

Emergency Medicine Rotation Educational Goals & Objectives

The emergency medicine rotation will provide the resident with an opportunity to evaluate and manage patients with common acute physical and mental illnesses within a finite time span. Training will emphasize the rapid gathering of a pertinent history, a focused physical exam, and the triage of serious versus minor illnesses. Residents should become familiar with the approach to the acutely ill unstable patient and the appropriate social and medical disposition of patients. Finally, residents will become skilled in the performance of procedures necessary to manage conditions commonly seen in the Emergency Department.

Faculty will facilitate learning in the 6 core competencies as follows:

Patient Care and Procedural Skills

- I. All residents must be able to provide compassionate, culturally-sensitive, and appropriate care for patients presenting to the emergency department.
 - PGY2s should seek directed and appropriate specialty consultation when necessary to further patient care.
 - PGY3s should supervise and ensure seamless transitions of care to the inpatient team, oncoming ED staff, or home.

- II. Residents will demonstrate the ability to take a succinct, pertinent history and perform a focused physical exam. PGY1s should be able to differentiate stable from unstable patients and appreciate and characterize the following physical findings:
 - Abnormal respiratory patterns
 - Abnormal heart and lung sounds
 - Assessment of volume status
 - Peritoneal signs
 - SIRS physiology and symptoms and signs of shock
 - Focal neurologic abnormalities

PGY2s should also be able to access additional pertinent historical information as appropriate from family, caretakers, and outside records in a timely fashion, and detect more subtle physical findings.

PGY3s should be able to independently obtain a focused history and perform a targeted physical exam.

- III. Residents will understand the indications, contraindications, complications, limitations, and interpretation of following procedures, with the goal of becoming competent in their safe and effective use:
PGY1s
 - Blood draw, arterial and venous
 - BLS and ACLS protocols

- Central line placement
- Endotracheal intubation
- Fluorescent staining of cornea
- I&D
- Local anesthesia
- Lumbar puncture
- Nasal packing
- Paracentesis
- Placement of nasogastric tube
- Thoracentesis
- Suturing of lacerations

PGY1s will also develop skill in use of point-of-care ultrasound, when possible, in the following areas:

- Abdomen – identify ascites, common locations for ascites collection, largest fluid pocket, and safest locations for paracentesis; FAST exam; identify caliber of aorta; identify spleen size
- Right upper quadrant abdomen – identify gallbladder; diagnose or exclude cholelithiasis; assess sonographic Murphy's sign
- Chest – identify pleural effusion, location of lung, and safest location for thoracentesis; identify pneumothorax
- Vascular – identify jugular vein, common femoral vein; differentiate vein from artery; check patency
- Renal – evaluate for presence/absence of hydronephrosis
- Bladder – estimate bladder urine volume
- Skin and musculoskeletal – identify abscess, utilize US for joint injection

PGY2s: arthrocentesis, nail removal

PGY3s: cardioversion (optional), intraosseous access, needle decompression of tension pneumothorax

Medical Knowledge

- I. Residents will become knowledgeable in the following issues pertaining to emergency care:

PGY1s

- Addiction and withdrawal syndromes
- Domestic violence, and elder and child abuse
- Homelessness

PGY2s

- Basic principles of health insurance coverage
- Diagnosis of brain death
- Disposition of patients to various levels of care, including skilled nursing facilities

PGY3s

- Triage, including the need for acute surgical intervention, and timely disposition

II. Residents will become comfortable with a basic approach to an array of conditions affecting patients from pediatrics to geriatrics. These conditions range from acute life-threatening illnesses to sub-acute and chronic illnesses presenting to the ED. The goal is to understand basic pathophysiology, differential diagnosis, focused diagnostic evaluation, and therapy for these disorders. As experience depends on the case mix at any given time, residents are strongly encouraged to develop their knowledge further with supplemental reading to ensure they become familiar with the following conditions:

- acid base disorders
- acute abdomen and abdominal pain
- acute coronary syndrome and cardiac arrest
- acute psychiatric emergencies, such as panic attack, psychosis, or suicidality
- acute renal failure
- adrenal crisis
- airway compromise
- altered mental status and coma
- anemia
- appendicitis
- aortic dissection and aortic aneurysm
- asthma exacerbation
- ataxia and gait disturbances
- back pain
- bites and stings
- bleeding, including GI, nasal, anticoagulation-related, traumatic, and vaginal
- bowel obstruction
- breast disorders
- burns: chemical and thermal
- cardiac arrhythmias
- central nervous system and spinal infections
- chest pain
- child abuse
- cholecystitis
- congenital heart disease, newly presenting in the ER
- congestive heart failure
- common eye, ear and mouth disorders
- common poisonings and overdoses
- compartment syndrome
- COPD exacerbation
- deep venous thrombosis and pulmonary embolus
- diabetic ketoacidosis and hyperosmolar hyperglycemic state
- diarrhea

- diverticulitis
- drowning
- electrolyte abnormalities
- fever and serious bacterial illness in infants
- fluid and blood resuscitation
- headache and facial pain
- heat emergencies and hypothermia
- hemoptysis
- hematology and oncology emergencies, such as blast crisis, cord compression, febrile neutropenia, and superior vena cava syndrome
- hypertensive urgency and emergency
- infant and neonatal emergencies
- infections and disorders of the neck and upper airway
- intracranial hemorrhage
- nausea and vomiting
- ocular and oral emergencies
- pelvic pain
- peripheral neurologic lesions
- pneumonia
- pneumothorax, including tension pneumothorax
- pregnancy and obstetric emergencies
- rashes and generalized serious skin disorders
- respiratory distress/failure
- rhabdomyolysis
- seizure
- sexually transmitted diseases
- shock: anaphylactic, cardiogenic, hypovolemic, septic, toxic
- soft tissue infections
- sprains, fractures, and overuse injuries
- stroke and TIA
- syncope
- thyroid storm and myxedema coma
- trauma – abdominal, extremity, penetrating, spine
- trauma and envenomations from marine fauna
- traumatic brain injury
- tuberculosis
- urinary retention
- urinary tract infections
- vaginal bleeding
- vertigo and dizziness
- wheezing and stridor
- wounds

PGY2s will show progression in knowledge of acuity, analytical thinking, appropriate diagnostic evaluation, and initiation of guideline-based management for both adult and pediatric conditions.

PGY3s will be able to independently assess patients and triage patient management tasks appropriately to effectively manage multiple patients with acute complaints in a timely fashion.

III. Residents will be able to understand the indications for ordering and interpretation of results from diagnostic studies, including:

PGY1s

- Arterial blood gas – interpretation of oxygenation and basic acid-base status
- Computed tomography imaging of head, chest and abdomen
- EKG
- General laboratory studies ordered in the Emergency Department
- Radiographs of chest, abdomen, and extremities
- Ultrasound of abdomen, pelvis

PGY2s

- Arterial blood gas – interpretation of complex basic acid-base status
- Magnetic resonance imaging of head, chest and abdomen

PGY3s will independently order and interpret laboratory and diagnostic tests appropriate on presentation as well as under circumstances of rapid change in the condition of the patient.

Practice-Based Learning and Improvement

- I. PGY1s should be able to access current clinical practice guidelines from journals and online sources to apply evidence-based strategies to patient care.
- II. PGY2s should also develop progressive independence in evaluating new studies in published literature.
- III. Residents should learn to coordinate care by involving the patient's primary care doctor and hospital consultants to optimize patient care, and PGY3s should take a leadership role.
- IV. Residents should effectively transition patients within the system to the inpatient team, oncoming ED staff, or home.
- V. Residents should respond with positive changes to feedback from members of the health care team.

Interpersonal and Communication Skills

- I. PGY1s must demonstrate interpersonal verbal and written (electronic) communication skills that facilitate the timely and effective exchange of information and collaboration with patients, their families, and other health professionals.

- II. PGY2s must also gain experience in managing the social dynamics in the emergency department.
- III. PGY3s will move toward progressive independence in dealing with difficult patients, identifying the power of attorney or surrogate decision maker, and resolving conflict among family members with disparate wishes.
- IV. All residents need to ensure patients and their families understand discharge and follow up instructions.

Professionalism

- I. All residents must demonstrate strong commitment to carrying out professional responsibilities as reflected in their conduct, ethical behavior, attire, interactions with colleagues and community, and devotion to patient care.
- II. PGY1s should be able to educate patients and their families in a manner respectful of gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation on choices regarding their care.
- III. PGY2s should also be able to counsel patients and their families on more complex diagnostic and treatment decisions and on withdrawal of care.
- IV. PGY3s should mentor and provide constructive feedback to students and residents they are supervising.
- V. Residents should be able to use time efficiently in the ED to see patients and chart information

Systems-Based Practice

- I. PGY1s must have a basic understanding that their diagnostic and treatment decisions involve cost and risk and affect quality of care.
- II. PGY2s must be able to discuss alternative care strategies and the cost and risks involved and articulate current quality issues in Emergency Medicine.
- III. PGY3s must demonstrate an awareness of and responsiveness to established quality measures, risk management strategies, and cost of care within our system.

Teaching

- I. Supervised patient care in the Emergency Department:
Residents will initially be directly observed with patients, to facilitate the acquisition of excellent history taking, physical exam, and procedural skills.
 - As residents become more proficient, they will interact independently with patients and present cases to faculty.
 - Initial emphasis will be on diagnosis and basic management.
 - When residents have mastered these skills, focus will be on medical decision-making, and residents will work with supervising physicians to finalize a care plan.
 - Residents will work to gain competence in procedural skills such that they can perform procedures under indirect supervision or independently.
- II. Conferences
 - Specialty-specific didactics

- III. Independent study will be the primary source of didactic material: 20 hours per per week
 - a reading list will be provided at the start of the first Emergency Department rotation with the expectation that it will completed by the conclusion of the resident's final Emergency Department rotation during residency
 - Journal and Textbook reading: primary sources should be the following:
 - Tintinalli's *Emergency Medicine, A Comprehensive Study Guide*
 - Roberts and Hedges's *Clinical Procedures in Emergency Medicine*
 - Online educational resources
 - Pain management and addiction:
<https://www.hhs.gov/opioids/treatment/overdose-response/index.html>
 - Up to Date
 - Clinical Key

Evaluation

- I. Case and procedure logs
- II. POCUS Skills Assessment Form—**residents who have not completed the POCUS Skills Assessment form on the Radiology rotation should continue to work on those skills.**
- III. Mini-CEX
- IV. Verbal feedback at the end of shift
- V. Written attending shift evaluations of resident performance based on observations and chart review

Rotation Structure

- I. Residents should contact ED Education Director or the Emergency Department Manager 1-3 days prior to the rotation start date to determine start time and location. Residents must notify the attending physician promptly if they cannot be available for their designated shifts.
- II. Residents will spend their time in the Emergency Department, doing a variety of different shifts, with the purpose of providing a broad range of experience to achieve the above educational goals. The following programs have very specific educational requirements, and their rotations will be structured to achieve those standards.
 - 200 hours (or 2 months) or 250 patient encounters for Family Medicine
 - At least 4 weeks (in blocks not less than 2 weeks, not to exceed 2 months) for Internal Medicine
 - Residents are the primary care providers and have first-contact responsibility for a sufficient number of unselected patients presenting to the ED. Residents will be involved in discussion of patient presentation, generation of a differential diagnosis, development of a treatment plan, and patient follow up. In addition, residents will be involved in surgical procedures as is appropriate.
- III. Case-based learning is most effective. Nightly reading/study should be based on patients seen during the day.
- IV. The ED provides an excellent opportunity to hone procedural skills. Residents should use this opportunity to get signed off on procedures, with emphasis on use of point-of-care ultrasound (POCUS).

- V. Residents may be asked to do focused literature searches or presentations during the course of the rotation.
- VI. Call and weekend responsibilities TBD by Dr. Moll.
 - Hours worked must be consistent with ACGME requirements and are subject to approval by the Program Director.
- IV. Residents have specialty-specific didactics and should be excused in a timely fashion to attend.