



Pediatric Pulmonology Milestones

ACGME International, Inc. (ACGME-I)



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Pediatric Pulmonology 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 v).

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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: Not Yet Completed Level 1 <input type="checkbox"/>				

Selecting a response box in the middle of a level implies that milestones in that level and in lower levels have been substantially demonstrated.

Selecting a response box on the line in between levels indicates that milestones in lower levels have been substantially demonstrated as well as **some** milestones in the higher level(s).

Patient Care 1: Clinical Reasoning				
Level 1	Level 2	Level 3	Level 4	Level 5
Gathers and reports clinical facts (e.g., history, exam, diagnostics, consultations) with limited pulmonary focus	Filters and prioritizes clinical facts to develop a limited pulmonary differential diagnosis	Synthesizes clinical facts into unifying pulmonary diagnosis(es) for uncomplicated or typical presentations	Synthesizes clinical facts into unifying pulmonary diagnosis(es) for complicated or atypical presentations	Serves as a peer expert to distinguish nuances among pulmonary diagnoses
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Completed Level 1 <input type="checkbox"/> Not Yet Assessable <input type="checkbox"/>

Patient Care 2: Organize and Prioritize Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
Completes tasks for an individual patient, with substantial guidance	Organizes patient care responsibilities by focusing on individual (rather than multiple) patients	Organizes, delegates, and prioritizes the simultaneous care of multiple patients; anticipates and triages urgent and emergent issues	Efficiently organizes and prioritizes patient care responsibilities even when patient volume and acuity are high	Serves as an interdisciplinary resource to develop innovative strategies to manage complex patient care environments
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Completed Level 1 <input type="checkbox"/>
				Not Yet Assessable <input type="checkbox"/>

Patient Care 3: Diagnostic and Management Plan				
Level 1	Level 2	Level 3	Level 4	Level 5
Reports diagnostic and management plans developed by others	Participates in the creation of diagnostic and management plans	Develops an interdisciplinary diagnostic and management plan for common and typical diagnoses	Develops and implements informed diagnostic and management plans for complicated and atypical diagnoses, with the ability to modify plans as necessary	Serves as a peer expert for development of diagnostic and management plans for complicated and atypical diagnoses
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Completed Level 1 <input type="checkbox"/> Not Yet Assessable <input type="checkbox"/>

Patient Care 4: Bronchoscopy				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies indications for bronchoscopy and their risks, benefits, and alternatives	Assesses indications, risks, and benefits, and weighs alternatives in low-risk situations; obtains informed consent	Assesses indications, risks, and benefits, and weighs alternatives in high-risk situations	Acts to mitigate modifiable risk factors in high-risk or complex situations	
Performs and interprets simple bronchoscopy, with significant assistance and coaching	Performs and interprets simple bronchoscopy, with coaching	Performs and interprets complex bronchoscopy, with coaching	Performs and interprets complex bronchoscopy	Is recognized by peers as a procedural expert and/or implements new techniques in the program
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Completed Level 1 <input type="checkbox"/>
				Not Yet Assessable <input type="checkbox"/>

Medical Knowledge 1: Diagnostic Evaluation (e.g., pulmonary function tests, arterial blood gas tests, imaging, genetics)				
Level 1	Level 2	Level 3	Level 4	Level 5
Reports results of diagnostic studies	Identifies clinically significant diagnostic study results, with guidance	Independently interprets clinical significance of common diagnostic study results	Independently interprets clinical significance of complex diagnostic study results	Serves as a peer expert for interpreting the clinical significance of complex diagnostic study results
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				
				Not Yet Completed Level 1 <input type="checkbox"/>
				Not Yet Assessable <input type="checkbox"/>

Medical Knowledge 2: Physiology and Pathophysiology				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies key clinical physiological and pathophysiological concepts	Associates basic knowledge of clinical physiology and pathophysiology with diagnosis	Applies basic knowledge of clinical pathophysiology to diagnosis and management	Applies advanced knowledge of clinical pathophysiology with diagnosis and management	Serves as a peer expert for applying knowledge of clinical physiology and pathophysiology
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			Not Yet Completed Level 1	<input type="checkbox"/>
			Not Yet Assessable	<input type="checkbox"/>

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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

Systems-Based Practice 2: System Navigation for Patient-Centered Care				
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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

Systems-Based Practice 3: Physician Role in Health 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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

Practice-Based Learning and Improvement 1: Evidence-Based and Informed 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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Accepts responsibility for personal and professional development by establishing goals</p> <p>Identifies the factors which contribute to gap(s) between expectations and actual performance</p> <p>Actively seeks opportunities to improve</p>	<p>Demonstrates openness to performance data (feedback and other input) in order to inform goals</p> <p>Analyzes and reflects on the factors which contribute to gap(s) between expectations and actual performance</p> <p>Designs and implements a learning plan, with prompting</p>	<p>Seeks performance data episodically, with adaptability and humility</p> <p>Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance</p> <p>Independently creates and implements a learning plan</p>	<p>Intentionally seeks performance data consistently, with adaptability and humility</p> <p>Challenges assumptions and considers alternatives in narrowing the gap(s) between expectations and actual performance</p> <p>Uses performance data to measure the effectiveness of the learning plan and, when necessary, improves it</p>	<p>Role models consistently seeking performance data with adaptability and humility</p> <p>Coaches others on reflective practice</p> <p>Facilitates the design and implementation of learning plans for others</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Completed Level 1 <input type="checkbox"/>

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

Professionalism 2: Accountability/Conscientiousness				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Takes responsibility for failure to complete tasks and responsibilities, identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future</p> <p>Responds promptly to requests or reminders to complete tasks and responsibilities</p>	<p>Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations</p> <p>Recognizes situations that may impact own ability to complete tasks and responsibilities in a timely manner</p>	<p>Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations</p> <p>Proactively implements strategies to ensure that the needs of patients, teams, and systems are met</p>	<p>Recognizes situations that may impact others' ability to complete tasks and responsibilities in a timely manner</p>	<p>Takes ownership of system outcomes</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Comments:</p> <p style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></p>				

Professionalism 3: Self-Awareness and Help-Seeking				
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	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				
Not Yet Completed Level 1 <input type="checkbox"/>				

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

Interpersonal and Communication Skills 2: Interprofessional and Team Communication				
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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Completed Level 1 <input type="checkbox"/>

Interpersonal and Communication Skills 3: Communication within Health Care Systems				
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)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				
				Not Yet Completed Level 1 <input type="checkbox"/>