocate for no smoking ordinances</li> </ul>
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	<ul> <li>Medical record (Chart) review</li> <li>Direct observation</li> <li>Multisource feedback</li> <li>Patient satisfaction data</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul> <li>Agency for Healthcare Research and Quality (AHRQ). Measuring the Quality of Physician Care. <u>https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/physician/challenges.html</u>. 2021.</li> <li>AHRQ. Major Physician Performance Sets. <u>https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/physician/measurementsets.html</u>. 2021.</li> <li>Dzau VJ, McClellan M, Burke S, et al. Vital directions for health and health care: priorities form a national academy of medicine initiative. <i>JAMA</i>. 2017;317(14):1461-1470.</li> </ul>

https://nam.edu/vital-directions-for-health-health-care-priorities-from-a-national-academy-
of-medicine-initiative/. 2021.
• The Kaiser Family Foundation. Health Reform. https://www.kff.org/topic/health-reform/.
2021.

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice Overall Intent: To incorporate evidence and patient values into clinical practice	
Milestones	Examples
<b>Level 1</b> Demonstrates how to access available evidence	<ul> <li>Identifies the clinical problem and obtains the appropriate evidence-based guideline for the patient</li> </ul>
<b>Level 2</b> Articulates clinical questions and elicits patient preferences and values to guide evidence-based care	<ul> <li>Asks the appropriate questions of the patient to elicit preferences for disease management/treatment based on the appropriate guideline</li> </ul>
<b>Level 3</b> Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients	<ul> <li>Obtains and applies evidence in the care of complex patients when there is relative agreement in what the evidence suggests</li> </ul>
<b>Level 4</b> <i>Critically appraises and applies</i> <i>evidence even in the face of uncertainty and</i> <i>conflicting evidence to guide care, tailored to the</i> <i>individual patient</i>	<ul> <li>Assesses the primary literature to address a unique patient when the evidence is unclear or emerging</li> <li>Is aware of novel therapeutic techniques or new evidence that challenges current guidelines and demonstrates the ability to appropriately apply this information</li> </ul>
<b>Level 5</b> 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	<ul> <li>Case based assessment</li> <li>Direct observation</li> <li>Journal Club</li> <li>Oral or written examination</li> <li>Research portfolio</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul> <li>Institutional Review Board (IRB) guidelines</li> <li>National Institutes of Health. Write Your Application. <u>https://grants.nih.gov/grants/how-to-apply-application-guide/format-and-write/write-your-application.htm</u>. 2021.</li> <li>U.S. National Library of Medicine. PubMed Tutorial. <u>https://www.nlm.nih.gov/bsd/disted/pubmedtutorial/cover.html</u>. 2021.</li> <li>Various journal submission guidelines</li> </ul>

Practice-Based Learning and Imp	provement 2: Reflective Practice and Commitment to Professional Growth
<b>Overall Intent:</b> To seek clinical performance inf	ormation 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 a learn	ing plan
Milestones	Examples
<i>Level 1</i> Accepts responsibility for professional development	Acknowledges need to improve
Identifies and/or acknowledges gaps between expectations and actual performance	<ul> <li>Identifies a lack of experience in caring for children with myelomeningocele as a knowledge gap</li> </ul>
Identifies opportunities to improve	Attends grand rounds on an unfamiliar diagnosis
<b>Level 2</b> Demonstrates openness to verbal feedback and other performance data	Summarizes feedback that's been received
Analyzes and reflects on the factors which contribute to performance gaps	• Increasingly able to identify performance gaps in terms of diagnostic skills and daily work; uses feedback from others
Designs and implements a learning plan, with guidance	<ul> <li>Drafts goals for learning plan but needs to use mentor feedback for effective implementation</li> </ul>
<b>Level 3</b> Seeks and incorporates verbal feedback and other performance data intermittently, in an open and reflective manner	<ul> <li>Requests input from supervisors at semi-annual reviews to gain complex insight into personal strengths and areas to improve and is appreciative and not defensive</li> </ul>
Institutes behavioral changes to narrow performance gaps	• Takes a more active leadership role during team conference on the inpatient unit
Independently designs and implements a learning plan	• Documents learning goals in a more specific and achievable manner, such that attaining them is reasonable and measurable
<b>Level 4</b> Seeks and incorporates verbal feedback and other performance data consistently, with humility and adaptability	• Regularly requests input from peers/colleagues and supervisors during clinical rotations to gain complex insight into personal strengths and areas to improve
Uses data to measure the effectiveness of the learning plan to address performance gaps and modifies accordingly	Uses multiple sources of data to evaluate the success of past learning plan and define next steps

<b>Level 5</b> Role models consistent incorporation of verbal feedback and other performance data	• Encourages other learners on the team to consider how their behavior affects the rest of the team
Mentors others on reflective practice, including the design and implementation of learning plans	Provides effective feedback for others regarding learning plans
Assessment Models or Tools	Direct observation
	Multisource feedback
	Review of learning plan
Curriculum Mapping	•
Notes or Resources	<ul> <li>Hojat M, Veloski JJ, Gonnella JS. Measurement and correlates of physicians' lifelong learning. <i>Academic Medicine</i>. 2009;84(8):1066-1074.</li> <li><u>https://journals.lww.com/academicmedicine/fulltext/2009/08000/Measurement and Correlates of Physicians Lifelong.21.aspx</u>. 2021.</li> </ul>
	• 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 W ritten Learning Goals and.39.aspx. 2021.

### **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
<b>Level 1</b> Approaches clinical care and educational duties with actions consistent with	• Discusses the basic principles underlying ethics (beneficence, nonmaleficence, justice, autonomy) and professionalism (professional values and commitments), and how they apply is various cituations (informed appeart process)
Level 2 Demonstrates consistent emplication of	apply in various situations (informed consent process)
<b>Level 2</b> 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	<ul> <li>Uses ethical principles to analyze straightforward situations</li> <li>When obtaining informed consent for a procedure, consistently gives patients the information necessary to make a decision (i.e., the scope and nature of potential risks and benefits of the procedure), and follows the patients' wishes</li> <li>Acknowledges a medical error, and provides the patient an explanation of the error and its consequences without deception or non-disclosure</li> </ul>
<b>Level 3</b> Recognizes tensions between conflicting ethical principles in complex	<ul> <li>Analyzes conflicts (or perceived conflicts) between patients/providers/staff members or between professional values</li> </ul>
situations and seeks appropriate guidance to help resolve ethical dilemmas	• Uses shared decision making and educates patients to improve compliance with recommended treatment, but respects the competent patient's or parent's right to refuse treatment, even if it is medically indicated
<b>Level 4</b> Manages ethical dilemmas, using appropriate resources as needed to facilitate resolution (e.g., ethics consultations, literature review, risk management/legal consultation)	<ul> <li>Works with a genetic counselor to advise the parents of a patient for whom the fellow recommends whole exome sequencing</li> <li>Appreciates the need to contact risk management if a medical error or lack of standard of care was discovered and resulted in possible patient harm</li> </ul>
<b>Level 5</b> Serves as a resource for others to resolve complex ethical dilemmas	<ul> <li>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</li> <li>Serves as the fellow member of the institutional Ethics Committee</li> </ul>
Assessment Models or Tools	<ul> <li>Direct observation</li> <li>Multisource feedback</li> <li>Oral or written self-reflection (e.g., of a personal or observed lapse, ethical dilemma, or systems-level factors)</li> <li>Simulation</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul> <li>American Medical Association. Ethics. <u>https://www.ama-assn.org/delivering-care/ama-code-medical-ethics</u>. 2021.</li> <li>Kirschner KL. Ethical-legal issues in physiatrics. <i>PMR</i>. 2009;1(1):81. https://onlinelibrary.wiley.com/doi/full/10.1016/j.pmrj.2008.12.003. 2021.</li> </ul>

Professionalism 2: Professional Behaviors	
Overall Intent: To recognize and address lapse	es in professional behavior, demonstrate professional behaviors, and use appropriate
resources for minimizing potential professionalis	sm lapses
Milestones	Examples
Level 1 Describes when and how to	Aware of institutional mechanisms for reporting professionalism lapses and when to use
appropriately report lapses	unem
Identifies professionalism lapses in oneself and	<ul> <li>Acknowledges when a professionalism lapse has occurred</li> </ul>
others	<ul> <li>Displays respect for patients and their family in routine situations</li> </ul>
Level 2 Demonstrates professional behavior in	Recognizes the negative impact of colleagues' unprofessional behaviors such as delayed
routine situations	returning of pages, disrespectful communication, or refusal to see a consult
Takes responsibility for one's own	Acknowledges when a professionalism lanse has occurred without becoming defensive
professionalism lapses when applicable and	making excuses, or blaming others
identifies contributing factors	Apologizes for the lapse in professionalism
Level 3 Anticipates situations that may trigger	• Recognizes that when fatigued or hungry, one is more apt to display short or disrespectful
professionalism lapses	communication
Takes remedial action to address lapses when	• Following an outburst at a purse, completes a module on respectful communication and
applicable	articulates strategies for preventing similar lapses in the future
Level 4 Demonstrates professional behavior in	Analyzes difficult real or hypothetical professionalism case scenarios or situations,
all situations, including during times of stress	recognizes own limitations, and consistently demonstrates professional behavior
Proactively intervenes to prevent lapses	Actively and consistently seeks to consider the perspectives of others to prevent lapses
Level 5 Coaches others when their behavior	<ul> <li>Advises more junior resident who has demonstrated disrespectful behavior to clinical staff members on managing conflicts with other members of the health care team</li> </ul>
	members on managing connicts with other members of the nearth care team
Addresses system issues to minimize potential	Identifies and seeks to address system-wide factors or barriers to promoting a culture of
for professionalism lapses	professional behavior through participation in a work group, committee, or task force
Assessment Models or Tools	Direct observation
	Multisource feedback
	<ul> <li>Oral or written self-reflection (e.g., of a personal or observed lapse, ethical dilemma, or evidence level factore)</li> </ul>
	• 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. 2021.
	ABPMR. <a href="https://www.abpmr.org/MOC/Partl/ProfessionalismDefinition">https://www.abpmr.org/MOC/Partl/ProfessionalismDefinition</a> . 2021.
	• Bynny RL, Paauw DS, Papadakis MA, Pfeil S, Alpha Omega Alpha. <i>Medical</i>
	Professionalism Best Practices: Professionalism in the Modern Era. Menlo Park, CA:
	Alpha Omega Alpha Honor Medical Society; 2017.
	http://alphaomegaalpha.org/pdfs/Monograph2018.pdf. 2021.
	• 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. 2021.

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	Occasionally needs reminders from program administrator to complete case logs
reminders to complete responsibilities	At times requires prompting from attending to complete clinic notes in a timely manner
	Completes evaluations of peers and attendings following a reminder from the program
	administrator
Level 2 Performs tasks and responsibilities in a	<ul> <li>Completes case logs without prompting from program administrator</li> </ul>
timely manner with appropriate attention to detail in routine situations	<ul> <li>Completes appropriately detailed clinic notes on the day of service without prompting from attending</li> </ul>
	Completes patient hand-off to the on-call fellow at the pre-designated time
	Submits required evaluations on time without requiring reminders
Level 3 Performs tasks and responsibilities in a	Completes all work on the inpatient rehabilitation service prior to leaving town to give a
timely manner with appropriate attention to	poster presentation at a conference
detail in complex of stressful situations	• Effectively completes expected professional responsibilities in the setting of a high constant of the setting of a high activity patients or managing challenging social situations.
	• Ensures that the day service is appropriately informed of all events that happened during
	a busy night call to avoid patient safety issues or compromised care
Level 4 Proactively implements strategies to	Helps to arrange coverage for call when another fellow needs to take unexpected leave
ensure that the needs of persons, teams, and systems are met in a timely manner	<ul> <li>Helps to improve the electronic hand-off document so that it is more efficient and ensures that important information is communicated</li> </ul>
	Works with the program director on a new process that promotes timely completion of     faculty and retation evaluations
	<ul> <li>Appropriately seeks help when clinical demands are too high for safe natient care</li> </ul>
Level 5 Coaches others to optimize timely task	Mentors a more junior fellow who is failing to complete professional tasks and
completion	responsibilities in a timely manner at the request of the program director
	• Creates and presents a lecture or seminar on strategies to promote timely completion of
	professional responsibilities at the request of the program director
Assessment Models or Tools	Compliance with deadlines and timelines
	Direct observation
	Multisource feedback     Self evaluations and reflective tools
	Self-evaluations and reflective tools     Simulation
Notes or Resources	Code of conduct from fellow/resident institutional manual

• 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. 2021.
<ul> <li>Expectations of residency program regarding accountability and professionalism</li> </ul>
• Fornari A, Akbar S, Tyler S. Critical synthesis package: assessment of professional
behaviors (APB). <i>MedEdPORTAL.</i> 2014;10:9902.
https://www.mededportal.org/publication/9902. 2021.
Mueller PS. Incorporating professionalism into medical education: the Mayo Clinic
experience. <i>Keio J Med</i> . 2009;58(3)133-143.
https://www.jstage.jst.go.jp/article/kjm/58/3/58_3_133/_article. 2021.
• 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/. 2021.
• 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 P
rofessionalism Results of.8.aspx. 2021.

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
<b>Level 1</b> Recognizes the need to respect the dignity of all people regardless of impairments or disabilities	• Talks directly to the patient not through their caregiver, companion, or interpreter
<b>Level 2</b> Demonstrates specific elements of verbal and physical communication that reflect respect for people with impairments or disabilities	<ul> <li>Sits at the level of a wheelchair user for conversation</li> <li>Treats the wheelchair as part of the user's personal space</li> <li>Uses person-first language that emphasizes the individual person and not just the disability when referring to the patient ("a person with paraplegia", not "a paraplegic")</li> <li>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</li> <li>Makes the patient aware verbally before making physical contact with a patient with visual impairment</li> </ul>
<b>Level 3</b> Proactively maintains pediatric patient's comfort and dignity during clinical encounters for those with mild impairments or disabilities	<ul> <li>Prior to evaluating passive range of motion in a patient with spasticity, asks patient to indicate any discomfort during</li> <li>Approaches a patient with a right visual field defect from the patient's left (good) side in order to not startle them</li> </ul>
<b>Level 4</b> Proactively maintains pediatric patient's comfort and dignity during clinical encounters for those with severe impairments or disabilities	<ul> <li>Facilitates turning a patient with dense hemiplegia during physical examination with ease without pulling on the weak arm, maintaining support of the weak arm 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</li> </ul>
<b>Level 5</b> Serves as a role model and resource by coaching others in behaviors and actions that optimize the comfort, dignity, and respect of people with impairments or disabilities	<ul> <li>Teaches a workshop on optimal techniques to examine patients with a variety of functional impairments and disabilities</li> </ul>
Assessment Models or Tools	<ul> <li>Direct observation</li> <li>Multisource feedback</li> <li>Oral or written self-reflection</li> <li>Simulation</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul> <li>Sabharwal S. Assessment of competency in positioning and movement of physically disabled patients. Acad Med. 2000;75(5):525.</li> </ul>

https://journals.lww.com/academicmedicine/Fulltext/2000/05000/Assessment of Compet
ency in Positioning and.47.aspx. 2021.
• Sabharwal S. Objective assessment and structured teaching of disability etiquette. Acad
<i>Med</i> . 2001;76(5):509.
https://journals.lww.com/academicmedicine/Fulltext/2001/05000/Objective Assessment a
nd Structured Teaching of.38.aspx#pdf-link. 2021.
• United Spinal Association. <i>Disability Etiquette: Tips on Interacting with People with</i>
Disabilities. New York, NY: United Spinal Association.
https://www.unitedspinal.org/pdf/DisabilityEtiquette.pdf. 2021.

Professionalism 5: Well-Being and Help-Seeking	
Overall Intent: To identify, use, manage, improve, and seek help for personal and professional well-being	
Milestones	Examples
<b>Level 1</b> Recognizes status of personal and professional well-being, with assistance	<ul> <li>Describes personal well-being during one-on-one meetings with program director when prompted</li> </ul>
<b>Level 2</b> Independently recognizes status of personal and professional well-being and demonstrates appropriate help-seeking behaviors	<ul> <li>Understands how and when to access employee assistance program and fellow wellness program</li> </ul>
<b>Level 3</b> With assistance, proposes, implements, and refines a plan to optimize personal and professional well-being	<ul> <li>With supervision, assists in developing a personal action plan to address stress and burnout</li> <li>With the helm of the presence director presence a plan to entircipe work officiency.</li> </ul>
Level A Independently developed implemente	• With the help of the program director, creates a plan to optimize work efficiency
and refines a plan to optimize personal and professional well-being	<ul> <li>Recognize that exercise is a stress reliever for self and implements a plan to exercise three times each week</li> </ul>
<b>Level 5</b> Coaches others and addresses system barriers and facilitators to optimize personal and professional well-being	<ul> <li>Assists with the formation of fellow wellness programming</li> </ul>
Assessment Models or Tools	<ul><li>Direct observation</li><li>Group interview or discussions for team activities</li></ul>
	Institutional online training modules
	Self-assessment and personal learning plan
Curriculum Mapping	•
Notes or Resources	<ul> <li>This subcompetency is not intended to evaluate a fellow's well-being. Rather, the intent is to ensure that each fellow has the fundamental knowledge of factors that impact well-being, the mechanism by which those factors impact well-being, and available resources and tools to improve well-being.</li> <li>ACGME. Tools and Resources on Physician Well-Being. <u>https://www.acgme.org/What-We-Do/Initiatives/Physician-Well-Being/Resources</u>. 2021.</li> </ul>
	<ul> <li>Busireddy KR, Miller JA, Ellison K, Ren V, Qayyum R, Panda M. Efficacy of interventions to reduce resident physician burnout: a systematic review. <i>Journal of Graduate Medical Education</i>. 2017;9(3):294-301.</li> <li><u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5476377/pdf/i1949-8357-9-3-294.pdf.</u> 2021.</li> <li>Local resources, including Employee Assistance</li> </ul>

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication	
Overall Intent: To effectively communicate with patients and caregivers; while working to minimize communication barriers and personal	
bias; to form a therapeutic relationship and allow	v for shared decision making
Milestones	Examples
<b>Level 1</b> Uses language and non-verbal behavior to demonstrate respect and establish rapport	<ul> <li>Self-monitors and controls tone, non-verbal responses, and language and asks questions to invite patient/family/caregiver participation</li> </ul>
Minimizes common barriers to effective communication (e.g., language, disability)	<ul> <li>Identifies common communication barriers in patient care, avoids medical jargon, and uses interpretation services and picture boards, and ensures communication is at the appropriate reading level for the patient/family/caregiver</li> </ul>
Accurately communicates own role within the health care system	
<b>Level 2</b> Establishes a therapeutic relationship in straightforward encounters using active listening and clear language	<ul> <li>Establishes a professional relationship with patients/families/caregivers, with active listening, attention to affect, and questions that explore the optimal approach to daily tasks</li> </ul>
Minimizes complex barriers to effective communication (e.g., health literacy, cultural differences), but has limited awareness of potential personal biases	<ul> <li>With patient or family consent, consults pastoral services to facilitate communication between a patient and their family related to differing views of how religion impacts treatment</li> </ul>
Organizes and initiates communication with the patient/patient's family by clarifying expectations and verifying understanding of the clinical situation	<ul> <li>Effectively leads patient/family/caregiver goal meetings in straightforward cases, with attending guidance</li> </ul>
<b>Level 3</b> Establishes a therapeutic relationship in challenging patient encounters	<ul> <li>Successfully establishes rapport with challenging patients</li> <li>Maintains and repairs a therapeutic relationship through times of conflict</li> </ul>
When prompted, reflects on personal biases while attempting to minimize communication barriers	• Reflects on implicit bias (i.e., impressions based upon chart review) that may contribute to the challenging aspects of patient encounters; 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
With guidance, sensitively and compassionately delivers medical information, elicits patient/patient's family values, goals, and	<ul> <li>Elicits what is most important to the patient/family/caregivers in end-of-life discussions, and acknowledges uncertainty in medical prognosis</li> </ul>

preferences, and acknowledges uncertainty and conflict	
<b>Level 4</b> Easily establishes therapeutic relationships, with attention to patient/patient's family concerns and context, regardless of complexity	• Earns the trust of the patient and family, addresses family preferences, and can compassionately explain that the family's preferences may not always be the best medical option for the patient
Overcomes personal biases while proactively minimizing communication barriers	<ul> <li>Independently identifies personal biases before exploring family goals for particular therapy modalities and explores with the family the understanding of realistic functional outcomes</li> </ul>
Independently uses shared decision making to align patient/patient's family values, goals, and preferences with treatment options to make a personalized care plan	
<b>Level 5</b> Mentors others in developing positive therapeutic relationships	• Role models a difficult conversation with a family regarding their child with spinal cord injury to supportively transition discussion from a goal of walking to a goal of progressive independent mobility with an assistive device
Role models self-awareness practice while teaching a contextual approach to minimize communication barriers	<ul> <li>Role models a difficult conversation for a patient with transverse myelitis to ensure inclusion of language of uncertainty and a focus on incremental goals</li> </ul>
Practices skills including compassion and empathy for shared decision making in patient/patient's family communication including those with a high degree of uncertainty/conflict	
Assessment Models or Tools	Direct observation
	Kalamazoo Essential Elements Communication Checklist (Adapted)
	Multisource feedback     Solf assessment including solf reflection exercises
	Skills needed to Set the state Flicit information Give information Understand the patient
	and End the encounter (SEGUE)
	Standardized patients or structured case discussions
Curriculum Mapping	•
Notes or Resources	<ul> <li>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.</li> </ul>

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component of medical curricula Part I Assessment of clinical communication AMEE
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ng and assessing communication skills. 2021.
• 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. 2021.

## 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	• Listens to and considers others' points of view, is nonjudgmental and actively engaged,
members of the health care team	and demonstrates humility
Level 2 Communicates information effectively	• Demonstrates active listening by fully focusing on the speaker, making eye contact and
with all health care team members	reflecting on and summarizing the conversation
	<ul> <li>Communicates clearly and concisely in an organized and timely manner during consultant encounters, as well as with the health care team in general</li> </ul>
Level 3 Identifies the need to adapt	Verifies own understanding of communications from staff member by restating critical
communication style, as needed, to fit team	values and unexpected diagnoses
needs	<ul> <li>Uses teach-back or other strategies to assess understanding during consultations</li> </ul>
<b>Level 4</b> Implements recommendations and communication from different members of the	<ul> <li>Supportive of group decision making and group responsibility reflective of a collaborative interdisciplinary team model</li> </ul>
health care team to optimize patient care	<ul> <li>Adapts communication strategies in handling complex situations</li> </ul>
	• 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	Role models conflict resolution for the health care team by revisiting team goals and
strategies that value input from all health care	openly discussing conflicting points of view while ensuring each team member feels
team members, resolving conflict when needed	respected and valued
Assessment Models or Tools	Direct observation
	Global assessment
	• Medical record (Chart) review for professionalism and accuracy in written communications
	Multisource assessment
	Simulation encounters
Curriculum Mapping	•
Notes or Resources	• Green M, Parrott T, Cook G. Improving your communication skills. <i>BMJ</i> . 2012;344:e357.
	https://www.bmj.com/content/344/bmj.e357. 2021.
	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.tandtonline.com/doi/full/10.3109/0142159X.2013.769677. 2021.
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	Prescriptions, Referrals, and Order Writing. In: Frontera WR. DeLisa's <i>Physical Medicine</i>

and Rehabilitation. 5th Ed. Philadelphia, PA; 2010:362-384.
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and-order-writing/. 2021.
• Roth CG, Eldin KW, Padmanabhan V, Freidman EM. Twelve tips for the introduction of
emotional intelligence in medical education. <i>Med Teach</i> . 2018:1-4.
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Interpersonal and Communication Skills 3: Communication within Health Care Systems Overall Intent: To effectively communicate using a variety of methods	
Milestones	Examples
Level 1 Demonstrates ergenized and complete	Identifies institutional and dependences to compression time bis provident for some and soft

<b>Level 1</b> Demonstrates organized and complete clinical, diagnostic and therapeutic reasoning through notes in the patient record	Identifies institutional and departmental communication hierarchy for concerns and safety issues
Demonstrates basic knowledge of appropriate channels of communication within the institution (e.g., pager callback, timely response to emails)	<ul> <li>Understands how to contact members of the interprofessional team</li> </ul>
<b>Level 2</b> Regularly updates the medical record, communicating clinical reasoning as care evolves (e.g., on-call evaluations, patient preferences, team/family meetings, conflict resolution, and advanced directives)	<ul> <li>Notes are organized and accurate, including appropriate modifications when using a copy-and-paste function</li> </ul>
Communicates through appropriate channels as required by institutional policy (e.g., patient safety reports)	<ul> <li>Recognizes that a communication breakdown has happened and respectfully brings the breakdown to the attention of the appropriate individual</li> <li>Reports a patient safety event</li> </ul>
<b>Level 3</b> Demonstrates effective and timely integration and dissemination of information among all available sources to facilitate patient- centered care, including anticipatory recommendations	<ul> <li>Documentation for an adolescent patient with spina bifida includes anticipatory guidance about future sexual health</li> </ul>
Appropriately selects direct (e.g., telephone, in- person) and indirect (e.g., progress notes, text messages) forms of communication based on context	<ul> <li>When an x-ray indicates a fracture warranting an urgent treatment, personally calls patient's family and provides plan for next steps in management</li> </ul>
<b>Level 4</b> Independently documents information in compliance with current regulatory health system requirements (e.g., Centers for Medicare and Medicaid Services, Joint Commission, institutional requirements)	<ul> <li>Provides respectful feedback to a colleague who had insufficient documentation that led to a near-miss event due to a communication breakdown</li> </ul>

Produces written or verbal communication that serves as an example for others to follow	Creates a smart phrase and order set to be used consistently to improve botulinum toxin injection outcomes
<b>Level 5</b> Serves as an expert resource in communication technology	Initiates a quality improvement project to improve communication for a multidisciplinary clinic
Guides departmental or institutional communication around policies and procedures	<ul> <li>Leads a task force established by the department to develop a plan to improve house staff hand-offs</li> </ul>
Assessment Models or Tools	Chart review for documented communications
	Multisource feedback
	<ul> <li>Observation of sign-outs, observation of requests for consultations</li> </ul>
Curriculum Mapping	•
Notes or Resources	<ul> <li>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;29(4):420-432. <a href="https://www.tandfonline.com/doi/full/10.1080/10401334.2017.1303385">https://www.tandfonline.com/doi/full/10.1080/10401334.2017.1303385</a>. 2021.</li> <li>Haig KM, Sutton S, Whittington J. SBAR: a shared mental model for improving communication between clinicians. <i>Jt Comm J Qual Patient Saf.</i> 2006;32(3)167-175. <a href="https://www.ncbi.nlm.nih.gov/pubmed/16617948">https://www.ncbi.nlm.nih.gov/pubmed/16617948</a>. 2021.</li> <li>Starmer AJ, Spector ND, Srivastava B, et al. LPASS, a mnemonic to standardize verbal.</li> </ul>

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

Milestones 1.0	Milestones 2.0
PC1: History and Physical Examination for Pediatric Rehabilitation Patients (appropriate for age and impairment)	PC1: History for Pediatric Rehabilitation Patients PC2: Physical Examination for Pediatric Rehabilitation Patients
PC2: Diagnostic Evaluation of Pediatric Rehabilitation Medicine Patients	PC3: Differential Diagnosis of Pediatric Rehabilitation Medicine Patients PC4: Diagnostic Evaluation of Pediatric Rehabilitation Medicine Patients
PC3: Medical Management of Pediatric Rehabilitation Medicine Patients	PC5: Medical Management of Pediatric Rehabilitation Medicine Patients
PC4: Rehabilitation/Functional Management of Pediatric Rehabilitation Medicine Patients	PC6: Rehabilitation/Functional Management of Pediatric Rehabilitation Medicine Patients – Assistive Devices and Technologies PC7: Rehabilitation/Functional Management of Pediatric Rehabilitation Medicine Patients – Rehabilitation Interventions
PC5: Procedural Skills in Pediatric Rehabilitation Medicine	PC8: Procedural Skills in Pediatric Rehabilitation Medicine
MK1: Physiatric knowledge (medical, functional, and psychosocial) in the care of pediatric rehabilitation medicine patients	MK1: Physiatric Knowledge
MK2: Growth and Development	MK2: Growth and Development
SBP1: Systems Thinking: demonstrates awareness of and responsiveness to larger context and system of care in pediatric rehabilitation medicine	SBP3: System Navigation for Patient-Centered Care SBP4: Physician Role in Health Care Systems
SBP2: Patient Safety: Understands ways to improve health care safety through participation in identifying system errors and implementing potential systems solutions	SBP1: Patient Safety in Pediatric Rehabilitation
PBLI1: Self-directed Learning and Teaching	PBLI2: Reflective Practice and Commitment to Personal Growth
PBLI2: Locates, appraises, assimilates, and applies evidence from scientific studies to the practice of pediatric rehabilitation medicine	PBLI1: Evidence-Based and Informed Practice

PBLI3: Quality Improvement (QI)	SBP2: Quality Improvement in Pediatric Rehabilitation
PROF1: Demonstrates compassion, integrity, and respect for	PROF1: Ethical Principles
others, as well as sensitivity and responsiveness to diverse	ICS2: Interprofessional and Team Communication
patient populations, including to diversity in gender, age, culture,	
race, religion, disabilities, developmental level, and sexual	
orientation, and an adherence to ethical principles	
PROF2: Professional Behaviors and Accountability to Self,	PROF2: Professional Behaviors
Patients, Society, and the Profession	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: Communication within Health Care Systems
No match	PROF4: Patient Care Etiquette with Patients of all Abilities
No match	PROF5: Well-Being and Help-Seeking

### **Available Milestones Resources**

Clinical Competency Committee Guidebook, updated 2020 -

https://www.acgme.org/Portals/0/ACGMEClinicalCompetencyCommitteeGuidebook.pdf?ver=2020-04-16-121941-380

*Clinical Competency Committee Guidebook Executive Summaries*, New 2020 - <u>https://www.acgme.org/What-We-</u> <u>Do/Accreditation/Milestones/Resources</u> - Guidebooks - Clinical Competency Committee Guidebook Executive Summaries

*Milestones Guidebook*, updated 2020 - <u>https://www.acgme.org/Portals/0/MilestonesGuidebook.pdf?ver=2020-06-11-100958-330</u>

*Milestones Guidebook for Residents and Fellows*, updated 2020 - <u>https://www.acgme.org/Portals/0/PDFs/Milestones/MilestonesGuidebookforResidentsFellows.pdf?ver=2020-05-08-150234-750</u>

Milestones for Residents and Fellows PowerPoint, new 2020 -<u>https://www.acgme.org/Residents-and-Fellows/The-ACGME-for-Residents-and-Fellows</u>

Milestones for Residents and Fellows Flyer, new 2020 https://www.acgme.org/Portals/0/PDFs/Milestones/ResidentFlyer.pdf

Implementation Guidebook, new 2020 - https://www.acgme.org/Portals/0/Milestones%20Implementation%202020.pdf?ver=2020-05-20-152402-013

Assessment Guidebook, new 2020 - <u>https://www.acgme.org/Portals/0/PDFs/Milestones/Guidebooks/AssessmentGuidebook.pdf?ver=2020-11-18-155141-527</u>

*Milestones National Report*, updated each Fall - <u>https://www.acgme.org/Portals/0/PDFs/Milestones/2019MilestonesNationalReportFinal.pdf?ver=2019-09-30-110837-587</u> (2019)

*Milestones Bibliography*, updated twice each year - <u>https://www.acgme.org/Portals/0/PDFs/Milestones/MilestonesBibliography.pdf?ver=2020-08-19-153536-447</u>

*Developing Faculty Competencies in Assessment* courses - <u>https://www.acgme.org/Meetings-and-Educational-Activities/Other-Educational-Activities/Courses-and-Workshops/Developing-Faculty-Competencies-in-Assessment</u>

Assessment Tool: Direct Observation of Clinical Care (DOCC) - https://dl.acgme.org/pages/assessment

Assessment Tool: Teamwork Effectiveness Assessment Module (TEAM) - https://dl.acgme.org/pages/assessment

Learn at ACGME has several courses on Assessment and Milestones - https://dl.acgme.org/