The Pediatric Rehabilitation Medicine Milestone Project

A Joint Initiative of

The Accreditation Council for Graduate Medical Education and

The American Board of Physical Medicine and Rehabilitation





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The Milestones are designed only for use in evaluation of the fellow in the context of their participation in ACGME-accredited residency or fellowship programs. The Milestones provide a framework for assessment of the development of the fellow in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.

Pediatric Rehabilitation Medicine Milestones

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Milestone Reporting

This document presents Milestones designed for programs to use in semi-annual review of fellow performance and reporting to the ACGME. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME competencies organized in a developmental framework from less to more advanced. They are descriptors and targets for fellow performance as a fellow moves from entry into fellowship through graduation. In the initial years of implementation, the Review Committee will examine Milestone performance data for each program's fellows as one element in the Next Accreditation System (NAS) to determine whether fellows overall are progressing.

For each period, review and reporting will involve selecting milestone levels that best describe a fellow's current performance and attributes. Milestones are arranged into numbered levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert in the subspecialty.

Selection of a level implies that the fellow substantially demonstrates the milestones in that level, as well as those in lower levels (see the diagram on page v).

- **Level 1:** The fellow demonstrates milestones expected of an incoming fellow.
- **Level 2:** The fellow is advancing and demonstrates additional milestones, but is not yet performing at a mid-fellowship level.
- **Level 3:** The fellow continues to advance and demonstrate additional milestones, consistently including the majority of milestones targeted for fellowship.
- **Level 4:** The fellow has advanced so that he or she now substantially demonstrates the milestones targeted for fellowship. This level is designed as the graduation target.
- **Level 5:** The fellow has advanced beyond performance targets set for fellowship and is demonstrating "aspirational" goals which might describe the performance of someone who has been in practice for several years. It is expected that only a few exceptional fellows will reach this level.

Additional Notes

Level 4 is designed as the graduation *target* and *does not* represent a graduation *requirement*. Making decisions about readiness for graduation is the purview of the fellowship program director. Study of Milestone performance data will be required before the ACGME and its partners will be able to determine whether milestones in the first four levels appropriately represent the developmental framework, and whether Milestone data are of sufficient quality to be used for high-stakes decisions.

Examples are provided with some milestones. Please note that the examples are not the required element or outcome; they are provided as a way to share the intent of the element.

Some milestone descriptions include statements about performing independently. These activities must occur in conformity to the ACGME supervision guidelines, as well as institutional and program policies. For example, a fellow who performs a procedure independently must, at a minimum, be supervised through oversight.

Supplemental Guides and other resources are available on the Milestones page of each specialty section of the ACGME website. On www.acgme.org, choose the applicable specialty under the "Specialties" menu, then select the "Milestones" link in the lower navigation bar.

Answers to Frequently Asked Questions about Milestones are available on the Milestones web page: http://www.acgme.org/acgmeweb/Portals/0/MilestonesFAQ.pdf.

The diagram below presents an example set of milestones for one sub-competency in the same format as the ACGME Report Worksheet. For each reporting period, a fellow's performance on the milestones for each sub-competency will be indicated by selecting the level of milestones that best describes that fellow's performance in relation to those milestones.

Level1	Level2	Level3		Level4	Level5
Acquires a basic physiatric	Utilizes knowledge of	Utilizes knowledge	of	Efficiently acquires and	Serves as an exemplary
history, including medical,	childhood development to	childhood develop	ment to	presents a relevant history	model for the gathering of
functional, and	acquire a history and	acquire a history ar	nd	and targeted physical	subtle and difficult
osychosocial elements	perform a physical exam	perform a physical	exam	exam in a prioritized and	information from the
	and functional evaluation	and functional eval	luation	hypothesis-driven fashion	patients and/or families
Performs a basic physical	in children with common	in children with cor		across a spectrum of ages,	
exam and functional	medical conditions and	medical conditions	and	impairments and clinical	Serves as an exemplary
assessment that identifies	disabilities	disabilities		settings	model for physical exam
mpairments (e.g., may					skills in complex patients
nclude balance, gait,	Documents and presents a	Modifies history an		Elicits subtleties and	
cognition, neurologic, or	complete history and	exam to accommo		information that may not	
musculoskeletal	physical exam in an	patient's behavior,		be readily volunteered by	
assessments)	organized manner	developmental lev		the patients and/or	
		impairments to opt	timize	families	
Documents and presents		assessment			
key findings of the history				Identifies and correctly	
and physical exam in an				interprets subtle or	
organized manner				atypical physical findings	
				\mathbb{R}	
Comments:				1	
Selecting a respons	se box in the middle o	fa	Sele	ecting a response box	on the line in between
			- 1	•	in lower levels have be
-	nilestones in that leve	i aiiu	1		
in lower levels hav	e been substantially		der	nonstrated as well as	some milestones in the
demonstrated.	•		leve	el(s).	

Level 1	Level 2	Level 3	Level 4	Level 5
Acquires a basic physiatric	Utilizes knowledge of	Utilizes knowledge of	Efficiently acquires and	Serves as an exemplary
history, including medical,	childhood development to	childhood development to	presents a relevant history	model for the gathering o
functional, and	acquire a history and	acquire a history and	and targeted physical	subtle and difficult
psychosocial elements	perform a physical exam	perform a physical exam	exam in a prioritized and	information from patients
	and functional evaluation	and functional evaluation	hypothesis-driven fashion	and/or families
Performs a basic physical	in children with common	in children with complex	across a spectrum of ages,	
exam and functional	medical conditions and	medical conditions and	impairments, and clinical	Serves as an exemplary
assessment that identifies	disabilities	disabilities	settings	model for physical exam
impairments (e.g., may				skills in complex patients
include balance, gait,	Documents and presents a	Modifies history and	Elicits subtleties and	
cognition, neurologic, or	complete history and	exam to accommodate the	information that may not	
musculoskeletal	physical exam in an	patient's behavior,	be readily volunteered by	
assessments)	organized manner	developmental level, and	patients and/or families	
		impairments to optimize		
Documents and presents		assessment	Identifies and correctly	
key findings of the history			interprets subtle or	
and physical exam in an			atypical physical findings	
organized manner				

Patient Care – Diagnostic Evaluation of Pediatric Rehabilitation Medicine Patients This includes:

- Differential diagnosis of primary and secondary conditions
- Laboratory studies, imaging, electrodiagnostic studies, bowel, and bladder studies, neuropsychological testing, etc.
- Pediatric rehabilitation medicine assessment tools and outcome measures (e.g., WeeFIM, PEDI, GMFCS, COAT)

Level 1	Level 2	Level 3	Level 4	Level 5
Produces a differential diagnosis for common medical conditions Orders appropriate diagnostic studies for common medical conditions (e.g., fever)	Generates a differential diagnosis that includes conditions commonly seen in pediatric physiatry Orders appropriate diagnostic studies for conditions commonly seen in pediatric physiatry (e.g., dysplastic hip) Demonstrates knowledge of common pediatric assessment tools and outcome measures	Develops a comprehensive differential diagnosis, including less common conditions Appropriately prioritizes the sequence and urgency of diagnostic testing Correctly interprets diagnostic study results and appropriately pursues further testing or specialist input Integrates knowledge of functional goals, results of pediatric assessment tools, and prognosis to optimize patient	Produces a focused and prioritized differential diagnosis across a spectrum of ages and impairments Orders diagnostic testing and assessment tools based on cost effectiveness and likelihood that results will influence clinical	Efficiently produces a focused and prioritized differential diagnosis accounting for rare conditions Streamlines testing for maximal cost effectiveness and minimal patient and family burden
Comments:		management		

Patient Care – Medical Management of Pediatric Rehabilitation Medicine Patients This includes inpatient, outpatient, and consultative management of: • Current co-morbidities (e.g., gastroesophageal reflux, seizure disorders, obesity, malnutrition) • Secondary conditions (e.g., restrictive lung disease, neurogenic bladder and bowel, neurobehavioral disorder, autonomic dysfunction, pain) • Potential complications (e.g., contractures, DVT, UTI, aspiration pneumonia, pressure ulcer) Level 2 Level 5 Level 1 Level 3 Level 4 Evaluates general medical Identifies and manages Manages patients with Develops and implements Consistently performs a comprehensive problems and initiates common medical cocomplex medical coevidence-based medical treatment morbidities and secondary morbidities and secondary treatment plan that management in an conditions identifies and addresses all efficient and effective conditions

Identifies level of medical acuity and triages appropriately	Identifies individual risk factors for medical complications and institutes preventive care Uses appropriate medical consultations to guide treatment plan	active medical co- morbidities, secondary conditions, and potential complications Counsels patients and families regarding treatment risks and benefits, outcomes, and prognosis Provides effective consultation services	manner Evaluates and appropriately applies emerging treatments in individual patients
		addressing complex or rare rehabilitation related medical conditions	
Comments:			

Patient Care – Rehabilitation/Functional Management of Pediatric Rehabilitation Medicine Patients Includes rehabilitation interventions in inpatient, outpatient, and consultative management, such as:

- Rehabilitation therapies (e.g., therapeutic exercise, modalities)
- Prosthetics and orthotics
- Equipment/devices (e.g., adaptive equipment, seating systems, assistive technologies)

Level 1	Level 2	Level 3	Level 4	Level 5
Describes domains of body	Prescribes appropriate,	Provides detailed therapy	Coordinates therapy	Serves as a resource to
structure and function,	commonly used adaptive	prescription for specific	across systems of care	orthotists, therapists, and
activities, and	devices and mobility aids	conditions with		other health care
participation resulting	(e.g., standing frames, gait	appropriate precautions	Prescribes appropriate	professionals for problem
from disease or injury	trainer)		orthotics for a variety of	solving unusual clinical
		Prescribes appropriate	complex conditions	and functional challenges
Prescribes appropriate	Prescribes appropriate	commonly used orthotics		
rehabilitation therapies by	rehabilitation therapies by		Effectively problem solves	Integrates cutting edge
discipline based on	discipline based on	Utilizes growth and	when medical equipment	technology into therapy
functional need	developmental need with	development when	is ineffective or poorly	plan (e.g., robotics)
	appropriate goals	prescribing durable	tolerated	
Identifies key structural		medical assistive		
components of	Prescribes assistive	technology	Incorporates changes in	
wheelchairs and how	technologies, seating		status when prescribing	
modifications to the	systems, and mobility	Provides effective	equipment and assistive	
wheelchair can influence	devices in partnership with	consultation to other	technology	
function	the interdisciplinary team	services addressing		
		commonly seen conditions	Provides effective	
			consultation services	
			addressing complex or	
			rare functional	
			management issues	
Comments:				

This includes:	Patient Care – Procedural Skills in Pediatric Rehabilitation Medicine This includes: • Spasticity interventions (e.g., chemodenervation, neurolytic procedures, intrathecal baclofen pump)			
Level 1	Level 2	Level 3	Level 4	Level 5
Complies with safety protocols regarding procedures	Demonstrates basic understanding of which spasticity intervention should be used to treat specific conditions Provides basic education to patients and families regarding procedure-specific information and treatment options Performs procedures with direct supervision; may need attending intervention during procedure	Makes appropriate choices regarding medication options, dosing, and guidance methods (e.g., baclofen pump programming, botulism toxin injection) Obtains informed consent, confirming patient and family understanding and inviting questions Modifies procedure to accommodate the patient's impairment and minimize discomfort (e.g., sedation)	Troubleshoots spasticity interventions that are ineffective or when complications arise (e.g., acute baclofen withdrawal) Consistently performs procedures without attending intervention Ensures follow-up to maximize the effects of the procedure	Skillfully performs a wide variety of procedures and teaches others in the safe performance of these procedures
Comments:				

Medical Knowledge – Physiatric knowledge (medical, functional, and psychosocial) in the care of pediatric rehabilitation medicine patients This includes:

- Epidemiology and etiology
- Anatomy and pathophysiology
- Therapeutic and diagnostic options
- Prognosis and outcomes

Core Areas Include: brain disorders, musculoskeletal disorders, neuromuscular disorders, pain disorders, and spinal cord disorders

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic	Demonstrates basic	Synthesizes physiatric	Synthesizes physiatric	Possesses the physiatric
knowledge of common	knowledge of common	knowledge of common	knowledge of complex	knowledge required to
rehabilitation disorders	pediatric medical	pediatric rehabilitation	pediatric rehabilitation	successfully diagnose and
	conditions and basic	disorders, secondary	disorders, secondary	treat uncommon,
	preventive care (e.g.,	conditions, treatment	conditions, treatment	ambiguous, and complex
	normal pediatric vital	options, and complications	options, and complications	pediatric conditions (e.g.,
	signs, weight-based		across a spectrum of	neuromuscular
	dosing, nutrition, pediatric	Predicts developmental	impairments and clinical	impairment with unclear
	bladder volume)	and functional outcome	settings	diagnosis, rare metabolic
		and prognosis based on		disorder, pump
	Demonstrates basic	impairments	Able to extrapolate	complication)
	physiatric knowledge of		information to new clinical	
	common pediatric		situations	Demonstrates knowledge
	rehabilitation disorders			of controversial, emerging,
				and investigational
				interventions
Comments:				

Medical Knowledge – Growth and Development This includes: Personal-social Cognitive communicative Fine motor Gross motor Level 1 Level 2 Level 3 Level 4 Level 5 Applies knowledge of Synthesizes the knowledge Demonstrates knowledge Demonstrates knowledge Demonstrates knowledge of basic developmental of anatomy and physiology pathophysiology to the of anatomy and physiology of the scientific basis of growth and development in the context of milestones during growth (e.g., neuroplasticity metabolism of drugs, of a child (e.g., precocious prevention and treatment bladder volume, skeletal puberty in brain disorders, (e.g., use of practice Publishes original article structure, pubertal guidelines for osteopenia hip dysplasia with cerebral on growth and palsy) or hip dysplasia) development in a peermaturation) review journal Demonstrates detailed Recognizes atypical Applies knowledge of knowledge of normal growth or development developmental abilities to developmental milestones (e.g., recognition of diagnose, treat, and and growth persistent primitive provide a prognosis for function and reflexes) Demonstrates independence Demonstrates knowledge understanding that age and developmental level of neuroplasticity and Demonstrates knowledge impact function and implication on recovery of neuroplasticity as it and function applies to treatment recovery Comments:

Systems-based Practice – Systems Thinking: demonstrates awareness of and responsiveness to larger context and system of care in pediatric rehabilitation medicine

This includes:

- Coordinating patient care within the health care system
- Advocating for quality patient care and optimal patient care systems

Level 1	Level 2	Level 3	Level 4	Level 5
Describes and differentiates	Coordinates care within the	Incorporates patient-	Efficiently manages and	Serves as an expert
between the various	hospital system (e.g.,	specific rehabilitation	coordinates safe and	resource in care
systems of care in which	inpatient, outpatient,	needs, social factors,	effective patient transitions	coordination and advocacy
rehabilitation is provided	consultative)	cost/benefit, and resources	between various settings	for improved systems of
(e.g., acute care, inpatient		into decision making (e.g.,	and into the adult system of	care
rehabilitation facility [IRF],	Effectively communicates	inpatient admission, length	care	
skilled nursing facility [SNF],	with past and future	of stay, discharge		Participates in state or
outpatient, home health	caregivers to ensure	destination, equipment,	Optimally coordinates care	national advocacy efforts
care, etc.)	continuity of care	essential outpatient	and advocates to improve	
		services, medical	care provided through	
	Demonstrates knowledge of	management)	health care, social/	
	commonly used community		community, and	
	and governmental	Demonstrates knowledge of	governmental systems	
	programs available to	eligibility criteria and		
	provide support and	mechanisms to access to	Organizes appeals for	
	rehabilitative services (e.g.,	commonly used community	coverage and advocates for	
	SSI, IDEA, early	and governmental	patient and family in	
	intervention)	programs	complex situations	
		Advocates for and provides	Demonstrates knowledge of	
		high-quality, safe, well-	regulatory compliance,	
		coordinated, patient-	including accurate coding	
		centered care across the	and billing	
		health care system		
Comments:				

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Pediatric Rehabilitation Medicine Milestones, ACGME Report Worksheet

Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes the impact of	Applies a structured	Identifies health system	Partners with others in	Leads systems-level
process and systems	process to foster clear,	factors that increase risk	activities to improve	patient safety
failures on patient safety	concise, accurate, and	for errors, (e.g., errors in	patient safety	interventions
	specific communication	the Electronic Medical		
Participates in established	during patient hand-offs	Record, lack of health	Understands and utilizes	Anticipates and prevents
safety initiatives (e.g., use		information exchange)	formal system resources	critical incidents or
of approved abbreviations,	Utilizes existing processes		to investigate or mitigate	systems failures that may
isolation precautions,	and procedures for		real or potential system	impact patient safety
hand washing)	reporting problematic		error	
O,	events			

Practice-based Learning and	Practice-based Learning and Improvement – Self-directed Learning and Teaching			
Level 1	Level 2	Level 3	Level 4	Level 5
Acknowledges gaps in personal knowledge Utilizes information technology and/or clinical supervisors for immediate information needs	Actively participates in and seeks out educational offerings and clinical learning opportunities Identifies diagnosis-specific knowledge gaps and uses information technology to optimize self-directed learning Accepts feedback and utilizes it to improve areas of deficiency	Develops and follows a learning plan that addresses gaps in knowledge establishing the foundation for lifelong learning Actively seeks out feedback and utilizes it to improve areas of deficiency Participates in effective teaching of residents and students	Engages in a deliberate process to maintain up-to-date knowledge and skills in pediatric rehabilitation medicine Independently identifies areas of deficiency and effectively implements a plan for self-improvement Engages in teaching of colleagues and other medical professionals Engages in self-initiated pursuit of excellence	Serves as a primary author in a peer-reviewed paper or chapter Presents as an invited speaker at a national meeting
Comments:				

Level 1	Level 2	Level 3	Level 4	Level 5
Formulates clinically relevant questions that guide the search for specific knowledge to inform clinical decisions	Effectively appraises evidence for its validity and applicability to individual patient care	Demonstrates the use of evidence-based research and tools (e.g., clinical practice guidelines) to inform clinical decisions	Stays current on the best evidence for select topics in pediatric rehabilitation medicine, and regularly uses evidence-based research and tools to	Identifies gaps in the evidence of pediatric rehabilitation medicine and contributes to building the knowledge
Demonstrates the ability to search and select appropriate evidence- based information tools to answer specific clinical questions			guide clinical practice	

Practice-based Learning and Improvement – Quality Improvement (QI)					
Systematically analyzes the practice of pediatric rehabilitation medicine using QI methods, and implements changes with the goals of					
improving systems of care, reducing health care disparities, and improving patient outcomes					
Level 1	Level 2	Level 3	Level 4	Level 5	
Understands basic QI	Demonstrates active	Identifies opportunities for	Actively participates in a	Teaches QI principles	
principles	involvement in processes	process improvement in	project that involves the		
	aimed at improving	the delivery of care	application of QI principles	Participates in advanced	
Identifies specific care	patient care and			training in QI	
processes in need of	decreasing inefficiency				
improvement	and waste in everyday				
	practice				
Comments:					

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates compassion, integrity, respect, sensitivity, and responsiveness in routine interactions with patients, families, and team members Demonstrates awareness of how personal values and beliefs can impact patient care	Displays understanding of diverse patient groups and their support systems Identifies ethical issues in clinical situations (e.g., declining a feeding tube, requests for unnecessary durable medical equipment or treatments, disparity in goal setting)	Applies knowledge about the beliefs and values of individual patients to provide patient-centered care Exhibits compassion with patients and families when discussing prognosis Analyzes common ethical issues and seeks guidance when appropriate (e.g., ethics consult, pastoral counseling, compliance)	Exhibits compassion, integrity, and respect in challenging interactions with patients and families, including when beliefs and choices vary from those of the treatment team Effectively manages ethical issues in clinical situations	Participates in ethics scholar program Leads and mentors others regarding application of bioethical principles

Level 1	Level 2	Level 3	Level 4	Level 5
Complies with HIPPA	Demonstrates that the	Recognizes conflicts of	Actively participates in	Contributes to regional- or
guidelines in all clinical	responsibility of patient	interest and how they	service activities, such as	national-level service
situations	care supersedes self-	affect clinical decision-	community service,	
	interest (e.g., ensures all	making, teaching, or	professional organizations,	Models altruism and
Demonstrates professional	patient care hand-offs are	research activities	or institutional	professional behaviors
accountability (e.g., shows	completed before leaving		committees	
up on time, timely	the hospital)	Willingly assumes	E Libita and a constant	
completion of professional	Establish a constant	professional responsibility	Exhibits self-awareness of	
responsibilities), including	Establishes appropriate	and prioritizes multiple	how one is perceived by	
administrative tasks	boundaries with patients	competing demands to	others and uses this	
Demonstrates awareness	and families (e.g., social	ensure the best patient	knowledge to effectively	
of the influence of	media, personal relationships)	care	manage professional relationships	
personal health and	relationships)		relationships	
wellness, including the	Utilizes effective individual		Recognizes and	
effect of fatigue and sleep	strategies and local		demonstrates steps to	
deprivation on safe and	resources as necessary to		address impairment in	
effective patient care	limit stress or burnout		colleagues	
·				

Interpersonal and Communication Skills – Relationship Management				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies factors that	Utilizes effective verbal	Effectively educates and	Consistently anticipates	Uses knowledge to lead
affect communication	and non-verbal	counsels patients and	the need for, and	complex discussions,
(e.g., language, speech,	communication strategies,	families, utilizing	effectively facilitates,	education, and counseling
hearing, vision,	including active listening,	strategies to ensure	family meetings, including	with patients and families
developmental level, and	augmentative	understanding	all relevant disciplines	regarding life-changing
cognitive impairments)	communication devices,			effects of disability and
	interpreters, and play	Engages patients in shared	Sustains positive	sequelae
Develops positive working		decision making	relationships with	
relationships with	Collaborates effectively		patients, families, and	Serves as an expert
patients, families, and	and respectfully with	Identifies resolution	health care providers	resource in complex
health care providers in	patients, families, multiple	options for patient care-	during challenging	relationship management
uncomplicated situations	providers, and the	related conflicts	situations	
	interdisciplinary team to			
	develop patient-centered		Manages conflict and	
	goals		discordant opinions	
			effectively among	
			patients, families, and	
			health care providers to	
			ensure patient-centered	
			care	
Comments:				

Interpersonal and Communication Skills – Information Gathering and Sharing				
Level 1	Level 2	Level 3	Level 4	Level 5
Describes the positive and negative effects of information technology on accuracy of information Ensures medical records are accurate and complete, with attention to preventing confusion and error (e.g., makes appropriate modifications when using copy-and-paste function)	Utilizes most effective form of communication in various clinical situations (e.g., telephone, face-to-face, electronic) Regularly updates the medical record communicating clinical reasoning as care evolves (e.g., on-call evaluations, patient preferences, team/family meetings, conflict resolution, and advance directives)	Demonstrates effective integration and dissemination of information between all available sources to facilitate patient-centered care	Independently documents information in compliance with current regulatory requirements (e.g., CMS, Joint Commission, institutional requirements)	Serves as an expert resource in communication technology Role models and teaches importance of organized, accurate, and comprehensive health records that are succinct and patient-specific
Comments:				