Charting the Road to Competence: Developmental Milestones for Internal Medicine Residency Training

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Abstract

Background The Accreditation Council for Graduate Medical Education (ACGME) Outcome Project requires that residency program directors objectively document that their residents achieve competence in 6 general dimensions of practice.

Intervention In November 2007, the American Board of Internal Medicine (ABIM) and the ACGME initiated the development of milestones for internal medicine residency training. ABIM and ACGME convened a 33-member milestones task force made up of program directors, experts in evaluation and quality, and representatives of internal medicine stakeholder organizations. This article reports on the development process and the resulting list of proposed milestones for each ACGME competency.

Outcomes The task force adopted the Dreyfus model of skill acquisition as a framework the internal medicine milestones, and calibrated the milestones with the expectation that residents achieve, at a minimum, the

"competency" level in the 5-step progression by the completion of residency. The task force also developed general recommendations for strategies to evaluate the milestones.

Discussion The milestones resulting from this effort will promote competency-based resident education in internal medicine, and will allow program directors to track the progress of residents and inform decisions regarding promotion and readiness for independent practice. In addition, the milestones may guide curriculum development, suggest specific assessment strategies, provide benchmarks for resident self-directed assessment-seeking, and assist remediation by facilitating identification of specific deficits. Finally, by making explicit the profession's expectations for graduates and providing a degree of national standardization in evaluation, the milestones may improve public accountability for residency training.

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Introduction

In July 2002, the Accreditation Council for Graduate Medical Education (ACGME) Outcome Project changed the currency of accreditation from process and structure (capturing a program's potential to educate) to outcomes (capturing a program's actual accomplishments).[1] Residency program directors were asked to provide more than a schedule of rotations, a written curriculum, and agreements with clinical training venues. They also must objectively document that their residents achieve competence in 6 general dimensions of practice. In phase 1 of the Outcome Project, programs defined objectives to demonstrate learning in the competencies. In phase 2 they integrated the competencies into their curricula and expanded their evaluation systems to assess performance in them. Programs are currently in phase 3, which requires them to use aggregate performance data for curriculum reform. Phase 4 intends to focus on identification of benchmark programs. This paradigm shift in training, hailed as the Flexnerian revolution of the 21st century,[2] is

aimed at enhancing our profession's ability to verify that graduates of residency programs are competent, at a minimum, to deliver safe and effective patient care.

Although the Outcome Project has advanced residency training in important ways, it has not resulted in widespread "operationalizing" of outcomes in the evaluation of residents or in the accreditation of programs. This may be partly because of the complex nature of the competencies, which reflect high-level syntheses of more operationally measurable learning objectives. To move the process forward, the ACGME has engaged the medical education community in "articulating milestones of competency development in each discipline."[3] The milestones would explicate the 6 ACGME general competencies by describing a developmental progression of observable behaviors. Programs would use the milestones to provide more specific feedback and evaluation to residents and ensure that they acquire the necessary knowledge, skills, and attitudes for advancing in the program and entering the next phase of their careers. The ACGME would use program performance on the milestones as currency for accreditation actions.

In November 2007, the American Board of Internal Medicine (ABIM) and the ACGME sponsored an initiative to develop milestones for internal medicine residency training. Herein we report the development process and the resulting list of proposed milestones for each ACGME competency.

Methods

The ABIM and ACGME convened a 33-member milestones task force (APPENDIX 1) composed of program directors, experts in evaluation and quality, and representatives of internal medicine stakeholder organizations, including the Alliance for Academic Internal Medicine, American College of Physicians, American Medical Association, Association of Program Directors in Internal Medicine, and the Society of General Internal Medicine. These individuals participated with the understanding that the resulting milestones document would not signify official policy of their respective organizations. Even though ABIM and ACGME provided funding, meeting space, and administrative support for this project, they agreed to maintain the editorial independence of the task force. An initial 2-day meeting included an overview of the Alliance for Academic Internal Medicine Education Redesign Task Force Consensus Report,[4] a brainstorming session on the potential utility of developmental milestones, presentations of milestones initiatives at 3 residency programs (Michigan State,[5] Lehigh Valley, and Baystate), a facilitated discussion of several conceptual frameworks of competence,[6–9] and division of the task force into subcommittees representing the 6 ACGME general competencies.

The subcommittees worked independently, via conference calls and a PBwiki collaboration Internet site (PBworks, San Mateo, CA), to develop an initial set of

milestones and suggested evaluation strategies for each competency. In their work, they reviewed the revised ACGME common program requirements and Residency Review Committee for Internal Medicine program requirements (effective July 2009),[10] relevant medical education literature, and several internal medicine program curricula. The larger task force assembled for a second 2-day meeting in May 2008. The agenda included (1) achieving a consensus for a minimum standard for "competence" for internal medicine residents, (2) aligning evaluation strategies with particular milestones, and (3) considering practical issues, such as the resource and expertise requirements for programs. In addition, a writing committee was constituted from representatives from each subcommittee. Its charge was to refine and standardize the milestone language, reconcile redundancies and conflicts, and compose a document that articulated the need for developmental milestones, recorded the task force's process, and placed the initiative in the context of ongoing graduate medical education reform.

The members of the larger task force reviewed the document individually and provided additional commentary at a third meeting in December 2008. In particular, the task force recommended condensing the original detailed 64-page document to a briefer overview for the purpose of sharing the milestones with the broader medical education community. The writing committee revised the document accordingly and prepared it for external review. In total, members of the writing committee participated in 6 conference calls, 2 in-person meetings, and numerous e-mail exchanges.

Results

The task force adopted the Dreyfus model[8,9] of skill acquisition as a framework for developing milestones for internal medicine residency training. Specifically, we calibrated the milestones with the expectation that residents achieve, at a minimum, the "competency" level in the 5-step progression before completion of residency training. This threshold is consistent with other applications of the Dreyfus model to medical education.[11–15] By the time a learner reaches "competence," he or she has already progressed from simply applying rules to facts and features without context (novice) to considering the specific features of concrete "situations" (advanced beginner). The competent learner considers both context-free and situational elements but also hierarchically organizes and reduces them to a smaller set on which to base a decision. In addition, he or she becomes more intimately involved in the process and feels more responsibility for the outcome. In the next stage, proficiency, learners solve problems with an intuition that usually derives from some time in independent practice. Thus, although it is expected that some residents will achieve proficiency in some competencies, the task force decided not to set "proficiency" as a minimum threshold.

APPENDIX 2 lists the developmental milestones for internal medicine residency training, organized in terms of the ACGME general competencies and the extended specialty-specific requirements added by the Residency Review Committee for Internal Medicine. The ACGME-proposed bullets subdividing the competencies were used as the framework to organize the milestones. These subdivisions are either included verbatim or collapsed into a smaller number of categories. Recognizing that competence can be observed only in performance, we phrased the milestones in behavioral terms. We also suggested approximate time frames for residents to reach each milestone, recognizing a certain amount of arbitrariness in the process and anticipating that, for some milestones, achievement times may vary widely among programs with different curricula. For example, residents in a program that does not offer a quality improvement curriculum until the third year may not meet many of the practice-based learning and improvement milestones until then.

Finally, we confined our recommendations for evaluating the milestones (APPENDIX 2) to general strategies. The writing committee decided that a detailed discussion about the availability, formats, feasibility, and psychometric characteristics of specific assessment instruments was beyond the scope of this initiative, which focused on articulating the milestones. Among the general strategies, we did not include global ratings because faculty scoring fails to distinguish between performance in the 6 competencies.[16] We did not link learning portfolios to particular milestones, as these collections may include evaluation items from all 6 competencies. The recommended evaluation strategies are intended not as prescriptions but rather as a range of options for program directors, who may choose among them or develop their own, based on their expertise, resources, programmatic objectives, and institutional values.

Discussion

We propose this list of milestones to promote competency-based training in internal medicine. Residency program directors may use them to track the progress of trainees in the 6 general competencies and inform decisions regarding promotion and readiness for independent practice. In addition, the milestones may guide curriculum development, suggest specific assessment strategies, provide benchmarks for resident self-directed assessment-seeking,[17] assist remediation by facilitating identification of specific deficits, and provide a degree of national standardization in evaluation. Finally, by explicitly enumerating the profession's expectations for graduates, they may improve public accountability for residency training.

It is worth noting that many of the milestones—particularly in practice-based learning and improvement, systems-based practice, communication and interpersonal skills, and professionalism competencies—are not unique to internal medicine. Physicians in any specialty should demonstrate competence in these "horizontal" dimensions of clinical practice. Thus, educators in other specialties may adopt some of our work as they develop milestones for their residency programs.

Some may find that the "generous" time frames set a low bar, believing that residents should reach some of the early milestones sooner. Indeed, in keeping with our decision to set a floor rather than a ceiling, we set the time frames with the expectation that a resident's failure to reach them would trigger further assessment and possibly remediation. At a programmatic level, a significant deviation from the expected progression along the milestones may trigger an accreditation action. Thus, we expect that many normally progressing residents will reach many of the milestones in advance of the "deadline." A few exceptional graduating medical students may even begin their internship part of the way "down the road." Finally, these time frames represent a starting point of an ongoing dialogue. We expect them to be refined based on the implementation pilot projects planned for the next phase.

We also anticipate that some program directors, weary from complying with the "musts" and "shoulds" handed down from the ACGME, may receive the milestones as yet another bureaucratic burden. On the contrary, we foresee the milestones making their jobs easier. The specific observable behaviors embodied in them, for instance, should *assist* program directors, who have hitherto struggled to translate the more general language of the 6 competencies into concrete assessments.[18] Nor should this initiative stifle creativity and innovation. In the spirit of the Outcome Project, program directors remain free to develop innovative structures, curricula, and evaluation systems, provided they demonstrate learning "outcomes" in the 6 competencies, which are now elaborated in the milestones. Finally, we expect that residents, who often receive feedback lacking a specific action plan,[19] will welcome the more actionable feedback afforded by the milestones framework.

Of course, "This is not the end," as Churchill said in 1942. "It is not even the beginning of the end. But it is, perhaps, the end of the beginning." More work is needed before these milestones can be successfully integrated into competency-based evaluation systems. Specifically, we will solicit commentary from the broader medical education community to help us refine the proposed milestones and correct any omissions or redundancies. We must also articulate concrete behavioral anchors for each developmental stage, identify psychometrically robust and feasible evaluation instruments to assess residents' progress, and train faculty to use these instruments effectively.[20] Finally, we will learn practical lessons from the initial implementation experience, as diverse residency programs, beginning with pilot projects, integrate developmental milestones into their evaluation systems.

This will be a challenging task but, we believe, one that is well within our reach. We do not share the skepticism of others who lament the perceived inadequacy of currently available evaluation instruments.[21] On the contrary, the "tool box" contains many robust instruments.[22–29] The problem lies in the variable use of the instruments by faculty who do not share a common understanding of expected behaviors.[30] The milestones provide a set of consistent expectations that should reduce this variability.

As representatives of the internal medicine education community, we articulated the milestones to embody *our* vision of the development of a competent internist. We ask the ACGME only to hold us to this standard.

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Appendix 1 Milestones Task Force

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| APPENDIX 2.1 | **DEVELOPMENTAL MILESTONES FOR INTERNAL MEDICINE TRAINING—PATIENT CARE** |

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	General Evaluation Strategies
Clinical skills and reasoning ■ Manage patients using clinical skills of interviewing and physical examination ■ Demonstrate competence in the performance of procedures mandated by the ABIM ■ Appropriately use laboratory and imaging techniques	**Historical data gathering**		Standardized patient Direct observation
	1. Acquire accurate and relevant history from the patient in an efficiently customized, prioritized, and hypothesis driven fashion	6	
	2. Seek and obtain appropriate, verified, and prioritized data from secondary sources (eg, family, records, pharmacy)	9	
	3. Obtain relevant historical subtleties that inform and prioritize both differential diagnoses and diagnostic plans, including sensitive, complicated, and detailed information that may not often be volunteered by the patient	18	
	4. Role model gathering subtle and reliable information from the patient for junior members of the health care team	30	
	Performing a physical examination		Standardized patient Direct observation Simulation
	1. Perform an accurate physical examination that is appropriately targeted to the patient's complaints and medical conditions. Identify pertinent abnormalities using common maneuvers	6	
	2. Accurately track important changes in the physical examination over time in the outpatient and inpatient settings	9	
	3. Demonstrate and teach how to elicit important physical findings for junior members of the health care team	18	
	4. Routinely identify subtle or unusual physical findings that may influence clinical decision making, using advanced maneuvers where applicable	30	
	Clinical reasoning		Chart-stimulated recall Direct observation Clinical vignettes
	1. Synthesize all available data, including interview, physical examination, and preliminary laboratory data, to define each patient's central clinical problem	12	
	2. Develop prioritized differential diagnoses, evidence-based diagnostic and therapeutic plan for common inpatient and ambulatory conditions		
	3. Modify differential diagnosis and care plan based on clinical course and data as appropriate	24	
	4. Recognize disease presentations that deviate from common patterns and that require complex decision making	36	
	Invasive procedures		
	1. Appropriately perform invasive procedures and provide post-procedure management for common procedures	18	Simulation Direct observation

APPENDIX 2.1	**CONTINUED**

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	General Evaluation Strategies
Delivery of patient-centered clinical care ■ Manage patients with progressive responsibility ■ Manage patients across the spectrum of clinical diseases seen in the practice of general internal medicine ■ Manage patients in a variety of health care settings to include the inpatient ward, critical care units, the ambulatory setting, and the emergency setting ■ Manage undifferentiated acutely and severely ill patients ■ Manage patients in the prevention, counseling, detection, diagnosis, and treatment of gender-specific diseases ■ Manage patients as a consultant to other physicians	**Diagnostic tests**		Chart-stimulated recall Standardized tests Clinical vignettes
	1. Make appropriate clinical decisions based on the results of common diagnostic testing, including but not limited to routine blood chemistries, hematologic studies, coagulation tests, arterial blood gases, ECG, chest radiographs, pulmonary function tests, urinalysis and other body fluids	12	
	2. Make appropriate clinical decision based on the results of more advanced diagnostic tests	18	
	Patient management		Simulation Chart-stimulated recall Multisource feedback Direct observation Chart audit
	1. Recognize situations with a need for urgent or emergent medical care, including life-threatening conditions	6	
	2. Recognize when to seek additional guidance	6	
	3. Provide appropriate preventive care and teach patient regarding self-care	6	
	4. With supervision, manage patients with common clinical disorders seen in the practice of inpatient and ambulatory general internal medicine	12	
	5. With minimal supervision, manage patients with common and complex clinical disorders seen in the practice of inpatient and ambulatory general internal medicine	12	
	6. Initiate management and stabilize patients with emergent medical conditions	12	
	7. Manage patients with conditions that require intensive care	36	
	8. Independently manage patients with a broad spectrum of clinical disorders seen in the practice of general internal medicine	36	
	9. Manage complex or rare medical conditions	36	
	10. Customize care in the context of the patient's preferences and overall health	36	
	Consultative care		Simulation Chart-stimulated recall Multisource feedback Direct observation Chart audit
	1. Provide specific, responsive consultation to other services	24	
	2. Provide internal medicine consultation for patients with more complex clinical problems requiring detailed risk assessment	36	

Abbreviations: ABIM, American Board of Internal Medicine; ECG, electrocardiogram.

| APPENDIX 2.2 | **DEVELOPMENTAL MILESTONES FOR INTERNAL MEDICINE TRAINING—MEDICAL KNOWLEDGE** |

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	Assessment Methods/Tools
Core knowledge of general internal medicine and its subspecialties ■ Demonstrate a level of expertise in the knowledge of those areas appropriate for an internal medicine specialist ■ Demonstrate sufficient knowledge to treat medical conditions commonly managed by internists, provide basic preventive care, and recognize and provide initial management of emergency medical problems	**Knowledge of core content**		Direct observation Chart audit Chart-stimulated recall Standardized tests
	1. Understand the relevant pathophysiology and basic science for common medical conditions	6	
	2. Demonstrate sufficient knowledge to diagnose and treat common conditions that require hospitalization	12	
	3. Demonstrate sufficient knowledge to evaluate common ambulatory conditions	18	
	4. Demonstrate sufficient knowledge to diagnose and treat undifferentiated and emergent conditions	18	
	5. Demonstrate sufficient knowledge to provide preventive care	18	
	6. Demonstrate sufficient knowledge to identify and treat medical conditions that require intensive care	24	
	7. Demonstrate sufficient knowledge to evaluate complex or rare medical conditions and multiple coexistent conditions	36	
	8. Understand the relevant pathophysiology and basic science for uncommon or complex medical conditions	36	
	9. Demonstrate sufficient knowledge of sociobehavioral sciences including but not limited to health care economics, medical ethics, and medical education	36	
Common modalities used in the practice of internal medicine ■ Demonstrate sufficient knowledge to interpret basic clinical tests and images, use common pharmacotherapy, and appropriately use and perform September (Issue 1) and December (Issue 2), diagnostic and therapeutic procedures.	**Diagnostic tests**		Chart-stimulated recall Standardized tests Clinical vignettes
	1. Understand indications for and basic interpretation of common diagnostic testing, including but not limited to routine blood chemistries, hematologic studies, coagulation tests, arterial blood gases, ECG, chest radiographs, pulmonary function tests, urinalysis, and other body fluids	12	
	2. Understand indications for and has basic skills in interpreting more advanced diagnostic tests	18	
	3. Understand prior probability and test performance characteristics	18	

Abbreviation: ECG, electrocardiogram.

APPENDIX 2.3	**DEVELOPMENTAL MILESTONES FOR INTERNAL MEDICINE TRAINING—PRACTICE-BASED LEARNING AND IMPROVEMENT**		
ACGME Competency	**Developmental Milestones Informing ACGME Competencies**	**Approximate Time Frame Trainee Should Achieve Stage (months)**	**Assessment Methods/ Tools**
Learning and improving via audit of performance ■ Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement	**Improve the quality of care for a panel of patients**		Several elements of quality improvement project Standardized tests
	1. Appreciate the responsibility to assess and improve care collectively for a panel of patients	12	
	2. Perform or review audit of a panel of patients using standardized, disease-specific, and evidence-based criteria	24	
	3. Reflect on audit compared with local or national benchmarks and explore possible explanations for deficiencies, including doctor-related, system-related, and patient related factors	24	
	4. Identify areas in resident's own practice and local system that can be changed to improve affect of the processes and outcomes of care	36	
	5. Engage in a quality improvement intervention	36	

APPENDIX 2.3	**CONTINUED**

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	Assessment Methods/ Tools
Learning and improvement via answering clinical questions from patient scenarios ▪ Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems; ▪ Use information technology to optimize learning	**Ask answerable questions for emerging information needs**		Evidence-based medicine evaluation instruments ABIM point of care learning module EBM mini-CEX Chart-stimulated recall
	1. Identify learning needs (clinical questions) as they emerge in patient care activities	12	
	2. Classify and precisely articulate clinical questions	24	
	3. Develop a system to track, pursue, and reflect on clinical questions	24	
	Acquires the best evidence		Evidence-based medicine evaluation instruments ABIM point of care learning module EBM mini-CEX Chart-stimulated recall
	1. Access medical information resources to answer clinical questions and support decision making	12	
	2. Effectively and efficiently search NLM database for original clinical research articles	12	
	3. Effectively and efficiently search evidence-based summary medical information resources	24	
	4. Appraise the quality of medical information resources and select among them based on the characteristics of the clinical question	36	
	Appraises the evidence for validity and usefulness		Evidence-based medicine evaluation instruments ABIM point of care learning module EBM mini-CEX Chart-stimulated recall
	1. With assistance, appraise study design, conduct, and statistical analysis in clinical research papers	12	
	2. With assistance, appraise clinical guidelines	24	
	3. Independently appraise study design, conduct, and statistical analysis in clinical research papers	36	
	4. Independently, appraise clinical guideline recommendations for bias and cost-benefit considerations	36	
	Applies the evidence to decision-making for individual patients		Evidence-based medicine evaluation instruments ABIM point of care learning module EBM mini-CEX Chart-stimulated recall
	1. Determine if clinical evidence can be generalized to an individual patient	12	
	2. Customize clinical evidence for an individual patient	24	
	3. Communicate risks and benefits of alternatives to patients	36	
	4. Integrate clinical evidence, clinical context, and patient preferences into decision making	36	

| APPENDIX 2.3 | **CONTINUED** | | |

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	Assessment Methods/ Tools
Learning and improving via feedback and self-assessment ▪ Identify strengths, deficiencies, and limits in one's knowledge and expertise ▪ Set learning and improvement goals ▪ Identify and perform appropriate learning activities ▪ Incorporate formative evaluation feedback into daily practice ▪ Participate in the education of patients, families, students, residents, and other health professionals	**Improves via feedback**		Multisource feedback Self-evaluation forms with action plans
	1. Respond welcomingly and productively to feedback from all members of the health care team including faculty, peer residents, students, nurses, allied health workers, patients, and their advocates	12	
	2. Actively seek feedback from all members of the health care team	18	
	3. Calibrate self-assessment with feedback and other external data	24	
	4. Reflect on feedback in developing plans for improvement	24	
	Improves via self-assessment		Multisource feedback Reflective practice surveys
	1. Maintain awareness of the situation in the moment, and respond to meet situational needs	24	
	2. Reflect (in action) when surprised, applies new insights to future clinical scenarios, and reflects (on action) back on the process	36	
	Participates in the education of all members of the health care team		OSCE with standardized learners Direct observation Peer evaluations
	1. Actively participate in teaching conferences	12	
	2. Integrate teaching, feedback, and evaluation with supervision of interns' and students' patient care	24	
	3. Take a leadership role in the education of all members of the health care team.	36	

Abbreviations: ABIM, American Board of Internal Medicine; EBM mini-CEX, evidence-based medicine mini-clinical evaluation exercise; NLM, National Library of Medicine; OSCE, objective structured clinical examination.

APPENDIX 2.4	**DEVELOPMENTAL MILESTONES FOR INTERNAL MEDICINE TRAINING—INTERPERSONAL AND COMMUNICATION SKILLS**

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	Assessment Methods/ Tools
Patients and family Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds	**Communicate effectively**		Multisource feedback Patient surveys Direct observation Mentored self-reflection
	1. Provide timely and comprehensive verbal and written communication to patients/advocates	12	
	2. Effectively use verbal and nonverbal skills to create rapport with patients/families	12	
	3. Use communication skills to build a therapeutic relationship		
	4. Engage patients/advocates in shared decision making for uncomplicated diagnostic and therapeutic scenarios	24	
	5. Use patient-centered education strategies	24	
	6. Engage patients/advocates in shared decision making for difficult, ambiguous, or controversial scenarios	36	
	7. Appropriately counsel patients about the risks and benefits of tests and procedures, highlighting cost awareness and resource allocation	36	
	8. Role model effective communication skills in challenging situations	36	
	Intercultural sensitivity		Multisource feedback Direct observation Mentored self-reflection
	1. Effectively use an interpreter to engage patients in the clinical setting, including patient education	6	
	2. Demonstrate sensitivity to differences in patients including but not limited to race, culture, gender, sexual orientation, socioeconomic status, literacy, and religious beliefs	12	
	3. Actively seek to understand patient differences and views and reflects this in respectful communication and shared decision-making with the patient and the healthcare team	30	

APPENDIX 2.4	**CONTINUED**

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	Assessment Methods/ Tools
Physicians and other health care professionals ■ Communicate effectively with physicians, other health professionals, and health-related agencies ■ Work effectively as a member or leader of a health care team or other professional group ■ Act in a consultative role to other physicians and health professionals	**Transitions of care**		Multisource feedback Direct observation Sign-out form ratings Patient surveys
	1. Effectively communicate with other caregivers in order to maintain appropriate continuity during transitions of care	12	
	2. Role model and teach effective communication with next caregivers during transitions of care	24	
	Interprofessional team		Multisource feedback
	1. Deliver appropriate, succinct, hypothesis-driven oral presentations	6	
	2. Effectively communicate plan of care to all members of the health care team	12	
	3. Engage in collaborative communication with all members of the health care team	30	
	Consultation		Multisource feedback Chart audit
	1. Request consultative services in an effective manner	6	
	2. Clearly communicate the role of consultant to the patient, in support of the primary care relationship	12	
	3. Communicate consultative recommendations to the referring team in an effective manner	36	
Medical records ■ Maintain comprehensive, timely, and legible medical records	**Health records**		Chart audit
	1. Provide legible, accurate, complete, and timely written communication that is congruent with medical standards	6	
	2. Ensure succinct, relevant, and patient-specific written communication	24	

| APPENDIX 2.5 | DEVELOPMENTAL MILESTONES FOR INTERNAL MEDICINE TRAINING—PROFESSIONALISM | | |

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	Assessment Methods/ Tools
Physicianship ■ Demonstrate compassion, integrity, and respect for others ■ Responsiveness to patient needs that supersedes self-interest ■ Accountability to patients, society, and the profession	**Adhere to basic ethical principles**		Multisource feedback
	1. Document and report clinical information truthfully	1	
	2. Follow formal policies	1	
	3. Accept personal errors and honestly acknowledge them	6	
	4. Uphold ethical expectations of research and scholarly activity	36	
	Demonstrate compassion and respect to patients		Multisource feedback
	1. Demonstrate empathy and compassion to all patients	3	
	2. Demonstrate a commitment to relieve pain and suffering	3	
	3. Provide support (physical, psychological, social, and spiritual) for dying patients and their families	24	
	4. Provide leadership for a team that respects patient dignity and autonomy	24	
	Provide timely, constructive feedback to colleagues		Multisource feedback Mentored self-reflection Direct observation
	1. Communicate constructive feedback to other members of the health care team	12	
	2. Recognize, respond to, and report impairment in colleagues or substandard care via peer review process	18	
	Maintain accessibility		Multisource feedback
	1. Respond promptly and appropriately to clinical responsibilities including but not limited to calls and pages	1	
	2. Carry out timely interactions with colleagues, patients, and their designated caregivers	6	
	Recognize conflicts of interest		Multisource feedback Mentored self-reflection Clinical vignettes
	1. Recognize and manage obvious conflicts of interest, such as caring for family members and professional associates as patients	6	
	2. Maintain ethical relationships with industry	30	
	3. Recognize and manage subtler conflicts of interest	30	
	Demonstrate personal accountability		Multisource feedback Direct observation
	1. Dress and behave appropriately	1	
	2. Maintain appropriate professional relationships with patients, families, and staff	1	
	3. Ensure prompt completion of clinical, administrative, and curricular tasks	6	
	4. Recognize and address personal, psychological, and physical limitations that may affect professional performance	12	
	5. Recognize the scope of his/her abilities and ask for supervision and assistance appropriately	12	
	6. Serve as a professional role model for more junior colleagues (eg, medical students, interns)	30	
	7. Recognize the need to assist colleagues in the provision of duties	30	
	Practice individual patient advocacy		Multisource feedback Direct observation
	1. Recognize when it is necessary to advocate for individual patient needs	6	
	2. Effectively advocate for individual patient needs	30	
	Comply with public health policies		Multisource feedback
	1. Recognize and take responsibility for situations where public health supersedes individual health (eg, reportable infectious diseases)	24	

APPENDIX 2.5	**CONTINUED**		

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	Assessment Methods/ Tools
Patient-centeredness ■ Respect for patient privacy and autonomy ■ Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation	**Respect the dignity, culture, beliefs, values, and opinions of the patient**		Multisource feedback Direct observation
	1. Treat patients with dignity, civility and respect, regardless of race, culture, gender, ethnicity, age, or socioeconomic status	1	
	2. Recognize and manage conflict when patient values differ from their own	30	
	Confidentiality		Multisource feedback Chart audits
	1. Maintain patient confidentiality	1	
	2. Educate and hold others accountable for patient confidentiality	18	
	Recognize and address disparities in health care		Multisource feedback Direct observation Mentored self-reflection
	1. Recognize that disparities exist in health care among populations and that they may impact care of the patient	12	
	2. Embrace physicians' role in assisting the public and policy makers in understanding and addressing causes of disparity in disease and suffering	36	
	3. Advocates for appropriate allocation of limited health care resources.	36	

APPENDIX 2.6	**DEVELOPMENTAL MILESTONES FOR INTERNAL MEDICINE TRAINING—SYSTEMS-BASED PRACTICE**

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	Assessment Methods/Tools
Work effectively with other care providers and settings ■ Work effectively in various health care delivery settings and systems relevant to their clinical practice ■ Coordinate patient care within the health care system relevant to their clinical specialty ■ Work in interprofessional teams to enhance patient safety and improve patient care quality ■ Work in teams and effectively transmit necessary clinical information to ensure safe and proper care of patients, including the transition of care between settings	**Works effectively within multiple health delivery systems**		Multisource feedback Chart-stimulated recall Direct observation
	1. Understand unique roles and services provided by local health care delivery systems.	12	
	2. Manage and coordinate care and care transitions across multiple delivery systems, including ambulatory, subacute, acute, rehabilitation, and skilled nursing.	24	
	3. Negotiate patient-centered care among multiple care providers.	36	
	Works effectively within an interprofessional team		Multisource feedback Chart-stimulated recall Direct observation
	1. Appreciate roles of a variety of health care providers, including but not limited to consultants, therapists, nurses, home care workers, pharmacists, and social workers.	6	
	2. Work effectively as a member within the interprofessional team to ensure safe patient care.	6	
	3. Consider alternative solutions provided by other teammates	12	
	4. Demonstrate how to manage the team by using the skills and coordinating the activities of interprofessional team members.	36	
Improving health care delivery ■ Advocate for quality patient care and optimal patient care systems ■ Participate in identifying system errors and implementing potential systems solutions ■ Recognize and function effectively in high-quality care system	**Recognizes system error and advocates for system improvement**		Multisource feedback Quality improvement project
	1. Recognize health system forces that increase the risk for error including barriers to optimal patient care	12	
	2. Identify, reflect on, and learn from critical incidents such as near misses and preventable medical errors	12	
	3. Dialogue with care team members to identify risk for and prevention of medical error	24	
	4. Understand mechanisms for analysis and correction of systems errors	24	
	5. Demonstrate ability to understand and engage in a system-level quality improvement intervention.	36	
	6. Partner with other health care professionals to identify, propose improvement opportunities within the system.	36	

APPENDIX 2.6	**CONTINUED**

ACGME Competency	Developmental Milestones Informing ACGME Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	Assessment Methods/Tools
Cost-effective care for patients and populations ■ Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate	**Identifies forces that impact the cost of health care and advocates for cost-effective care**		Standardized examinations Direct observation Chart-stimulated recall
	1. Reflect awareness of common socioeconomic barriers that impact patient care.	12	
	2. Understand how cost-benefit analysis is applied to patient care (ie, via principles of screening tests and the development of clinical guidelines)	12	
	3. Identify the role of various health care stakeholders including providers, suppliers, financiers, purchasers, and consumers and their varied impact on the cost of and access to health care.	24	
	4. Understand coding and reimbursement principles.	24	
	Practices cost-effective care		Chart-stimulated recall
	1. Identify costs for common diagnostic or therapeutic tests.	6	
	2. Minimize unnecessary care including tests, procedures, therapies, and ambulatory or hospital encounters	6	
	3. Demonstrate the incorporation of cost-awareness principles into standard clinical judgments and decision making	18	
	4. Demonstrate the incorporation of cost-awareness principles into complex clinical scenarios	36	