Pediatric Nephrology Milestones

ACGME International, Inc. (ACGME-I)



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Pediatric Nephrology Milestones

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

Understanding Milestone Levels and Reporting

This document presents the Milestones, which programs use in a semi-annual review of resident or fellow performance, and then report to the ACGME-I. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME-I Competencies organized in a developmental framework. The narrative descriptions are targets for resident/fellow performance throughout the educational program.

Milestones are arranged into levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert resident or fellow in the specialty or subspecialty. For each reporting period, the Clinical Competency Committee will review the completed evaluations to select the milestone levels that best describe each learner's current performance, abilities, and attributes for each subcompetency.

These levels *do not* correspond with post-graduate year of education. Depending on previous experience, more junior residents/fellows may achieve higher levels early in their educational program just as more senior residents/fellows may be at a lower level later in their educational program. There is no predetermined timing for a resident or fellow to attain any particular level. Residents and fellows may also regress in achievement of their milestones. This may happen for many reasons, such as over-scoring in a previous review, a disjointed experience in a particular procedure, or a significant act by the resident/fellow.

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

Additional Notes

Level 4 is designed as a graduation *goal* but *does not* represent a graduation *requirement*. Making decisions about readiness for graduation and unsupervised practice is the purview of the program director. Furthermore, Milestones 2.0 include revisions and changes that preclude using the Milestones as a sole assessment in high-stakes decisions. Level 5 is designed to represent an expert resident or fellow whose achievements in a subcompetency are greater than the expectation. Milestones are primarily designed for formative, developmental purposes to support continuous quality improvement for individual learners, education programs, and the specialty. ACGME-I and its partners will continue to evaluate and perform research on the Milestones to assess their impact and value.

Examples are provided for some milestones within this document. Note: 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 conformance with ACGME-I supervision guidelines as described in the applicable Program Requirements, as well as with institutional and program policies. For example, a resident who performs a procedure independently must, at a minimum, be supervised through oversight.

A Supplemental Guide is also available to provide more context regarding the intent of each subcompetency, as well as examples for each level, assessment methods or tools, and other resources. The Supplemental Guide, like examples contained within the Milestones, is designed only to assist the program director and Clinical Competency Committee; it is not meant to demonstrate any required element or outcome.

The diagram below presents an example set of milestones for one subcompetency in the same format as the ACGME-I Report Worksheet. For each reporting period, a resident's/fellow's performance on the milestones within each subcompetency will be indicated by selecting the Milestones Level that best describes that individual's performance in relation to those milestones.

Systems-Based Practice 1: Patient Safety and Quality Improvement				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of common patient safety events	Identifies system factors that lead to patient safety events	Participates in analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	Actively engages teams and processes to modify systems to prevent patient safety events
Demonstrates knowledge of how to report patient safety events	Reports patient safety events through institutional reporting systems (simulated or actual)	Participates in disclosure of patient safety events to patients and their families (simulated or actual)	Discloses patient safety events to patients and their families (simulated or actual)	Role models or mentors others in the disclosure of patient safety events
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes local quality improvement initiatives (e.g., community vaccination rate, infection rate, smoking cessation)	Participates in local quality improvement initiatives	Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project	Creates, implements, and assesses quality improvement initiatives at the institutional or community level
Comments:			Not Yet 0	Completed Level 1
middle of a leve	at level and in lower	Selecting a response between levels indica in lower levels have b demonstrated as well milestones in the high	tes that milestones een substantially as some	

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Patient Care 1: Organization and Prioritization of Patient Care					
Level 1	Level 2	Level 3	Level 4	Level 5	
Organizes patient care responsibilities by focusing on a subset of patients	Organizes and prioritizes the simultaneous care of multiple patients, with guidance	Independently and efficiently prioritizes patient care based on level of acuity and available resources	Independently anticipates patient care needs and utilizes available resources to optimize patient care when volume and acuity approach the capacity of the team	Serves as a role model and coach for prioritizing and delegating patient care responsibilities when patient volume and acuity are high	
Comments: Not Yet Completed Level 1					

Patient Care 2: Acute Kidney Injury				
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes patients with acute kidney injury with available clinical data	Creates a basic differential diagnosis for patients with acute kidney injury	Formulates a comprehensive differential diagnosis for patients with acute kidney injury	Independently formulates a prioritized differential diagnosis for patients with common and uncommon causes of acute kidney injury	Independently formulates a prioritized differential diagnosis with consideration of rare or newly recognized causes of acute kidney injury
Develops a basic diagnostic strategy, with guidance	Interprets diagnostic test results	Independently formulates a diagnostic strategy	Independently interprets and integrates advanced diagnostic test results	Integrates innovative diagnostic strategies into practice
Develops a basic management plan, with guidance	Identifies patients who need urgent treatment, including dialysis and medication adjustment	Develops a management plan, including dialysis modality selection and/or disease-specific treatment	Independently develops and implements a management plan with consideration of patient acuity and complexity	Formulates a management plan, incorporating emerging therapies
Comments: Not Yet Completed Level 1				

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Patient Care 3: Chronic Dialysis Therapy				
Level 1	Level 2	Level 3	Level 4	Level 5
Lists the indication(s) for initiation of chronic dialysis and recognizes when chronic dialysis is inappropriate	Selects appropriate dialysis modality and writes patient-specific hemodialysis and peritoneal dialysis prescriptions	Modifies a dialysis prescription based on patient assessment	Independently manages patients receiving dialysis as part of the multidisciplinary team	Identifies the complexities of providing evidence- based equitable care to the population of patients receiving dialysis
Lists common complications in patients on chronic dialysis	Assesses for common complications of chronic dialysis	Treats common complications of chronic dialysis	Independently anticipates and manages common and uncommon complications of chronic dialysis	Anticipates and manages the breadth of comorbid medical and technical complications in the patient on dialysis
Identifies types of dialysis access and common access complications	Performs basic assessment of dialysis accesses	Develops a diagnostic and therapeutic plan for management of common access complications	Develops a diagnostic and therapeutic plan for management of uncommon access complications	Advocates at the institutional level for access preservation strategies
Comments: Not Yet Completed Level 1				

Patient Care 4: Chronic Kidney Disease				
Level 1	Level 2	Level 3	Level 4	Level 5
Develops a differential diagnosis of causes of chronic kidney disease	Expands the differential diagnosis	Reformulates the differential diagnosis as necessary for atypical disease presentations	Independently diagnoses common and uncommon causes of chronic kidney disease	Independently recognizes rare and newly described causes of chronic kidney disease
Develops a basic diagnostic plan for patients with chronic kidney disease	Modifies the diagnostic plan based on evolving clinical data for patients with chronic kidney disease, with guidance	Identifies patients with chronic kidney disease who require more evaluation, including kidney biopsy	Identifies indications for ordering advanced diagnostic studies	
Identifies stages of chronic kidney disease and how they relate to patient prognosis	Develops a basic management plan to treat complications and slow progression of chronic kidney disease	Implements an evidence- based management plan for chronic kidney disease complications and discusses treatment options	Independently leads the preparation for the next steps in management of progressive chronic kidney disease and integrates patient- specific goals of care	Identifies candidates for enrollment in research or novel and emerging therapies
Comments: Not Yet Completed Level 1 Not Yet Assessable				

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Patient Care 5: Transplant				
Level 1	Level 2	Level 3	Level 4	Level 5
Discusses indications and contraindications for kidney transplantation	Identifies patients eligible for kidney transplantation referral	Evaluates patients for kidney transplantation, with guidance	Independently evaluates patients for kidney transplantation as part of the multidisciplinary team	Identifies opportunities for equitable access to kidney transplantation and improving living donation rates and graft outcomes
Lists induction and maintenance immunosuppressive and prophylaxis therapies	Discusses the principles of routine post-transplant clinical management	Manages transplant recipients, with guidance	Independently manages transplant recipients	
Recognizes the potential complications in the immediate and late post- transplant period	Generates a differential diagnosis for common complications and proposes an initial management plan	Generates a comprehensive differential diagnosis for uncommon complications and implements a management plan	Independently diagnoses, works up, and manages complications	Integrates novel and emerging therapies for immunosuppression and transplant dysfunction
Comments: Not Yet Completed Level 1 Not Yet Assessable				

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Patient Care 6: Fluids, Electrolytes, and Acid-Base Disorders					
Level 1	Level 2	Level 3	Level 4	Level 5	
Creates a differential diagnosis and initial diagnostic plan	Develops a comprehensive differential diagnosis, recommends initial diagnostic testing, and identifies patients who require urgent treatment	Develops a prioritized differential diagnosis, interprets diagnostic test results, and implements a comprehensive management plan, with guidance	Independently formulates a differential diagnosis, including common and uncommon causes, and adjusts management plan based on patient response	Independently and effectively manages unusual, rare, or complex fluid and/or electrolyte disorder(s)	
Comments: Not Yet Completed Level 1					

Patient Care 7: Hypertension					
Level 1	Level 2	Level 3	Level 4	Level 5	
Identifies patients with hypertension	Develops a differential diagnosis of hypertension and proposes an initial diagnostic and management plan	Formulates a diagnostic strategy, interprets the results of specialized testing, and adjusts management plan based on results and patient comorbidities, with guidance	Independently develops and implements a management plan for patients with hypertension, and adjusts therapy based on patient acuity and complexity	Independently and effectively manages unusual, rare, or complex presentations of hypertension	
Comments: Not Yet Completed Level 1					

Patient Care 8: Glomerular Disease				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies patients with glomerular disease and distinguishes between patients with nephritis and those with nephrotic syndromes	Develops a differential diagnosis of glomerular disease and proposes an initial diagnostic and management plan	Formulates a diagnostic strategy, interprets the results of specialized testing (including biopsy), and adjusts management plan based on results, with guidance	Independently develops and implements a management plan for patients with glomerular diseases, and adjusts therapy based on patient acuity and complexity	Independently and effectively manages unusual, rare, or complex presentations of glomerular diseases
Comments: Not Yet Completed Level 1				

Patient Care 9: Competence in Procedures				
Level 1	Level 2	Level 3	Level 4	Level 5
Discusses the indications for and assists with all procedures	Performs procedures, with direct supervision	Competently performs procedures, with indirect supervision	Proficiently and independently performs procedures	Serves as an educational resource for procedures and their complications
Discusses potential procedural complications	Recognizes complications of procedures and enlists help	Manages complications of procedures, with supervision	Anticipates and independently manages complications of procedures	
Comments: Not Yet Completed Level 1 Not Yet Assessable				

Medical Knowledge 1: C	linical Reasoning			
Level 1	Level 2	Level 3	Level 4	Level 5
Organizes and accurately summarizes information obtained from evaluation of the patient to develop a clinical impression	Integrates information from all sources to develop a basic differential diagnosis for common patient presentations	Develops a thorough and prioritized differential diagnosis for common patient presentations	Synthesizes subtle, unusual, or conflicting findings to prioritize differential diagnoses in complex patient presentations	Coaches others to develop prioritized differential diagnoses in complex patient presentations
	Identifies clinical reasoning errors within patient care, with guidance	Retrospectively applies clinical reasoning principles to identify errors	Continually re-appraises own clinical reasoning to improve patient care in real time	Models how to recognize errors and reflect upon one's own clinical reasoning
Comments:			Not Yet C Not Yet A	ompleted Level 1

Medical Knowledge 2: P	hysiology and Pathophysic	blogy		
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies key physiological and pathophysiological concepts	Demonstrates knowledge of more complex physiology and pathophysiology	Applies knowledge of physiology and pathophysiology to diagnosis and management of routinely encountered conditions and presentations	Integrates knowledge of physiology and pathophysiology with diagnosis and management of more complex conditions and presentation	Synthesizes newly described and emerging clinical physiology and pathophysiology concepts with diagnosis and management
Comments:				ompleted Level 1

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of common patient safety events	Identifies system factors that lead to patient safety events	Participates in analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	Actively engages teams and processes to modify systems to prevent patient safety events
Demonstrates knowledge of how to report patient safety events	Reports patient safety events through institutional reporting systems (simulated or actual)	Participates in disclosure of patient safety events to patients and their families (simulated or actual)	Discloses patient safety events to patients and their families (simulated or actual)	Role models or mentors others in the disclosure of patient safety events
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes local quality improvement initiatives (e.g., community vaccination rate, infection rate, smoking cessation)	Participates in local quality improvement initiatives	Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project	Creates, implements, and assesses quality improvement initiatives at the institutional or community level

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of care coordination	Coordinates care of patients in routine clinical situations, effectively utilizing the roles of the interprofessional teams	Coordinates care of patients in complex clinical situations, effectively utilizing the roles of the interprofessional teams	Role models effective coordination of patient- centered care among different disciplines and specialties	Analyzes the process of care coordination and leads in the design and implementation of improvements
Identifies key elements for safe and effective transitions of care and hand-offs	Performs safe and effective transitions of care/hand-offs in routine clinical situations	Performs safe and effective transitions of care/hand-offs in complex clinical situations	Role models and advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems, including outpatient settings	Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes

Systems-Based Practice	3: Physician Role in Health	n Care Systems			
Level 1	Level 2	Level 3	Level 4	Level 5	
Identifies key components of the complex health care system (e.g., hospital, skilled nursing facility, finance, personnel, technology)	Describes how components of a complex health care system are interrelated, and how this impacts patient care	Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)	Manages various components of the complex health care system to provide efficient and effective patient care and transition of care	Advocates for or leads systems change that enhances high value, efficient, and effective patient care and transition of care	
Describes the principles of cost-effective care	Delivers care with consideration of each patient's payment model	Engages with patients in shared decision making, informed by cost-effective care principles	Advocates for patient care needs (e.g., community resources, patient assistance resources) regardless of ability to pay	Participates in health policy advocacy activities	
Comments:			Not Yet C	ompleted Level 1	

Practice-Based Learning	and Improvement 1: Evide	ence-Based and Informed P	Practice	
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates how to access and use available evidence, and incorporate patient preferences and values in order to take care of a routine patient	Articulates clinical questions and elicits patient preferences and values in order to guide evidence-based care	Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients	Critically appraises and applies evidence, even in the face of uncertainty and conflicting evidence, to guide care tailored to the individual patient	Coaches others to critically appraise and apply evidence for complex patients, and/or participates in the development of guidelines
Comments:			Not Yet C	ompleted Level 1

Level 1	Level 2	Level 3	Level 4	Level 5
Accepts responsibility for personal and professional development by establishing goals	Demonstrates openness to performance data (feedback and other input) in order to inform goals	Seeks performance data episodically, with adaptability and humility	Intentionally seeks performance data consistently, with adaptability and humility	Role models consistently seeking performance data with adaptability and humility
Identifies the factors which contribute to gap(s) between expectations and actual performance	Analyzes and reflects on the factors which contribute to gap(s) between expectations and actual performance	Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance	Challenges assumptions and considers alternatives in narrowing the gap(s) between expectations and actual performance	Coaches others on reflective practice
Actively seeks opportunities to improve	Designs and implements a learning plan, with prompting	Independently creates and implements a learning plan	Uses performance data to measure the effectiveness of the learning plan and, when necessary, improves it	Facilitates the design and implementation of learning plans for others

Professionalism 1: Profe	essional Behavior and Ethic	al Principles		
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies and describes potential triggers for professionalism lapses	Demonstrates insight into professional behavior in routine situations	Demonstrates professional behavior in complex or stressful situations	Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in self and others	Coaches others when their behavior fails to meet professional expectations
Describes when and how to appropriately report professionalism lapses, including strategies for addressing common barriers	Takes responsibility for own professionalism lapses	Recognizes need to seek help in managing and resolving complex ethical situations	Recognizes and utilizes appropriate resources for managing and resolving ethical dilemmas as needed (e.g., ethics consultations, literature	Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their
Demonstrates knowledge of the ethical principles underlying informed consent, surrogate decision making, advance directives, confidentiality, error disclosure, stewardship of limited resources, and related topics	Analyzes straightforward situations using ethical principles	Analyzes complex situations using ethical principles	review, risk management/legal consultation)	resolution
Comments:			Not Yet Co	ompleted Level 1

Professionalism 2: Acco	untability/Conscientiousne	SS			
Level 1	Level 2	Level 3	Level 4	Level 5	
Takes responsibility for failure to complete tasks and responsibilities, identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations	Recognizes situations that may impact others' ability to complete tasks and responsibilities in a timely manner	Takes ownership of system outcomes	
Responds promptly to requests or reminders to complete tasks and responsibilities	Recognizes situations that may impact own ability to complete tasks and responsibilities in a timely manner	Proactively implements strategies to ensure that the needs of patients, teams, and systems are met			
Comments:			Not Yet C	ompleted Level 1	

Professionalism 3: Self-	Awareness and Help-Seekir	ng		
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes status of personal and professional well-being, with assistance	Independently recognizes status of personal and professional well-being	With assistance, proposes a plan to optimize personal and professional well-being	Independently develops a plan to optimize personal and professional well-being	Coaches others when emotional responses or limitations in knowledge/ skills do not meet professional expectations
Recognizes limits in the knowledge/skills of self or team, with assistance	Independently recognizes limits in the knowledge/ skills of self or team and demonstrates appropriate help-seeking behaviors	With assistance, proposes a plan to remediate or improve limits in the knowledge/skills of self or team	Independently develops a plan to remediate or improve limits in the knowledge/skills of self or team	
Comments:			Not Yet C	completed Level 1

Interpersonal and Communication Skills 1: Patient and Family-Centered Communication				
Level 1	Level 2	Level 3	Level 4	Level 5
Uses language and nonverbal behavior to demonstrate respect and establish rapport	Establishes a therapeutic relationship in straightforward encounters using active listening and clear language	Establishes a therapeutic relationship in challenging patient encounters	Easily establishes therapeutic relationships, with attention to patient/ family concerns and context, regardless of complexity	Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships
Identifies common barriers to effective communication (e.g., language, disability) while accurately communicating own role within the health care system	Identifies complex barriers to effective communication (e.g., health literacy, cultural)	When prompted, reflects on personal biases while attempting to minimize communication barriers	Independently recognizes personal biases while attempting to proactively minimize communication barriers	Role models self- awareness while identifying a contextual approach to minimize communication barriers
Identifies the need to adjust communication strategies based on assessment of patient/ family expectations and understanding of their health status and treatment options	Organizes and initiates communication with patient/family by introducing stakeholders, setting the agenda, clarifying expectations, and verifying understanding of the clinical situation	With guidance, sensitively and compassionately delivers medical information, elicits patient/ family values, goals, and preferences, and acknowledges uncertainty and conflict	Independently, uses shared decision making to align patient/family values, goals, and preferences with treatment options to make a personalized care plan	Role models shared decision making in patient/family communication, including those with a high degree of uncertainty/conflict
Comments:			Not Yet C	ompleted Level 1

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Level 1	Level 2	Level 3	Level 4	Level 5
Respectfully requests a consultation	Clearly and concisely requests a consultation	Checks own understanding of consultant recommendations	Coordinates recommendations from different members of the health care team to optimize patient care	Role models flexible communication strategies that value input from all health care team members, resolving conflict when needed
Respectfully receives a consultation request	Clearly and concisely responds to a consultation request	Checks understanding of recommendations when providing consultation		
Uses language that values all members of the health care team	Communicates information effectively with all health care team members	Uses active listening to adapt communication style to fit team needs		
	Solicits feedback on performance as a member of the health care team	Communicates concerns and provides feedback to peers and learners	Communicates feedback and constructive criticism to superiors	Facilitates regular health care team-based feedback in complex situations

Level 1	Level 2	Level 3	Level 4	Level 5
Accurately records information in the patient record	Demonstrates organized diagnostic and therapeutic reasoning through notes in the patient record	Concisely reports diagnostic and therapeutic reasoning in the patient record	Communicates clearly, concisely, timely, and in an organized written form, including anticipatory guidance	Models feedback to improve others' written communication
Safeguards patient personal health information	Demonstrates accurate, timely, and appropriate use of documentation shortcuts Documents required data in formats specified by institutional policy	Appropriately selects direct (e.g., telephone, in- person) and indirect (e.g., progress notes, text messages) forms of communication based on context	Achieves written or verbal communication (e.g., patient notes, email) that serves as an example for others to follow	Guides departmental or institutional communication around policies and procedures
Communicates through appropriate channels as required by institutional policy (e.g., patient safety reports, cell phone/pager usage)	Respectfully communicates concerns about the system	Uses appropriate channels to offer clear and constructive suggestions to improve the system	Initiates difficult conversations with appropriate stakeholders to improve the system	Facilitates dialogue regarding systems issues among larger community stakeholders (institution, health care system, field)