

EMERGENCY MEDICINE

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General Description

Elective Rotation

The clinical rotation in emergency medicine is a four (4) week experience structured to develop the student's decision-making, cognitive skills and to apply didactic material in a clinical setting. Students selecting this rotation will be in their third or fourth year of osteopathic medical school. By the nature of emergency room staffing, students may be required to work evenings, nights, or weekend shifts. It is an expectation that students will staff the emergency room for no less than thirty-six hours, and no more than sixty hours per week.

Purpose

Clinical experiences are intended to assist the students' transition from didactics to integrated clinical evaluation, decision-making, and management of patients with medical problems. In addition to gaining specific skills in emergency medicine during this rotation, the student should also continue to develop skill in systematic medical problem solving and patient management abilities, establish or reinforce patterns of independent learning and self-evaluation, and improve skills in communication and medical record keeping.

At the completion of this rotation, the student should have enhanced broad educational goals, including:

- development of systematic medical problem solving and patient management abilities in the emergency setting;
- expanded knowledge of common emergencies, their diagnosis and management
- improved emergency clinical skills, including both diagnostic and therapeutic procedures

Students are expected to assist in the management of common emergency problems, under supervision. The student should also develop fundamental psychomotor skills by performing routine basic procedures under direct supervision.

Objectives

We recognize that four weeks is insufficient time to cover a comprehensive list of objectives. Clearly, subjects addressed in any clinical rotation are dependent on the number of patients and kinds of disease entities presenting to a particular service. Nevertheless, certain minimum content **must** be addressed, either by clinical exposure or by didactic materials so that students are prepared for Board examinations and other testing. Therefore, each of the following sections contains relatively broad, basic objectives for which students are responsible. Affective objectives are fundamental.

Affective Objectives

1. Gain confidence in the rapid establishment of a patient- physician relationship in the emergency setting.
2. Understand how to react (attitude and behavior) and assist in an emergency situation.
3. Understand the psychosocial, social and economic status of emergency department patients, in particular those issues relating to alcohol or drug use and abuse.

Basic Psychomotor Objectives

At the completion of the emergency medicine rotation, the student should be able to apply osteopathic medical principles and practices to:

1. Perform and record an abbreviated history, focused physical examination, and obtain other pertinent history quickly and efficiently.
2. Rapidly assess emergency patients, recognizing the signs and symptoms that distinguish a significantly ill patient from one with a minor illness.
3. Establish a differential diagnosis of common illnesses presenting in an emergency setting.

4. Prioritize patient management.
5. Demonstrate knowledge of basic life support and resuscitation methods.
6. Use laboratory tests appropriately.
7. Initiate treatment with supervision.
8. Recognize the need for and appropriateness of consultation and/or referral.
9. Anticipate possible treatment actions, reactions, and interactions.

In addition, students should be able to demonstrate

1. knowledge of basic life support and resuscitation
2. knowledge of first hour management in medical and surgical emergencies
3. knowledge of pertinent pathophysiology in the urgent and emergent patient, to include shock, fluid imbalance, and cardiopulmonary resuscitation.
4. knowledge of rapid stabilization techniques for critically ill patients
5. knowledge of chest tube placement, endotracheal intubation, suturing techniques and other techniques as directed.
6. knowledge of when to transfer a patient to a higher-level facility
7. familiarity with EMTALA laws governing transfer and acceptance of a patient
8. understanding of clearing a C-spine (NEXUS Criteria and Canadian CSpine Rules)

Basic Cognitive Objectives

For each of the following core emergency medicine areas, the student should be able to:

- obtain a rapid, accurate history.
- perform an appropriate, focused physical examination.
- develop a working differential diagnosis.
- outline an approach to management, considering all available therapeutic methods

1. Abdominal emergencies

- blunt or penetrating trauma
- gastrointestinal hemorrhage
- perforated viscus
- intestinal obstruction
- appendicitis
- pancreatitis
- diverticulitis
- cholecystitis
- incarcerated hernia

2. Airway emergencies

- epiglottitis
- foreign body aspiration
- facial and tracheal trauma

3. Cardiovascular emergencies

- unstable angina pectoris
- acute myocardial infarction
- cardiac arrest
- penetrating and blunt cardiac trauma
- acute cardiac rhythm disturbances
- hypertensive emergencies
- pulmonary edema

4. Dental emergencies

- post extraction hemorrhage
- tooth avulsion or fracture
- root abscess

5. Endocrine emergencies

- diabetic ketoacidosis
- insulin shock and other severe hypoglycemic states
- thyroid storm

6. ENT emergencies

- foreign body, ear canal/nasal passages
 - epistaxis
 - labyrinthitis
 - tonsillar abscess
7. Eye emergencies
 - corneal abrasion
 - intraocular foreign bodies
 - hyphema
 - conjunctivitis
 - iritis
 - trauma
 - orbital vs periorbital cellulitis
 8. Fluid and electrolyte disturbances
 - sodium, potassium and calcium imbalances
 - metabolic/respiratory acidosis/alkalosis
 - severe dehydration
 9. Gynecologic emergencies
 - ectopic pregnancy
 - spontaneous abortion
 - post-abortion complications (e.g. sepsis, retained products of conception, etc)
 - severe uterine bleeding
 - ovarian torsion
 - sexual assault
 10. Hematologic emergencies
 - acute blood loss
 - sickle cell crisis
 11. Infectious emergencies
 - meningitis/encephalitis
 - sepsis/SIRS and likely causes
 - pyelonephritis
 - abscess
 - tetanus/rabies
 12. Musculoskeletal emergencies
 - fractures/dislocations
 - spinal trauma
 13. Neurologic emergencies
 - cerebral infarction (stroke) and TIA
 - seizure
 - vertebrobasilar syndrome
 - concussion
 - dementia vs delirium
 - subdural and subarachnoid hemorrhage
 14. Psychologic emergencies
 - mania
 - suicidal ideation/suicide attempt
 - anxiety disorders
 - clinical depression
 15. Pulmonary emergencies
 - asthma
 - acute bronchitis/pneumonia
 - acute respiratory failure
 16. Toxicologic emergencies
 - intoxication of unknown type
 - carbon monoxide inhalation
 - narcotic overdose
 - polydrug ingestion
 - etoh

17. Trauma

- multisystem trauma
- burns
- gunshot and stab wounds
- lacerations
- shock

18. Urologic emergencies

- ureterolithiasis
- testicular torsion
- renal trauma (blunt and penetrating)
- UTI/urosepsis

Implementation

Course objectives are to be accomplished in a College affiliated hospital or clinical facility, under supervision. Basic objectives **must** be covered during the rotation to assure adequate student preparation for Board examinations and other evaluations such as post-rotation examinations. The use of diverse methods appropriate to the individual and the clinical site are encouraged, but patient-centered teaching is optimal.

Didactic methods to achieve required objectives include:

- reading assignments
- lectures, including those prepared and given by the student
- computer-assisted programs (if available)
- student attendance at/participation in formal clinical presentations by medical faculty
- emergency medicine case study assignments

Clinically oriented teaching methods may include:

- supervised and critiqued clinical workups of patients admitted to the emergency medical service
- assignment of limited co-management responsibilities under supervision
- assigned, case-oriented reading case presentations

Three levels of achievement are identified:

- familiarity with a variety of medical procedures through observation and assisting
- proficiency in clinical procedures through actual supervised performance
- awareness of the availability of various medical procedures and their use.

Evaluation of student should be completed on the E*Value on-line system within one week from completion of the rotation. On the last day of service, the supervising physician should review the student's performance with the student. A student's signature simply indicates that the student has received a grade directly from the attending; it does not indicate agreement with the grade received.

Texts and Resources

Required Assignment Text

Tintinalli, Krone & Ruiz Emergency Medicine, A Comprehensive Study Guide. American College of Emergency Physicians, current edition.

Required Reference Texts

Isselbacher, Kurt, Harrison's Principles of Internal Medicine, or comparable per General Medicine Clinical Rotation Required Reference Text selections.

Johnson, K. B., The Harriet Lane, Mosby-Yearbook, Inc., latest edition.

Manual of Medical Therapeutics, Washington University Department of Medicine: Dunagan & Ridner, current edition.

Sauer, Gordon, Manual of Skin Diseases, Lippincott, current edition.

Additional Helpful Reading Resources

Lang Series:

1. Current Emergency Diagnosis and Treatment
2. Current Medical Diagnosis and Treatment
3. Current Pediatric Diagnosis and Treatment
4. Current Surgical Diagnosis and Treatment

Assignments

1. From the assignment text, read the appropriate sections for each of the core areas listed in the Cognitive Objectives section.
2. Supplement readings for patients seen each day from the required reference texts. Be prepared for daily discussion at the direction of the preceptor physician.