

Emergency Medicine Milestones

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The Milestones are designed only for use in evaluation of resident physicians in the context of their participation in Accreditation Council for Graduate Medical Education–accredited residency or fellowship programs. The Milestones provide a framework for the assessment of the development of the resident physician in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the 6 domains of physician competency, nor are they designed to be relevant in any other context.

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EMERGENCY STABILIZATION (PC1) ^a				
TABLE 1	Level 1	Level 2	Level 3	Level 4
	Recognizes abnormal vital signs	Recognizes when a patient is unstable, requiring immediate intervention Performs a primary assessment on a critically ill or injured patient Discerns relevant data to formulate a diagnostic impression and plan	Manages and prioritizes critically ill or injured patients Prioritizes critical initial stabilization actions in the resuscitation of a critically ill or injured patient Reassesses after implementing a stabilizing intervention Evaluates the validity of a DNR order	Recognizes in a timely fashion when further clinical intervention is futile Integrates hospital support services into a management strategy for a problematic stabilization situation
				Develops policies and protocols for the management and/or transfer of critically ill or injured patients

^a Prioritizes critical initial stabilization action and mobilizes hospital support services in the resuscitation of a critically ill or injured patient, and reassesses after stabilizing intervention.

PERFORMANCE OF FOCUSED HISTORY AND PHYSICAL EXAM (PC2) ^a				
TABLE 2	Level 1	Level 2	Level 3	Level 4
	Performs and communicates a reliable, comprehensive history and physical exam	Performs and communicates a focused history and physical exam that effectively addresses the chief complaint and urgent patient issues	Prioritizes essential components of a history given a limited or dynamic circumstance Prioritizes essential components of a physical examination given a limited or dynamic circumstance	Synthesizes essential data necessary for the correct management of patients using all potential sources of data
				Identifies obscure, occult, or rare patient conditions based solely on historical and physical exam findings

^a Abstracts current findings in a patient with multiple chronic medical problems and, when appropriate, compares with a prior medical record and identifies significant differences between the current presentation and past presentations.

DIAGNOSTIC STUDIES (PC3) ^a				
TABLE 3	Level 1	Level 2	Level 3	Level 4
	Determines the necessity of diagnostic studies	Orders appropriate diagnostic studies Performs appropriate bedside diagnostic studies and procedures	Prioritizes essential testing Interprets results of a diagnostic study, recognizing limitations and risks, seeking interpretive assistance when appropriate Reviews risks, benefits, contraindications, and alternatives to a diagnostic study or procedure	Uses diagnostic testing based on the pretest probability of disease and the likelihood of test results altering management Practices cost-effective ordering of diagnostic studies Understands the implications of false positives and negatives for post-test probability
				Discriminates between subtle and/or conflicting diagnostic results in the context of the patient presentation

^a Applies the results of diagnostic testing based on the probability of disease and the likelihood of test results altering management.

TABLE 4 DIAGNOSIS (PC4) ^a				
Level 1	Level 2	Level 3	Level 4	Level 5
Constructs a list of potential diagnoses based on chief complaint and initial assessment	Constructs a list of potential diagnoses based on the greatest likelihood of occurrence Constructs a list of potential diagnoses with the greatest potential for morbidity or mortality	Uses all available medical information to develop a list of ranked differential diagnoses, including those with the greatest potential for morbidity or mortality Correctly identifies “sick versus not sick” patients Revises a differential diagnosis in response to changes in a patient’s course over time	Synthesizes all of the available data and narrows and prioritizes the list of weighted differential diagnoses to determine appropriate management	Uses pattern recognition to identify discriminating features between similar patients and avoids premature closure

^a Based on all of the available data, narrows and prioritizes the list of weighted differential diagnoses to determine appropriate management.

TABLE 5 PHARMACOTHERAPY (PC5) ^a				
Level 1	Level 2	Level 3	Level 4	Level 5
Knows the different classifications of pharmacologic agents and their mechanism of action Consistently asks patients for drug allergies	Applies medical knowledge for selection of the appropriate agent for therapeutic intervention Considers potential adverse effects of pharmacotherapy	Considers array of drug therapy for treatment Selects appropriate agent based on mechanism of action and intended effect, and anticipates potential adverse side effects Considers and recognizes potential drug-drug interactions	Selects the appropriate agent based on mechanism of action, intended effect, possible adverse effects, patient preferences, allergies, potential drug-food and drug-drug interactions, financial considerations, institutional policies, and clinical guidelines, including patient’s age, weight, and other modifying factors	Participates in developing institutional policies on pharmacy and therapeutics

^a Selects and prescribes appropriate pharmaceutical agents based on relevant considerations, such as mechanism of action, intended effect, financial considerations, possible adverse effects, patient preferences, allergies, potential drug-food and drug-drug interactions, institutional policies, and clinical guidelines; and effectively combines agents and monitors, and intervenes in the advent of adverse effects in the ED.

TABLE 6 OBSERVATION AND REASSESSMENT (PC6) ^a				
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes the need for patient reevaluation	Monitors that necessary therapeutic interventions are performed during a patient’s ED stay	Identifies which patients will require observation in the ED Evaluates effectiveness of therapies and treatments provided during observation Monitors a patient’s clinical status at timely intervals during his or her stay in the ED	Considers additional diagnoses and therapies for a patient who is under observation and changes treatment plan accordingly Identifies and complies with federal and other regulatory requirements, including billing, which must be met for a patient who is under observation	Develops protocols to avoid potential complications of interventions and therapies

^a Reevaluates patients undergoing ED observation (and monitoring), and, using appropriate data and resources, determines the differential diagnosis, treatment plan, and disposition.

TABLE 7 DISPOSITION (PC7) ^a					
Level 1	Level 2	Level 3	Level 4	Level 5	
Describes basic resources available for care of the emergency department patient	Formulates a specific follow-up plan for common ED complaints with appropriate resource use	Formulates and provides patient education regarding diagnosis, treatment plan, medication review, and PCP/consultant appointments for complicated patients Involves appropriate resources (eg, PCP, consultants, social work, PT/OT, financial aid, care coordinators) in a timely manner Makes correct decisions regarding admission or discharge of patients Correctly assigns admitted patients to an appropriate level of care (ICU/Telemetry/Floor/Observation Unit)	Formulates sufficient admission plans or discharge instructions, including future diagnostic/therapeutic interventions for ED patients Engages patient or surrogate to effectively implement a discharge plan	Works within the institution to develop hospital systems that enhance safe patient disposition and maximize resource use	

^a Establishes and implements a comprehensive disposition plan that uses appropriate consultation resources, patient education regarding diagnosis, treatment plan, medications, and time- and location-specific disposition instructions.

TABLE 8 MULTITASKING (TASK SWITCHING) (PC8) ^a					
Level 1	Level 2	Level 3	Level 4	Level 5	
Manages a single patient amidst distractions	Task switches between different patients	Employs task switching in an efficient and timely manner in order to manage multiple patients	Employs task switching in an efficient and timely manner in order to manage the ED	Employs task switching in an efficient and timely manner in order to manage the ED under high-volume or surge situations	

^a Employs task switching in an efficient and timely manner in order to manage the ED.

TABLE 9 GENERAL APPROACH TO PROCEDURES (PC9) ^a					
Level 1	Level 2	Level 3	Level 4	Level 5	
Identifies pertinent anatomy and physiology for a specific procedure Uses appropriate Universal Precautions	Performs patient assessment, obtains informed consent, and ensures monitoring equipment is in place in accordance with patient safety standards Knows indications, contraindications, anatomic landmarks, equipment, anesthetic and procedural technique, and potential complications for common ED procedures Performs the indicated common procedure on a patient with moderate urgency who has identifiable landmarks and a low-moderate risk for complications Performs postprocedural assessment and identifies any potential complications	Determines a backup strategy if initial attempts to perform a procedure are unsuccessful Correctly interprets the results of a diagnostic procedure	Performs indicated procedures on any patients with challenging features (eg, poorly identifiable landmarks, at extremes of age, or with comorbid conditions) Performs the indicated procedure, takes steps to avoid potential complications, and recognizes the outcome and/or complications resulting from the procedure	Teaches procedural competency and corrects mistakes	

^a Performs the indicated procedure on all appropriate patients (including those who are uncooperative, at the extremes of age, or hemodynamically unstable, as well as those who have multiple comorbidities, poorly defined anatomy, high risk for pain or procedural complications, or sedation requirements), takes steps to avoid potential complications, and recognizes the outcome and/or complications resulting from the procedure.

TABLE 10 AIRWAY MANAGEMENT (PC10)^a

Level 1	Level 2	Level 3	Level 4	Level 5
Describes upper airway anatomy Performs basic airway maneuvers or adjuncts (jaw thrust/chin lift/oral airway/nasopharyngeal airway) and ventilates/oxygenates patient using BVM	Describes elements of airway assessment and indications impacting the airway management Describes the pharmacology of agents used for rapid-sequence intubation, including specific indications and contraindications Performs rapid-sequence intubation in patients without adjuncts Confirms proper endotracheal tube placement using multiple modalities	Uses airway algorithms in decision making for complicated patients employing airway adjuncts as indicated Performs rapid-sequence intubation in patients using airway adjuncts Implements postintubation management Employs appropriate methods of mechanical ventilation based on specific patient physiology	Performs airway management in any circumstance, taking steps to avoid potential complications, and recognizes the outcome and/or complications resulting from the procedure Performs a minimum of 35 intubations Demonstrates the ability to perform a cricothyrotomy Uses advanced airway modalities in complicated patients	Teaches airway management skills to health care providers

^a Performs airway management on all appropriate patients (including those who are uncooperative, at the extremes of age, or hemodynamically unstable, as well as those who have multiple comorbidities, poorly defined anatomy, high risk for pain or procedural complications, and sedation requirements), takes steps to avoid potential complications, and recognizes the outcome and/or complications resulting from the procedure.

TABLE 11 ANESTHESIA AND ACUTE PAIN MANAGEMENT (PC11)^a

Level 1	Level 2	Level 3	Level 4	Level 5
Discusses with the patient indications, contraindications, and possible complications of local anesthesia Performs local anesthesia using appropriate doses of local anesthetic and appropriate technique to provide skin to subdermal anesthesia for procedures	Knows the indications, contraindications, and possible complications, and appropriate doses of analgesic/sedative medications Knows the anatomic landmarks, indications, contraindications, potential complications, and appropriate doses of local anesthetics used for regional anesthesia	Knows the indications, contraindications, potential complications, and appropriate doses of medications used for procedural sedation Performs patient assessment, discusses with the patient the most appropriate analgesic/sedative medication, and administers it in the most appropriate dose and route Performs presedation assessment, obtains informed consent, and orders appropriate choice and dose of medications for procedural sedation Obtains informed consent and correctly performs regional anesthesia Ensures appropriate monitoring of patients during procedural sedation	Performs procedural sedation, providing effective sedation with the least risk of complications and minimal recovery time through selective dosing, route, and choice of medications	Develops pain management protocols/care plans

^a Provides safe acute pain management, anesthesia, and procedural sedation to patients of all ages regardless of the clinical situation.

TABLE 12 OTHER DIAGNOSTIC AND THERAPEUTIC PROCEDURES: GOAL-DIRECTED FOCUSED ULTRASOUND (DIAGNOSTIC/PROCEDURAL) (PC12)^a

Level 1	Level 2	Level 3	Level 4	Level 5
Describes the indications for emergency ultrasound	Explains how to optimize ultrasound images and identifies the proper probe for each of the focused ultrasound applications Performs an eFAST	Performs goal-directed focused ultrasound exams Correctly interprets acquired images	Performs a minimum of 150 focused ultrasound examinations	Expands ultrasonography skills to include: advanced echo, TEE, bowel, adnexal, and testicular pathology, and transcranial Doppler

^a Uses goal-directed focused ultrasound for the bedside diagnostic evaluation of emergency medical conditions and diagnoses, resuscitation of the acutely ill or injured patient, and procedural guidance.

TABLE 13 OTHER DIAGNOSTIC AND THERAPEUTIC PROCEDURES: WOUND MANAGEMENT (PC13)^a

Level 1	Level 2	Level 3	Level 4	Level 5
Prepares a simple wound for suturing (identify appropriate suture material, anesthetize wound, and irrigate) Demonstrates sterile technique Places a simple interrupted suture	Uses medical terminology to clearly describe/classify a wound (eg, stellate, abrasion, avulsion, laceration, deep versus superficial) Classifies burns with respect to depth and body surface area Compares and contrasts modes of wound management (adhesives, steri-strips, hair apposition, staples) Identifies wounds that require antibiotics or tetanus prophylaxis Educates patients on appropriate outpatient management of their wound	Performs complex wound repairs (deep sutures, layered repair, corner stitch) Manages a severe burn Determines which wounds should not be closed primarily Demonstrates appropriate use of consultants Identifies wounds that may be high risk and require more extensive evaluation (example: x-ray, ultrasound, and/or exploration)	Achieves hemostasis in a bleeding wound using advanced techniques, such as cautery, ligation, deep suture, injection, topical hemostatic agents, and tourniquet Repairs wounds that are at high risk for cosmetic complications (such as eyelid margin, nose, ear) Describes the indications for and steps to perform an escharotomy	Performs advanced wound repairs, such as tendon repairs and skin flaps

^a Assesses and appropriately manages wounds in patients of all ages regardless of the clinical situation.TABLE 14 OTHER DIAGNOSTIC AND THERAPEUTIC PROCEDURES: VASCULAR ACCESS (PC14)^a

Level 1	Level 2	Level 3	Level 4	Level 5
Performs a venipuncture Places a peripheral intravenous line Performs an arterial puncture	Describes the indications, contraindications, anticipated undesirable outcomes, and complications for the various vascular access modalities Inserts an arterial catheter Assesses the indications in conjunction with the patient anatomy/pathophysiology and selects the optimal site for a central venous catheter Inserts a central venous catheter using ultrasound and universal precautions Confirms appropriate placement of central venous catheter Performs intraosseous access	Inserts a central venous catheter without ultrasound when appropriate Places an ultrasound-guided deep vein catheter (eg, basilic, brachial, and cephalic veins)	Successfully performs 20 central venous lines Routinely gains venous access in patients with difficult vascular access	Teaches advanced vascular access techniques

^a Successfully obtains vascular access in patients of all ages regardless of the clinical situation.TABLE 15 MEDICAL KNOWLEDGE (MK)^a

Level 1	Level 2	Level 3	Level 4	Level 5
Passes initial national licensing examinations (eg, USMLE Step 1 and Step 2 or COMLEX Level 1 and Level 2)	Resident develops and completes a self-assessment plan based on the in-training examination results Completes objective residency training program examinations and/or assessments at an acceptable score for specific rotations	Demonstrates improvement of the percentage correct on the in-training examination or maintains an acceptable percentile ranking	Obtains a score on the annual in-training examination that indicates a high likelihood of passing the national qualifying examinations Successfully completes all objective residency training program examinations and/or assessments Passes final national licensing examination (eg, USMLE Step 3 or COMLEX Level 3)	Passes ABEM certifying examinations Meets all of the requirements for the ABEM Maintenance of Certification program set forth by the national certifying agency

^a Demonstrates appropriate medical knowledge in the care of emergency medicine patients.

TABLE 16 PROFESSIONAL VALUES (PROF1)^a

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates behavior that conveys caring, honesty, genuine interest, and tolerance when interacting with a diverse population of patients and families	Demonstrates an understanding of the importance of compassion, integrity, respect, sensitivity, and responsiveness, and exhibits these attitudes consistently in common/uncomplicated situations and with diverse populations	Recognizes how one's own personal beliefs and values impact medical care; consistently manages one's own values and beliefs to optimize relationships and medical care Develops alternate care plans when patients' personal decisions/beliefs preclude the use of commonly accepted practices	Develops and applies a consistent and appropriate approach to evaluating appropriate care, possible barriers, and strategies to intervene that consistently prioritizes the patient's best interest in all relationships and situations Effectively analyzes and manages ethical issues in complicated and challenging clinical situations	Develops institutional and organizational strategies to protect and maintain professional and bioethical principles

^a Demonstrates compassion, integrity, and respect for others as well as adherence to the ethical principles relevant to the practice of medicine.TABLE 17 ACCOUNTABILITY (PROF2)^a

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic professional responsibilities such as timely reporting for duty, appropriate dress/grooming, rested and ready to work, and delivery of patient care as a functional physician Maintains patient confidentiality Uses social media ethically and responsibly Adheres to professional responsibilities, such as conference attendance, timely chart completion, duty hour reporting, and procedure reporting	Identifies basic principles of physician wellness, including sleep hygiene Consistently recognizes limits of knowledge in common and frequent clinical situations and asks for assistance Demonstrates knowledge of alertness management and fatigue mitigation principles	Consistently recognizes limits of knowledge in uncommon and complicated clinical situations; develops and implements plans for the best possible patient care Recognizes and avoids inappropriate influences of marketing and advertising	Can form a plan to address impairment in one's self or a colleague in a professional and confidential manner Manages medical errors according to principles of responsibility and accountability in accordance with institutional policy	Develops institutional and organizational strategies to improve physician insight into and management of professional responsibilities Trains physicians and educators regarding responsibility, wellness, fatigue, and physician impairment

^a Demonstrates accountability to patients, society, profession, and self.TABLE 18 PATIENT-CENTERED COMMUNICATION (ICS1)^a

Level 1	Level 2	Level 3	Level 4	Level 5
Establishes rapport with and demonstrates empathy toward patients and their families Listens effectively to patients and their families	Elicits patients' reasons for seeking health care and expectations from the ED visit Negotiates and manages simple patient/family-related conflicts	Manages the expectations of those who receive care in the ED and uses communication methods that minimize the potential for stress, conflict, and misunderstanding Effectively communicates with vulnerable populations, including both patients at risk and their families	Uses flexible communication strategies and adjusts them based on the clinical situation to resolve specific ED challenges, such as drug-seeking behavior, delivering bad news, unexpected outcomes, medical errors, and high-risk refusal-of-care patients	Teaches communication and conflict management skills Participates in review and counsel of colleagues with communication deficiencies

^a Demonstrates interpersonal and communication skills that result in the effective exchange of information and collaboration with patients and their families.

TABLE 19 TEAM MANAGEMENT (ICS2) ^a				
Level 1	Level 2	Level 3	Level 4	Level 5
Participates as a member of a patient care team	Communicates pertinent information to emergency physicians and other health care colleagues	Develops working relationships across specialties and with ancillary staff Ensures transitions of care are accurately and efficiently communicated Ensures clear communication and respect among team members	Recommends changes in team performance as necessary for optimal efficiency Uses flexible communication strategies to resolve specific ED challenges, such as difficulties with consultants and other health care providers Communicates with out-of-hospital and nonmedical personnel, such as police, media, and hospital administrators	Participates in and leads interdepartmental groups in the patient setting and in collaborative meetings outside of the patient care setting Designs patient care teams and evaluates their performance Seeks leadership opportunities within professional organizations

^a Leads patient-centered care teams, ensuring effective communication and mutual respect among members of the team.

TABLE 20 PRACTICE-BASED PERFORMANCE IMPROVEMENT (PBI) ^a				
Level 1	Level 2	Level 3	Level 4	Level 5
Describes basic principles of evidence-based medicine	Performs patient follow-up	Performs self-assessment to identify areas for continued self-improvement and implements learning plans Continually assesses performance by evaluating feedback and assessment Demonstrates the ability to critically appraise scientific literature and apply evidence-based medicine to improve one's individual performance	Applies performance improvement methodologies Demonstrates evidence-based clinical practice and information retrieval mastery Participates in a process improvement plan to optimize ED practice	Independently teaches evidence-based medicine and information mastery techniques

^a Participates in performance improvement to optimize ED function, self-learning, and patient care.

TABLE 21 PATIENT SAFETY (SBPI) ^a				
Level 1	Level 2	Level 3	Level 4	Level 5
Adheres to standards for maintenance of a safe working environment Describes medical errors and adverse events	Routinely uses basic patient safety practices, such as time-outs and 'calls for help'	Describes patient safety concepts Employs processes (eg, checklists, SBAR), personnel, and technologies that optimize patient safety (SBAR = Situation – Background – Assessment – Recommendation) Appropriately uses system resources to improve both patient care and medical knowledge	Participates in an institutional process improvement plan to optimize ED practice and patient safety Leads team reflection, such as code debriefings, root cause analysis, or M&M, to improve ED performance Identifies situations when the breakdown in teamwork or communication may contribute to medical error	Uses analytical tools to assess health care quality and safety and reassess quality improvement programs for effectiveness for patients and for populations Develops and evaluates measures of professional performance and process improvement, and implements them to improve departmental practice

^a Participates in performance improvement to optimize patient safety.

SYSTEMS-BASED MANAGEMENT (SBP2) ^a					
Level 1	Level 2	Level 3	Level 4	Level 5	
Describes members of ED team (eg, nurses, technicians, and security)	Mobilizes institutional resources to assist in patient care Participates in patient satisfaction initiatives	Practices cost-effective care Demonstrates the ability to call effectively on other resources in the system to provide optimal health care	Participates in processes and logistics to improve patient flow and decrease turnaround times (eg, rapid triage, bedside registration, Fast Tracks, bedside testing, rapid treatment units, standard protocols, and observation units) Recommends strategies by which patients' access to care can be improved Coordinates system resources to optimize a patient's care for complicated medical situations	Creates departmental flow metric from benchmarks, best practices, and dash boards Develops internal and external departmental solutions to process and operational problems Addresses the differing customer needs of patients, hospital medical staff, EMS, and the community	

^a Participates in strategies to improve health care delivery and flow. Demonstrates an awareness of and responsiveness to the larger context and system of health care.

TECHNOLOGY (SBP3) ^a					
Level 1	Level 2	Level 3	Level 4	Level 5	
Uses the Electronic Health Record (EHR) to order tests, medications, and document notes, and respond to alerts Reviews medications for patients	Ensures that medical records are complete, with attention to preventing confusion and error Effectively and ethically uses technology for patient care, medical communication, and learning	Recognizes the risk of computer shortcuts and reliance upon computer information for accurate patient care and documentation	Uses decision support systems in EHR (as applicable in the institution)	Recommends systems redesign for improved computerized processes	

^a Uses technology to accomplish and document safe health care delivery.