Interventional Pulmonology Milestones

The Accreditation Council for Graduate Medical Education



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Interventional Pulmonology Milestones

The Milestones are designed only for use in evaluation of fellows in the context of their participation in ACGME-accredited fellowship programs. The Milestones provide a framework for the assessment of the development of the fellow in key dimensions of the elements of physician competence in a 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.

Interventional Pulmonology Milestones Work Group

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American Association for Bronchoscopy and Interventional Pulmonology

American Board of Internal Medicine

Association of Interventional Program Directors

Review Committee for Internal Medicine

Understanding Milestone Levels and Reporting

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

Milestones are arranged into levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert 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, a junior fellow may achieve higher levels early in his/her educational program just as a senior fellow may be at a lower level later in his/her educational program. There is no predetermined timing for a fellow to attain any particular level. 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 fellow.

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

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. Level 5 is designed to represent an expert 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. The ACGME and its partners will continue to evaluate and perform research on the Milestones to assess their impact and value.

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

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

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.

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

Systems-Based Practice 2: Coordination and Transition of 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 using the members of the interprofessional teams	Coordinates care of patients in complex clinical situations effectively using the members of the interprofessional teams	Coordinates care of patients in complex clinical situations 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 handoffs	Performs safe and effective transitions of care/handoffs in routine clinical situations	Performs safe and effective transitions of care/handoffs in complex clinical situations	Advocates for safe and effective transitions of care/handoffs within and across health care delivery systems	Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes	
Comments:			Not Yet C	ompleted Level 1	
Selecting a response box in the Selecting a response box on the line in					
middle of a level implies that			between levels indicates that milestones		
	level and in lower		in lower levels have been substantially		
levels have been demonstrated.	substantially	demonstrated as milestones in the			

Patient Care 1: Advanced Diagnostic Bronchoscopy					
Level 1	Level 2	Level 3	Level 4	Level 5	
Performs uncomplicated diagnostic flexible bronchoscopy with minimal coaching and recognizes common peri-procedural complications	With assistance, executes advanced diagnostic interventional flexible bronchoscopy procedures and manages common peri-procedural complications	With coaching, executes advanced diagnostic interventional flexible and rigid bronchoscopy procedures and manages complex peri-procedural complications	Independently executes advanced diagnostic flexible and rigid bronchoscopy Implements new techniques in the p and/or coaches oth manage all levels of the coaches of the c		
Comments: Not Yet Completed Level 1 Not Yet Assessable					

Patient Care 2: Therapeutic Bronchoscopy					
Level 1	Level 2	Level 3	Level 4	Level 5	
Performs uncomplicated therapeutic flexible bronchoscopy with minimal coaching and recognizes common peri-procedural complications	With assistance, executes routine therapeutic interventional flexible bronchoscopy procedures and manages common peri-procedural complications	With coaching, executes therapeutic interventional flexible and rigid bronchoscopy procedures on patients with complex or high-risk airway disease and manages complex peri-procedural complications	Independently executes therapeutic flexible and rigid bronchoscopy procedures on patients with complex or highrisk airway disease, and anticipates and manages all periprocedural complications	Implements new techniques for therapeutic bronchoscopy and/or coaches others to manage all levels of periprocedural complications	
Comments: Not Yet Completed Level 1 Not Yet Assessable					

Patient Care 3: Percutaneous Procedures						
Level 1	Level 2	Level 3	Level 4	Level 5		
With assistance, performs straightforward percutaneous procedures	With coaching, performs straightforward procedures and with assistance, performs complex procedures	Independently performs straightforward procedures and with coaching, performs complex procedures, including management of complex peri-procedural complications	Independently performs all procedures and manages all peri- procedural complications	Demonstrates superior technical skill in the most complex, high-risk procedures and manages complex peri-procedural complications		
Comments: Not Yet Completed Level 1 Not Yet Assessable						

Level 1	Level 2	Level 3	Level 4	Level 5
Discusses indications, risks, and benefits for straightforward procedures	With assistance, identifies the indications, risks, and benefits to individualized patient care	With coaching, selects and plans complex, high- risk procedures based on indications, risks, selection of alternatives, and benefits to individualized patient care	Independently selects and plans complex, high-risk procedures based on indications, risks, selection of alternatives, and benefits to individualized patient care	Demonstrates advanced decision making in complex clinical scenarios and procedural selection and coaches others
Discusses prerequisite diagnostic testing, imaging, and optimal medical management strategies	With assistance, evaluates diagnostic testing and imaging, and optimizes medical management	With coaching, evaluates diagnostic testing and imaging, and optimizes medical management	Independently evaluates diagnostic testing and imaging, and optimizes medical management	Demonstrates advanced decision making in managing complex clinical scenarios

Patient Care 5: Post-Procedural Management						
Level 1	Level 2	Level 3	Level 4	Level 5		
Identifies longitudinal patient care needs	Manages routine longitudinal patient care	Manages complex longitudinal patient care with coaching	Independently manages complex longitudinal patient care	Mentors others in longitudinal care		
Identifies types of complications	Manages common complications	Manages complex complications with coaching	Independently anticipates, mitigates, and manages complications	Develops a clinical pathway for management of complex longitudinal patient care through multidisciplinary teams		
Comments: Not Yet Completed Level 1 Not Yet Assessable						

Patient Care

Yes	No)	Conditional	on I	mprovemer	١t

Medical Knowledge 1: Anatomy and Physiology					
Level 1	Level 2	Level 3	Level 4	Level 5	
Identifies normal anatomy of airway, lung, mediastinum, and pleura during procedures and through imaging	Identifies location and implications of the anatomic abnormalities for procedure planning	Identifies the appropriate diagnostic procedural approach based on anatomic location of chest abnormalities	Identifies the appropriate diagnostic and therapeutic approach based on anatomic location of chest abnormalities	Mentors others in obtaining medical knowledge regarding implications of complexity of anatomic variations during procedures	
Demonstrates knowledge of pathophysiology of straightforward pulmonary conditions	Demonstrates knowledge of pathophysiology and treatment of patients with straightforward pulmonary conditions	Demonstrates knowledge of pathophysiology and treatment of patients with complex pulmonary conditions	Applies knowledge of pathophysiology and treatment of patients with complex conditions	Contributes to peer- reviewed literature on pathophysiology and/or treatment	
Comments: Not Yet Completed Level 1 Not Yet Assessable					

Medical Knowledge 2: Benign and Malignant Diseases					
Level 1	Level 2	Level 3	Level 4	Level 5	
Demonstrates scientific knowledge of common benign and malignant diseases of the chest	Applies scientific knowledge of common benign and malignant diseases of the chest	Applies scientific knowledge of complex benign and malignant diseases of the chest	Independently applies scientific knowledge of benign and malignant diseases of the chest	Expertly teaches scientific knowledge of complex benign and malignant diseases of the chest	
Demonstrates knowledge of pharmacology and therapeutics for common diseases of the chest	Applies knowledge of pharmacology and therapeutics for common diseases of the chest	Applies knowledge of pharmacology and therapeutics for complex diseases of the chest	Independently applies knowledge of pharmacology and therapeutics for complex diseases of the chest	Applies cutting-edge knowledge of pharmacology and therapeutics for complex diseases of the chest	
Comments: Not Yet Completed Level 1 Not Yet Assessable					

Medical Knowledge 3: Devices, Techniques, and Outcomes						
Level 1	Level 2	Level 3	Level 4	Level 5		
Identifies commonly used devices	Demonstrates knowledge of commonly used devices, techniques, and outcomes	Integrates knowledge of the indications, contraindications, side effects, and complications of commonly used devices, techniques, and outcomes	Independently applies knowledge of devices, techniques, and outcomes into procedures and peri- procedural care	Achieves a superior level of knowledge to effectively teach others about devices, techniques, and outcomes		
Comments: Not Yet Completed Level 1 Not Yet Assessable						

Medical Knowledge

Yes	No	Conditional	on Im	provement

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 families (simulated or actual)	Discloses patient safety events to patients and families (simulated or actual)	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 lung cancer screening rates, 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 Completed Level 1					

	2: Coordination and Trans		I,	
Level 1 Demonstrates knowledge of care coordination	Level 2 Coordinates care of patients in routine clinical situations effectively collaborating with members of the interprofessional team	Level 3 Coordinates care of patients in complex clinical situations effectively collaborating with members of the interprofessional team	Level 4 Coordinates care of patients in complex clinical situations among different disciplines and specialties	Level 5 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	Advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems	Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes
Comments: Not Yet Completed Level 1				

Systems-Based Practice 3: Population Health					
Level 1	Level 2	Level 3	Level 4	Level 5	
Demonstrates knowledge of population and community health needs and disparities	Identifies specific population and community health needs and inequities for the local population	Uses local resources effectively to meet the needs of a patient population in the community	Advocates for changing and adapting practice to provide for the needs of specific populations	Leads innovations and advocates for populations and communities with health care inequities	
Comments:			Not Yet Co	ompleted Level 1	

Systems-Based Practice 4: Physician Role in Health Care Systems				
Level 1	Level 2	Level 3	Level 4	Level 5
Describes basic health care delivery systems (e.g., practice and payment models, accountable care organizations)	Describes how components of a complex health care delivery system are interrelated, and how this impacts patient care (e.g., out-of-network hospitalizations)	Discusses how individual practice affects the broader system (e.g., length of stay, cost of care, readmission rates, clinical efficiency)	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 or leads systems change that enhances high-value, efficient, and effective patient care
Comments: Not Yet Completed Level 1				

Systems-Based Practice

The fellow is demor	nstrating s	satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training
program. The fellov	v is demo	nstrating a learning trajectory that anticipates the achievement of competency for unsupervised practice that
includes the deliver	ry of safe,	effective, patient-centered, timely, efficient, and equitable care.
Yes N	No	Conditional on Improvement

Level 1	and Improvement 1: Evide Level 2	Level 3	Level 4	Level 5
Demonstrates how to access and apply available evidence to care for patients	Elicits patient preferences and values to guide evidence-based care for patients	Locates and applies the best available evidence, integrated with patient preference to care for 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; and/or participates in the development of guidelines
Demonstrates knowledge of basic trial design and statistical concepts and communicates details of published scientific work	Reads scientific literature, identifies gaps, and generates hypotheses for planned scholarly activity	Participates in a scholarly project	Presents scholarly activity at local or regional meetings, and/or submits an abstract of their scholarly work to a regional meeting	Effectively presents scholarly work at national and international meetings or has a peer reviewed publication accepted or grant funded
Comments: Not Yet Completed Level 1				

Practice-Based Learning	and Improvement 2: Reflec	ctive Practice and Commit	ment to Personal Growth	
Level 1	Level 2	Level 3	Level 4	Level 5
Accepts responsibility for personal and professional development by establishing goals	Demonstrates openness to performance feedback in order to inform goals	Seeks performance feedback episodically, with adaptability and humility	Intentionally seeks performance feedback consistently with adaptability and humility	Consistently role models the seeking of 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	Identifies and uses alternative methods to narrow the gap(s) between expectations and actual performance	Coaches others on reflective practice
Actively seeks opportunities to improve knowledge and abilities	Designs and implements a learning plan, with prompting	Independently creates and implements a learning plan	Uses performance feedback to measure the effectiveness of the learning plan and when necessary, improves it	Facilitates the design and implementation of learning plans for others
Comments:			Not Yet Co	ompleted Level 1

Practice-Based Learning and Improvement

Yes	No	Canditional	- n	Improvement
162	110	Conditional	OH	IIIIbioveilleil

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies and describes potential triggers for professionalism lapses in self	Demonstrates insight into professional behavior in routine situations and takes responsibility for one's own professionalism lapses	Demonstrates professional behavior in complex or stressful situations	Recognizes situations that may trigger professionalism lapses and acts to prevent them	Recognized by peers as a resource for professionalism concerns
Recognizes professionalism lapses in others	Knows institutional processes for reporting professionalism lapses, including strategies for addressing common barriers	Follows institutional processes for reporting professionalism lapses, including strategies for addressing common barriers	Intervenes to prevent and address professionalism lapses in peers	Coaches peers when their behavior fails to meet professional expectations
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 and applies them to practice	Analyzes complex situations using ethical principles and applies them to practice, while recognizing the need to seek help in managing these situations	Recognizes and utilizes appropriate resources for managing and resolving ethical dilemmas as needed (e.g., ethics consultations, literature review, risk management/legal consultation)	Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution

Professionalism 2: Acco	untability			
Level 1	Level 2	Level 3	Level 4	Level 5
Completes tasks and responsibilities in response to requests or reminders	Completes tasks and responsibilities in a timely manner, without reminders	Completes tasks and responsibilities without reminders, identifies potential barriers to completion, and acts to mitigate those barriers in routine situations	Completes tasks and responsibilities without reminders, identifies potential barriers to completion, and acts to mitigate those barriers in complex or stressful situations	Assists others in developing strategies for completing tasks and responsibilities
Recognizes the principles of conflict of interest in relationships with industry and other entities	Recognizes personal potential conflicts with industry	Seeks assistance in managing personal relationships with industry and other entities to minimize bias and undue influence in practice	Identifies, discloses, and manages relationships with industry and other entities to minimize bias and undue influence in practice	
Comments: Not Yet Completed Level 1				

Professionalism 3: Well-Being and Resiliency					
Level 1	Level 2	Level 3	Level 4	Level 5	
Identifies elements of well-being and describes risk factors for burnout, and signs and symptoms of burnout and depression in self or peers	With assistance, recognizes status of well- being and risk factors for maladaptation in self or peers	Independently recognizes status of well-being in self or peers and reports concerns to appropriate personnel	Develops and implements a plan to improve well-being of self or peers, including utilization of institutional or external resources	Recommends and facilitates system changes to promote well-being in a practice or institution	
Comments:			Not Yet Co	ompleted Level 1	

This subcompetency is not intended to evaluate a fellow's well-being, but to ensure each fellow has the fundamental knowledge of factors that impact well-being, the mechanisms by which those factors impact well-being, and available resources and tools to improve well-being.

Professionalism

The fellow is demonstrating	satisfactory development of the knowledge, skill, and attitudes/behaviors needed to advance in the training
program. The fellow is demo	nstrating a learning trajectory that anticipates the achievement of competency for unsupervised practice that
includes the delivery of safe	effective, patient-centered, timely, efficient, and equitable care.
•	
Yes No	Conditional on Improvement

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 using effective communication behaviors in straightforward encounters	Establishes a therapeutic relationship using effective communication behaviors in challenging patient encounters	Establishes therapeutic relationships using shared decision making (e.g., attention to patient/family concerns and context), regardless of complexity	Coaches others in developing therapeutic relationships and mitigating communication barriers
Identifies common barriers to effective communication (e.g., language, disability, personal bias)	Identifies complex barriers to effective communication (e.g. health literacy, cultural), including personal bias	Mitigates communication barriers, including personal bias	Role models the mitigation of communication barriers	
Comments: Not Yet Completed Level 1				

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic understanding of informed consent process	Answers questions about treatment plan and seeks guidance when appropriate	Counsels patient through the decision-making process in understandable terms, including a description of all alternative treatment options for simple clinical problems	Counsels patient through the decision- making process in understandable terms, including a description of all alternative treatment options for complex clinical problems	Coaches others in counseling a patient through the decision-making process in understandable terms, including a description of all alternative treatment options for complex and uncommon clinical problems

Interpersonal and Communication Skills 3: Interprofessional and Team Communication				
Level 1	Level 2	Level 3	Level 4	Level 5
Uses language that values all members of the team	Communicates information, including basic feedback with all team members	Facilitates team communication to reconcile conflict and provide difficult feedback	Adapts communication style to fit team needs and maximizes impact of feedback to the team	Role models flexible communication strategies that facilitate excellence in teamwork
Comments: Not Yet Completed Level 1				

Level 1	Level 2	Level 3	Level 4	Level 5
Accurately records comprehensive information	Records necessary information and concisely documents clinical reasoning most of the time	Records necessary information and concisely documents clinical reasoning	Documents clinical reasoning concisely in an organized form, including next steps in care	Guides departmental or institutional communication policies and procedures
Communicates using formats specified by institutional policy to safeguard patient personal health information	Selects direct (e.g., telephone, in-person) and indirect (e.g., progress notes, text messages) forms of communication based on context, with assistance	Appropriately selects direct and indirect forms of communication based on context	Role models effective written and verbal communication	

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies prognostic communication as a key element for shared decision making	Assesses the patient's families'/caregivers' prognostic awareness and identifies preferences for receiving prognostic information	Delivers basic prognostic information and attends to emotional responses of patient and families/caregivers	Tailors communication of prognosis according to disease characteristics and trajectory, patient consent, family needs, and medical uncertainty, and manages intense emotional response	Coaches others in communicating prognostic information
Identifies the need to assess patient/family expectations and understanding of their health status and treatment options	Facilitates communication with patient/family by introducing stakeholders, setting the agenda, clarifying expectations, and verifying an understanding of the clinical situation	Sensitively and compassionately delivers medical information; elicits patient/family values, goals and preferences; and acknowledges uncertainty and conflict, with guidance	Independently uses shared decision making to align patient/family values, goals, and preferences with treatment options to make a personalized care plan in situations with a high degree of uncertainty and conflict	Coaches shared decision making in patient/family communication

Interpersonal and Communication Skills

Version 1	Interventional Pulmonary Milestones, ACGME Report Worksheet
Yes No Conditional on	Improvement
Overall Clinical Competence	
This rating represents the assessment of the	fellow's development of overall clinical competence during this year of training:
Superior: Far exceeds the expected lev	el of development for this year of training.
Satisfactory: Always meets and occasion	onally exceeds the expected level of development for this year of training.
<u> </u>	me developmental milestones but occasionally falls short of the expected level of development for plan is in place to facilitate achievement of competence appropriate to the level of training.
Unsatisfactory: Consistently falls short of	of the expected level of development for this year of training.