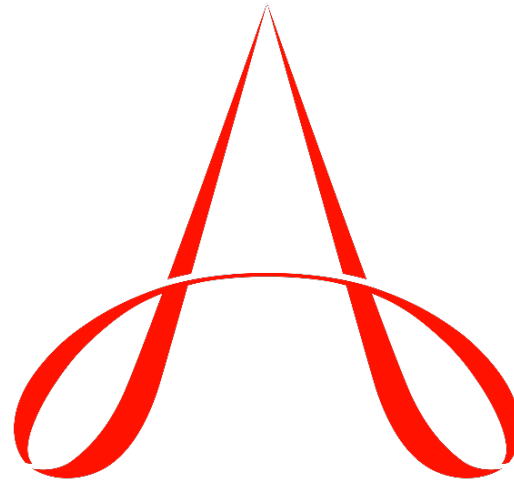# Occupational and Environmental Medicine Milestones

The Accreditation Council for Graduate Medical Education

ACGME

Implementation Date: July 1, 2021
Second Revision: December 2020
First Revision: August 2013

Occupational and Environmental Medicine Milestones

The Milestones are designed only for use in evaluation of fellows in the context of their participation in ACGME-accredited residency or 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 specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.

Occupational and Environmental Medicine Milestones Work Group

Beth Baker, MD, MPH

Laura Edgar, EdD, CAE

Bart Iddins, MD, DVM

Jeffrey Levin, MD, MSPH, DrPH

Jennifer Lultschik, MD

David Rainey, MD, MPH, MEd

Rachel Thies, MD, MPH

Rasika Thondukolam, MD, MPH

Ashiq Zaman, MD, MHA

The ACGME would like to thank the following organizations for their continued support in the development of the Milestones:

American Board of Preventive Medicine

Review Committee for Preventive 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 resident 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. Furthermore, Milestones 2.0 include revisions and changes that preclude using Milestones as a sole assessment in high-stakes decisions (i.e., determination of eligibility for certification or credentialing). 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.

Additional resources are available in the Milestones section of the ACGME website. Follow the links under "What We Do" at www.acgme.org.

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

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

Comments:

Not Yet Completed Level 1 ☐

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: History and Physical Examination

Level 1	Level 2	Level 3	Level 4	Level 5
Obtains an accurate history	Obtains and reports an accurate and organized history, including occupational and environmental history	Consistently obtains and reports a comprehensive and accurate history, including occupational and environmental factors, and seeks appropriate data from secondary sources	Consistently obtains and concisely reports a focused history, including occupational and environmental factors, with pertinent details	Consistently serves as a role model and educator in obtaining and presenting a focused history, including occupational and environmental factors, with pertinent details
Performs a basic physical exam accurately	Performs an accurate and organized physical exam, and identifies appropriate physical findings for the chief complaint	Consistently performs an accurate and thorough physical examination, and reports relevant findings in support of likely clinical diagnosis	Consistently identifies subtle physical findings; is proficient with advanced maneuvers	Consistently serves as a role model and educator in the performance of an advanced physical exam

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Comments:

Not Yet Completed Level 1   ☐
Not Yet Assessable   ☐

Patient Care 2: Clinical Assessment and Management				
Level 1	Level 2	Level 3	Level 4	Level 5
Integrates patient-specific information to generate a working diagnosis	Provides a prioritized differential diagnosis using supporting rationale and/or exposure assessment	Consistently provides an accurate diagnosis for common occupational and environmental conditions; demonstrates the ability to modify a diagnosis based on a patient's clinical course and additional data	Consistently provides an accurate diagnosis for patients with complex occupational and environmental conditions, recognizing sources of diagnostic error	Consistently serves as a role model and educator for deriving accurate diagnoses, recognizing sources of diagnostic error, and integrating relevant literature
Determines indicated tests and initiates a management plan	Orders indicated tests, and initiates a management plan, suggesting work restrictions	Interprets indicated tests and develops a management plan; determines work restrictions	Consistently modifies the management plan based on the patient's clinical course and considers applicable regulatory guidelines	Implements testing and management plans, integrating patient preferences, evidence-based guidelines, and cost

Comments:

Not Yet Completed Level 1 ☐

Not Yet Assessable ☐

Patient Care 3: Worker Health, Well-Being, and Performance Optimization				
Level 1	Level 2	Level 3	Level 4	Level 5
Discusses how individual and organizational factors in the workplace can influence health, well-being, and performance	Identifies individual and organizational factors in the workplace which influence the health, well-being, and performance of workers	Describes the use and limitations of health risk assessment and screening for well populations, and the applications of screening, assessment, and early intervention for targeted high-risk groups	Monitors and surveys at least one workforce, and interprets monitoring and surveillance data to enhance the health, well-being, and performance of workers (simulation or actual)	Designs, implements, and evaluates worksite health promotion programs independently, incorporating authoritative guidelines and evidence
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1   ☐
Not Yet Assessable   ☐

Patient Care 4: Fitness for Work (Workers' Compensation, Employment and Certification Exams, Fitness for Duty, Return to Work)				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies types of work restrictions	Suggests work restrictions or return to work plan in the context of a management plan for patients	Provides work activity prescriptions in the context of a management plan for patients, interacting with care teams	Consistently provides work activity prescriptions in complex patient management situations, interacting with care teams	Serves as a role model for providing work activity prescriptions in complex patient management situations
Identifies elements of an examination to determine fitness for different types of work	Conducts examinations determining fitness for work in a variety of industries	Performs fitness for duty/work examinations with knowledge of regulations and guidelines	Consistently performs complicated fitness for duty/work examinations with knowledge of regulations and guidelines	Serves as a role model for performing complicated fitness for duty/work examinations
	Identifies the elements of work fitness and disability determination	Performs medical evaluations using the principles of work fitness and disability determination	Participates in a disability determination or impairment assessment	Performs a disability determination or impairment assessment and causation analysis
☐　　☐	☐　　☐	☐　　☐	☐　　☐	☐　　☐

Comments:	
	Not Yet Completed Level 1　☐
	Not Yet Assessable　☐

Patient Care 5: Toxicology				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of basic pathophysiology, pharmacology, and metabolism of drugs and toxicants	Evaluates patients using knowledge of basic toxicological principles, including routes of exposure and metabolic pathways	Evaluates and recommends care for patients whose health may be affected by occupational or environmental toxic exposures, including interpretation of laboratory and/or environmental monitoring test results	Assesses clinical, worksite, and environmental data, recommends treatment of acute or chronic occupational or environmental toxic exposures, and work restrictions or exposure control measures	Performs complex causation analysis of patients with symptoms or conditions and/or conducts screening and surveillance for populations that may be related to occupational or environmental toxic exposures, and effectively communicates risk

Comments:

Not Yet Completed Level 1 ☐

Not Yet Assessable ☐

Patient Care 6: Surveillance				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates working knowledge of basic principles underlying screening and surveillance	Performs a medical surveillance examination following prescribed regulations and guidelines; communicates results as indicated	Independently identifies which tests and actions are recommended or mandated for a specific worker	Prepares a valid aggregate analysis and summary of actual medical surveillance examinations for a specific focus, such as lead-exposed workers, lipid screening, hearing conservation (actual or simulated)	Develops a comprehensive program plan for a workplace, including test selections, follow-up plans, and comparison of cost effectiveness of alternative strategies

Comments:

Not Yet Completed Level 1 ☐

Not Yet Assessable ☐

Medical Knowledge 1: Hazard Recognition and Management				
Level 1	Level 2	Level 3	Level 4	Level 5
Discusses how occupational and environmental risk factors contribute to injury and illness	Demonstrates knowledge of core principles of industrial hygiene, ergonomics, occupational safety, risk assessment and communication, and hazard controls	Participates in activities or consultations that include application of the principles of industrial hygiene, ergonomics, occupational safety, risk assessment, and hazard control to patients, populations, and/or employer/employee organizations	Applies core principles of risk assessment and hierarchy of controls to reduce risks from industrial hygiene, ergonomic, and safety hazards to patients, populations, and/or employee/employer organizations, and communicates risks	Interprets, analyzes, and applies the principles of industrial hygiene, ergonomics, occupational safety, risk assessment, hazard control in complex occupational or community environments and communicates risks effectively

Comments:

Not Yet Completed Level 1

Not Yet Assessable

Medical Knowledge 2: Biostatistics and Epidemiology				
Level 1	Level 2	Level 3	Level 4	Level 5
Discusses common statistical concepts (e.g., measures of central tendency, p-values, confidence intervals)	Demonstrates knowledge of biostatistical and epidemiological principles	Interprets scientific literature using biostatistical and epidemiological principles	Applies biostatistical and epidemiological principles to research or clinical practice	Role models the application of biostatistical and epidemiological principles to research and clinical practice
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1 ☐
Not Yet Assessable ☐

Medical Knowledge 3: Regulatory				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies relevant occupational and environmental regulatory agencies	Lists the regulatory requirements for a specific industry	Applies knowledge of pertinent regulatory standards, to an individual worker	Applies knowledge of regulatory requirements to develop or modify a workplace policy (actual or simulated)	Participates in developing or modifying a regulatory requirement or guideline
Identifies occupational or environmental regulations/guidelines regarding exposure in a specific industry or geographic area	Identifies the recommended/mandated exposure limits for a specific substance or hazard	Reviews exposure monitoring results for an individual and prepares written reports for employers, workers, or government	Interprets and applies exposure monitoring results to work setting or clinical cases	Prepares a written exposure monitoring and reporting system plan for a specific workplace or other defined entity
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1   ☐
Not Yet Assessable   ☐

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)	Role models or mentors others in the disclosure of patient safety events
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes local quality improvement initiatives (e.g., community vaccination rate, infection rate, smoking cessation)	Participates in local quality improvement initiatives	Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project	Creates, implements, and assesses quality improvement initiatives at the institutional or community level
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1   ☐

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 using the roles of the interprofessional teams	Coordinates care of patients in complex clinical situations effectively using the roles of their 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	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 their local population	Uses local resources effectively to meet the needs of a patient population and community	Participates in 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 Completed Level 1   ☐

Systems-Based Practice 4: 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	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 basic health payment systems, (e.g., employer, government, private, public, uninsured care) and practice models	Delivers care with consideration of each patient's payment model (e.g., insurance type)	Engages with patients in shared decision making, informed by each patient's payment models	Advocates for patient care needs (e.g., community resources, patient assistance resources) with consideration of the limitations of each patient's payment model	Participates in health policy advocacy activities
Identifies basic knowledge domains for effective transition to practice (e.g., information technology, legal, billing and coding, financial, personnel)	Describes core administrative knowledge needed for transition to practice (e.g., contract negotiations, malpractice insurance, government regulation, compliance)	Demonstrates use of information technology required for medical practice (e.g., electronic health record, documentation required for billing and coding)	Analyzes practice patterns and professional requirements in preparation for practice	Educates others to prepare them for transition to practice

☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1　☐

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 considers patient preferences and values in order to guide evidence-based care	Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients	Critically appraises and applies evidence even in the face of uncertainty and conflicting evidence to guide care, tailored to the individual patient	Coaches others to critically appraise and apply evidence for complex patients; and/or participates in the development of guidelines
▢	▢	▢	▢	▢	▢	▢	▢	▢

Comments:

Not Yet Completed Level 1   ▢

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment 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 data (feedback and other input) in order to inform goals	Seeks performance data episodically, with adaptability, and humility	Intentionally seeks performance data consistently with adaptability, and humility	Role models consistently seeking performance date with adaptability and humility
Identifies the factors which contribute to gap(s) between expectations and actual performance	Analyzes and reflects on the factors which contribute to gap(s) between expectations and actual performance	Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance	Challenges assumptions and considers alternatives in narrowing the gap(s) between expectations and actual performance	Coaches others on reflective practice
Actively seeks opportunities to improve	Designs and implements a learning plan, with prompting	Independently creates and implements a learning plan	Uses performance data to measure the effectiveness of the learning plan and when necessary, improves it	Facilitates the design and implementing learning plans for others

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Comments:

Not Yet Completed Level 1 ☐

Professionalism 1: Professional Behavior and Ethical Principles

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies and describes potential triggers for professionalism lapses	Demonstrates insight into professional behavior in routine situations	Demonstrates professional behavior in complex or stressful situations	Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in self and others	Coaches others when their behavior fails to meet professional expectations
Describes when and how to appropriately report professionalism lapses, including strategies for addressing common barriers	Takes responsibility for own professionalism lapses	Recognizes need to seek help in managing and resolving complex ethical situations	Recognizes and utilizes appropriate resources for managing and resolving ethical dilemmas as needed (e.g., ethics consultations, literature review, risk management/legal consultation)	Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution
Demonstrates knowledge of the ethical principles underlying professional practice	Analyzes straightforward situations using ethical principles	Analyzes complex situations using ethical principles		

Comments:

Not Yet Completed Level 1

Professionalism 2: Accountability/Conscientiousness				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Takes responsibility for failure to complete tasks and responsibilities, identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations	Recognizes situations that may impact others' ability to complete tasks and responsibilities in a timely manner	Proactively develops and implements strategies to ensure that the needs of patients, teams, and systems are met
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1   ☐

Professionalism 3: Self-Awareness and Help-Seeking				
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes the importance of addressing personal and professional well-being	Lists available resources for personal and professional well-being Describes institutional resources that are meant to promote well-being	With assistance, proposes a plan to promote personal and professional well-being Recognizes which institutional factors affect well-being	Implements a plan to promote personal and professional well-being Describes institutional factors that positively and/or negatively affect well-being	Creates institutional-level interventions that promote colleagues' well-being Describes institutional programs designed to examine systemic contributors to burnout

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Comments:

Not Yet Completed Level 1   ☐

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

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication				
Level 1	Level 2	Level 3	Level 4	Level 5
Uses language and nonverbal behavior to demonstrate respect and establish rapport	Establishes a therapeutic relationship in straightforward encounters using active listening and clear language	Establishes a therapeutic relationship in challenging patient encounters	Easily establishes therapeutic relationships, with attention to patient/family concerns and context, regardless of complexity	Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships
Identifies common barriers to effective communication (e.g., language, disability)	Identifies complex barriers to effective communication (e.g., health literacy, cultural)	When prompted, reflects on personal biases while attempting to minimize communication barriers	Independently recognizes personal biases while attempting to proactively minimize communication barriers	Role models self-awareness while identifying a contextual approach to minimize communication barriers
Identifies the need to adjust communication strategies based on assessment of patient/family expectations and understanding of their health status and treatment options	Organizes and initiates communication with patient/family by introducing stakeholders, setting the agenda, clarifying expectations and verifying understanding of the clinical situation	With guidance, sensitively and compassionately delivers medical information, elicits patient/family values, goals and preferences, and acknowledges uncertainty and conflict	Independently, uses shared decision making to align patient/family values, goals, and preferences with treatment options to make a personalized care plan	Role models shared decision making in patient/family communication including those with a high degree of uncertainty/conflict
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Comments:

Not Yet Completed Level 1　　☐

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 team to optimize patient care	Role models flexible communication strategies that value input from all 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 team	Communicates information effectively with all team members	Uses active listening to adapt communication style to fit team needs		
	Solicits feedback on performance as a member of the team	Communicates concerns and provides feedback to peers and learners	Facilitates regular team-based feedback in complex situations	Communicates feedback and constructive criticism to superiors

Comments:

Not Yet Completed Level 1

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	
Safeguards patient personal health information	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 policies and procedures around communication
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, or field)

Comments:

Not Yet Completed Level 1