

## SPECIAL CONTRIBUTIONS

## Emergency Medicine in Undergraduate Education

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**Abstract.** Society has a right to expect that all physicians possess basic knowledge of emergency care and the skills to manage acute problems. Competency in the care of acutely ill and injured patients is one of the fundamental exit goals of most medical schools as mandated by the Liaison Committee on Medical Education. Several groups have called for strengthening the general components of undergraduate medical education, and surveys during the early years of the development of the field of emergency medicine (EM) showed that only a small percentage of schools required significant education in EM. This paper defines the goals and objectives of undergraduate EM

education in order to help guide the development of curricular offerings as the role of EM in undergraduate medical school education increases. This paper was developed by the SAEM Education Committee and presents this committee's beliefs on what all graduating medical students should know about assessment and treatment of acutely sick and injured patients. It also suggests methods by which acquisition of this information can occur in medical school education. **Key words:** education; curricula; emergency medicine; undergraduate medical education. ACADEMIC EMERGENCY MEDICINE 1998; 5: 1105-1110

“THE IMPLICATION that one can graduate in medicine with distinction while unable to avert disaster in practical clinical situations is thought provoking.”<sup>1</sup> These words, written in *The Lancet* in 1972, still resonate today as medical schools explore the depth and extent of undergraduate education in emergency medicine (EM). In 1994, the Macy Foundation held a symposium to discuss this issue and recommended that EM educators review current curricular offerings in the field to determine whether they address the needs of the populations we serve.<sup>2</sup>

Several groups have called for strengthening the general components of undergraduate medical education,<sup>3,4</sup> reversing the trend of previous de-

grades in which the rise of medical specialties led to the dominance of these specialists in the medical education process. As deficits in general medical education were recognized, deficits in emergency medical education were also noted.<sup>5-7</sup> Surveys during the early years of the development of the field showed a small percentage of schools requiring significant education in EM.<sup>8-11</sup> In 1994, only 20% of allopathic medical schools had a required EM clerkship<sup>12</sup>—a number unchanged from a decade earlier. More recently, the number of academic departments of EM has increased substantially,<sup>13</sup> indicating potential growth of EM involvement in undergraduate education. This paper defines the goals and objectives of undergraduate EM to help guide the development of curricular offerings as undergraduate education involvement increases.

The Macy report authors and others<sup>14,15</sup> note that the role of EM faculty in undergraduate education may be underemphasized, and recommend that EM faculty contribute more to teaching clinical skills and to demonstrating correlations between basic science and clinical medicine. The purpose of this article is twofold: first, to present the objectives and goals for undergraduate education in EM and link them to teaching methods; and second, to demonstrate how EM faculty and the emergency center can serve an integral role in providing that education.

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## GOALS OF UNDERGRADUATE EM

Competency in the care of acutely ill and injured patients is one of the fundamental exit goals of most medical schools as mandated by the Liaison Committee on Medical Education.<sup>16</sup> Precisely what level of “competency” is desirable is often left vague.<sup>17</sup> After we delineate the general goals of undergraduate emergency medical education, we present specific objectives, assessment methods, and educational methodologies for teaching them. Since objectives, teaching methods, and assessment are intimately connected, defining the assessment method first in some cases may even crystallize the objectives and teaching methodology.<sup>18</sup>

For all education objectives, four cognitive levels have been described.<sup>19</sup> First, at the foundation is fact recall, or fund of knowledge. Second, the application of that information to different situations represents a higher level of cognitive function. A more complex cognitive task at the third level is showing how that information is used in a realistic setting, and finally the highest level is actually demonstrating the task in a real encounter. These levels of competence are described as “knows,” “knows how,” “shows how,” and “does,” and each implies a distinct type of evaluation methodology. These different levels of complexity are relevant to the description of the year-by-year goals for EM education.

### CORE KNOWLEDGE OF EMERGENCY MEDICAL CARE

What should all graduating medical students know about the assessment and treatment of acutely sick and injured patients? The general goals of emergency medical undergraduate education are:

- Acquisition of basic life support skills, including the diagnosis and treatment of shock, and related basic procedural skills
- Differentiation and treatment of common acute problems
- Assessment of the undifferentiated patient

***Basic Life Support Skills.*** The most important goal of emergency medical education is the ability to recognize and stabilize patients with life-threatening conditions.<sup>1</sup> All physicians should be able to: 1) recognize when they are in the presence of a patient with a serious condition that necessitates urgent attention; 2) prioritize attention to those patients with more urgent conditions; and 3) take the first steps necessary to save a life, specifically including opening the airway, respiratory support by bag–valve–mask apparatus, circulation augmentation with IV fluid, and hemorrhage control

using external pressure. In addition, physicians should be able to recognize potentially treatable neurologic insults, and recognize and initially manage potentially dangerous and treatable poisonings in any age group.

How should competency in this area be demonstrated and taught? Fund of knowledge in general, and specifically knowledge about recognition of particular emergencies, can be tested by written or oral examination. Competent performance of lifesaving skills should be assessed using mannequins or other simulations, accompanied by oral examination. The education method should include lectures to transmit the knowledge base, as well as “hands-on” experience. These skills are best taught in an environment where they can be demonstrated often, and practiced several times by students. In the ED, the student is exposed to a wide array of patients with life-threatening conditions and has repeated opportunities to learn diagnostic and therapeutic approaches to these patients that may prove lifesaving.

Knowledge of emergencies at different points along the continuum of care also can be taught in other ambulatory care settings and the intensive care unit. Particularly important in an outpatient office setting, for example, is recognition of potentially life-threatening problems such as hypertensive crises in patients presenting with minimal symptoms.

### ***Differentiation and Treatment of Common Acute Problems.***

All physicians should have a broad basic knowledge of the management of common acute problems. The public reasonably expects physicians to give proper advice about when to be concerned about chest pain or a headache, or about such problems as a burn or laceration, epistaxis, sprained or potentially fractured extremity, diarrhea, and unintentional or intentional ingestion. Complaints such as these are increasingly the responsibility of generalists, and although they may turn out to be relatively minor in terms of severity, they must be managed correctly to avoid unnecessary complications while efficiently utilizing resources.

While a detailed list of the expected competencies in this area would be quite long,<sup>20–22</sup> several examples are: 1) treat superficial burns and recognize when patients with burns require advanced care, 2) assess injured extremities for possible fracture or dislocation and identify those patients needing x-rays, and 3) stabilize a patient who has had a seizure and determine the need for further evaluation.

There are equally important related competencies that pertain to later phases in the care of these emergencies. These other objectives include a stu-

dent's ability to list the complications of an illness, or discuss the surgical options in the case of medical management failure. These competencies can be assessed with oral or written examinations, and may be best taught by inpatient rotations and lectures by other specialists.

### ***Assessment of the Undifferentiated Patient.***

Once a disease or injury is "labeled" with a diagnosis, one can turn to the relevant textbook chapters for advice. It is the undifferentiated patient, however, who often presents the greatest challenge. Basic skills in recognition and evaluation are critical to the education of physicians.

Many of the desired exit objectives for undergraduate EM use verbs such as "distinguish," "assess," "identify," or "recognize." Demonstration of competence in these areas, therefore, implies that a student is able to differentiate a previously undifferentiated or unselected patient. The method of education is for students to see unselected patients, and then practice carrying out the desired skills. These unselected patients are found primarily in outpatient settings and particularly in EDs.

When one of the key goals of medical education is recognition and identification of acute clinical problems, it makes sense for students to learn about these problems through patients' presenting complaints before these complaints have been sorted out, and before patients have been referred to specialty physicians. Therefore, while many aspects of the continuity of emergency medical care can be taught in inpatient settings, or in settings that care for a selected subset of patients, the earliest phase of emergency care is best learned in the setting of a new undifferentiated patient. A patient with abdominal pain, for example, may have a metabolic problem (diabetic ketoacidosis), an infection in the abdomen (appendicitis), pelvis (endometritis-salpingitis), or chest (pneumonia), or a neuropathic condition (herpes zoster). This typical undifferentiated patient has possible etiologies that cover multiple organ systems and medical specialties. Patients like this one compel the budding physician to explore the full range of possibilities, and then test the hypotheses with diagnostic interventions.

### **MODEL UNDERGRADUATE CURRICULUM**

The inductive reasoning that takes place in problem-based learning is similar to the process in all clinical medicine, but is particularly applicable in EM where management of a specific complaint requires an understanding of fundamental principles, and therefore can lead to deeper knowledge of general principles. While a number of educa-

tional methodologies can be used to teach EM, problem-based learning seems to be a natural fit for the concepts taught in this field. Starting with the competencies in emergency medical care we expect from graduating medical students, and incorporating other desired skills and attitudes, a curriculum for teaching these domains can be developed.

The progression of EM education should move from conceptual foundations in first aid using case discussions, mannequins, and standardized patients in the first year, to discussion of cases that involve concepts in trauma, shock, toxicology, environmental emergencies, out-of-hospital care and prevention in the second year, to advancement of interviewing, physical examination, and assessment skills during clerkships in the third year, followed by an ED clerkship in the fourth year.

The first year of an EM curriculum for undergraduates should focus on first aid. This should include training in CPR and choking, as well as first aid for simple burns, sprains, nosebleeds, and other problems that are straightforward and for which a great deal of background knowledge is not required to manage the earliest stages. In addition, the first year is a time to introduce the fundamentals of interviewing and physical examination using standardized patients and observation of real patient interactions in the ED. Counseling skills also can be introduced in this context as students explore the role of physicians in patient education and in the larger perspective of public education and advocacy.

The second year, when most medical school curricula emphasize pathology, pathophysiology, and pharmacology, presents an opportunity to integrate many basic concepts of emergency care. The connection between toxicology and pharmacology is readily apparent. Shock and environmental emergency cases can be excellent vehicles for learning concepts of oxygen transport and acid-base metabolism. Case studies related to alcohol, tobacco, and other drug abuse, violence, injury control, and prevention can be integrated into pharmacology, pathology, biology of disease, and introduction to clinical medicine. The end of the second year is when students are eager to learn basic procedural skills such as phlebotomy, and IV catheterization.

The third-year clerkships present an opportunity for students to develop familiarity with the course of common acute problems as patients move through the continuum of emergency care from the ED where stabilization occurs to inpatient wards where definitive treatment as well as complications of disease can be observed. One goal of EM education in the third year should be competence in basic clinical procedures such as phlebotomy, IV

catheterization, and simple suturing, as well as introduction to more advanced procedures in airway management, such as use of nasal trumpets, oral airway devices, and bag–valve–mask ventilation. Another goal should be development of skills in obtaining a directed history and physical examination. In addition, students can start to develop initial assessment skills in the more measured pace of an office practice. Inpatient and clinic rotations are also a time for developing primary prevention skills. Students should learn about firearm violence, the risks and sequelae of family violence, and the desensitizing effects of violence in the media. They also should be taught how to use brief strategies for negotiating behavioral change with their patients, including use of nonviolent discipline, conflict control, and compliance with seat belt laws and gun safety regulations.

By the fourth year, students are ready for the evaluation of undifferentiated patients in the less predictable setting of the ED. Here they can improve bedside clinical skills, including recognition of life-threatening conditions, and encounter a broad range of common acute problems. A complementary didactic program that emphasizes clinical reasoning and fills gaps in clinical exposure is an essential adjunct to the time spent seeing patients. It should include problem-oriented case discussions covering a wide range of chief complaints. In addition, the didactic program should include information about cardiac resuscitation and development of airway management skills. The fourth-year ED rotation is also an opportunity to screen patients for victimization, substance abuse, and other factors influencing risk of injury. A number of electives also can be offered in the fourth year, including pediatric EM, medical toxicology, occupational medicine, sports medicine, and EM research.

### WHERE SHOULD EM BE TAUGHT?

Education about emergent conditions takes place in many settings and by many types of physicians because of the continuum of emergency care that exists in our health care system. A patient with chest pain counseled in the past by his or her doctor about prevention, for example, is initially evaluated, and perhaps treated by out-of-hospital system personnel. The patient is transported to an ED, where he or she is seen by an emergency physician (EP). After bedside assessment and an ECG, an acute myocardial infarction (AMI) may be discovered, and thrombolytic therapy initiated. The acute management of the patient is then turned over to the cardiologist, who will care for the patient in the cardiac care unit, where other acute complications of the AMI may unfold. Care then

may be turned over to an internist, or rehabilitation specialist. Each of these physicians cares for the patient at a distinct point along the continuum of emergency care, and each has an important contribution to make in teaching students key competencies related to AMI. A similar story could be told for the patient in an auto crash, the infant with a high fever, or the acutely suicidal patient. In each example, many physicians participate in the education of students on topics related to different points along the continuum of emergency care.

The concept of a continuum of emergency care emphasizes the distinctive objectives of EM in undergraduate medical education. EM goals focus on the evaluation of patients undifferentiated by age, acuity, or organ system involvement, with an emphasis on timely decision making heavily based on bedside clinical skills. In the continuum of emergency care related to toxicology, for example, the goal of education in the ED is the initial recognition and management of toxic exposures. Other education goals in the continuum, like those related to nephrology, might concentrate on treatment of intoxicated patients with dialysis, while occupational medicine goals might emphasize hazards in the workplace. At the beginning of the emergency care continuum are the undifferentiated patients. They represent a unique challenge and therefore a unique teaching opportunity for EPs and the ED.<sup>23</sup>

Injury prevention and early disease identification are another area where EPs can make an important contribution.<sup>24</sup> One of the key links in the future will be between academic medical centers and the community,<sup>25</sup> and the ED is often the door through which the community enters. EPs are on the front lines dealing with acute injury, substance abuse, domestic abuse, and youth violence, and have become skilled in surveillance and prevention counseling. They can therefore teach students how to understand the dynamics of violence, recognize its victims, and plan for their safety following discharge from the hospital.

### CLINICAL SKILLS

The goal of graduating competent bedside clinicians is addressed throughout the medical school curriculum, but different elements of clinical skills education may be emphasized in various components of that curriculum. In the spectrum of bedside skills, the skill of initiating a patient–doctor relationship with an anxious, new patient experiencing an unexpected crisis is unique and important. This type of interaction with an undifferentiated new patient may be a portion of clinical skills education to which EM faculty can contribute.

Effective decision making is another goal in the spectrum of clinical skills education that is closely linked with the goals of undergraduate EM education. EPs guide students through a high volume of patient encounters, providing students with constant opportunities to make rapid, accurate, and cost-effective decisions about patient care. These decisions, often made with a limited amount of data, may help students learn to make efficient decisions in the future without unnecessary reliance on laboratory testing.

### TEAMWORK

The ability to work effectively as a member of a health care team is another goal cited by many schools, which dovetails with the goals of undergraduate EM education. It is also an attribute many potential physician employers expect. Our health care system is complicated and often the most effective, highest-quality patient care requires coordination of many health services. EPs often play an integral role as the system manager not only in the coordination of care with other professionals but also in connecting patients with outpatient services, utilizing observation services, and transferring patients between institutions. In the ED, a large variety of health care professionals work together in a fluid arrangement in which roles are often overlapping. Many patient situations require intense and immediate interaction among the ED workers. In addition, because of the full spectrum of problems seen in EM, there is regular consultation with physicians from other specialties, occurring in a compressed time frame compared with inpatient and office settings. The goal of effective communication and interaction is an important component of the medical school curriculum, with special pertinence to the EM curriculum.

### CONCLUSIONS

Society has a right to expect that all physicians possess basic knowledge of emergency care and the skills to manage common acute problems. Physicians are also expected to be able to work effectively with other health care professionals, and to understand medicine's responsibilities for public education and advocacy. The proposed four-year EM curriculum led by EPs will help students gain these skills. EM goals also should focus on helping students develop their clinical skills and acquire knowledge, skills, and attitudes associated with effective patient interaction and decision making.

The exposure to a truly undifferentiated patient population affords the student the opportunity to

develop an effective approach to evaluating and managing all patients. The graduating medical student—whether headed for a generalist or a specialist career—will benefit from this type of education.

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## Undergraduate Curriculum

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**Abstract.** The specialty of emergency medicine (EM) is becoming more and more involved in medical school education. The previous article discusses the integration of EM in medical school curricula. This outline was developed by the SAEM Undergraduate Education Committee to offer specific goals and ob-

jectives as well as suggestions for implementation of EM concepts into medical school curricula. **Key words:** curriculum; undergraduate medical education; education; emergency medicine. *ACADEMIC EMERGENCY MEDICINE* 1998; 5:1110–1113

### FIRST YEAR

**Overall Goal.** The first year of the emergency medicine (EM) curriculum should focus on first aid for common emergencies (Table 1).

**Specific Goals.**

1. The student will be proficient in the administration of CPR.
2. The student will be able to recognize and initiate first aid for the following conditions:
  - a. airway obstruction.
  - b. altered mental status and coma.
  - c. shock.
  - d. simple burns.
  - e. extremity injuries (sprains/strains/fractures).
3. The student will develop an understanding of the 9-1-1 and emergency response system in his or her community.

TABLE 1. First-year Emergency Medicine Curriculum

Problem	Disease
Introduction to first aid/9-1-1 access	—
Airway management	Airway obstruction
Respiration	Asthma
Circulatory collapse	Shock
Altered mental status	Coma/stupor
Extremity injury	Fracture/sprain

**Objectives.**

1. Perform mouth-to-mouth ventilation and chest compression on a mannequin.
2. Demonstrate the ability to access the 9-1-1 or emergency response system.
3. Perform first aid for choking.
4. Perform a chin lift and jaw thrust to open the airway.
5. Perform a basic mental status examination.
6. Demonstrate the recovery position.
7. Take a pulse and perform a blood pressure measurement.
8. Perform comfort measures on a patient (loosen tight clothing, keep the patient warm, elevate the patient's legs).
9. Begin initial pain control measures for burns and extremity injuries (ice, elevation, NSAIDs).

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10. Apply a dressing to a superficial burn.
11. Apply an appropriate splint to an injured extremity.

**Implementation.** The first-year goals can be accomplished via the following:

1. Attending a skills session that includes CPR, choking management, basic airway management, and general first aid.
2. Observing EM practice in the ED and/or emergency medical services system.

### SECOND YEAR

**Overall Goal.** The overall goal of the second-year curriculum is to integrate the basic concepts of clinical emergency care with the course work in pathology, pathophysiology, and pharmacology.

**Specific Goals.**

1. The student will become proficient in the basics of physical diagnosis with emphasis on the acutely ill or injured patient.
2. The student will demonstrate an understanding of the clinically important aspects of the anatomy, physiology, pathophysiology, and pharmacology of common cardiac, pulmonary, gastrointestinal, renal, reproductive, neurologic, immunologic, toxicologic, and environmental emergencies.
3. The student will be exposed to the skills necessary for basic airway management and IV access/phlebotomy.

**Objectives.**

1. Obtain a complaint-specific history and perform a focused physical examination on a patient.
2. Discuss the anatomy, physiology, pathophysiology, and pharmacology of the common emergencies detailed in the second-year curriculum (Table 2).
3. Perform bag–valve–mask ventilation on a mannequin.
4. Perform phlebotomy and establish IV access.

**Implementation.** The second-year goals can be accomplished by the following:

1. Teaching basic history taking and physical examination skills on ED patients.
2. Incorporating the anatomy, physiology, pathophysiology, and pharmacology of the common emergencies discussed in the second-year curriculum (Table 2).
3. Developing a basic skills laboratory that includes basic airway management, phlebotomy, and IV access.

TABLE 2. Second-year Emergency Medicine Curriculum

Pathophysiologic Process
Acute myocardial infarction, pulmonary embolism, pneumothorax
Asthma, pneumonia, emphysema, airway obstruction
Acute cholecystitis, diverticulitis, inflammatory bowel disease, perforated ulcer, gastrointestinal bleeding
Cerebrovascular accident, seizure, intracranial mass lesion
Acetaminophen, alcohol, salicylate, cyanide, tricyclic antidepressant toxicities
Bacterial infection, sepsis
Complications of pregnancy, threatened abortion, ectopic pregnancy, gynecologic malignancy
Spinal cord trauma
Delirium, psychosis

### THIRD YEAR

**Overall Goals.** The third-year EM curriculum should address the diagnosis and management of common emergencies with continued emphasis on basic procedural skills.

**Specific Goals.**

1. The student will be able to perform a directed history and perform a physical examination related to a patient’s chief complaint.
2. The student will begin to generate a differential diagnosis that addresses urgent and emergent conditions that are consistent with the history and physical examination.
3. The student will understand the hospital scope of care for the diseases listed in the third-year curriculum (Table 3), including the natural history, management, and complications.
4. The student will demonstrate proficiency in basic patient care and monitoring procedures.
5. The student will become proficient in basic wound management.

**Objectives.**

1. Perform a directed history and focused physical examination on a patient.
2. State the hospital scope of care of patients presenting with the common emergencies noted in the third-year curriculum (Table 3).
3. Perform a chin lift and jaw thrust maneuver.
4. Perform bag–valve–mask ventilation on a mannequin.
5. Insert oral and nasal airways on a mannequin.

TABLE 3. Third-year Emergency Medicine Curriculum

Disease Process
Acute myocardial infarction, pulmonary embolism, pneumothorax, musculoskeletal chest pain, pneumonia
Airway obstruction, acute respiratory failure, asthma, emphysema/chronic obstructive pulmonary disease, pulmonary edema, pulmonary embolism, pneumonia, epiglottitis
Acute cholecystitis, diverticulitis, inflammatory bowel disease, perforated ulcer/viscus, appendicitis, testicular torsion, urinary tract infection, ectopic pregnancy, nephrolithiasis, sexually transmitted diseases, bowel obstruction
Cerebrovascular accident, seizure, intracranial mass lesion, infection (meningitis), subarachnoid hemorrhage, coma
Ectopic pregnancy, threatened/complete/incomplete/inevitable abortion, placenta previa, placental abruption

- 6. Perform endotracheal intubation on a mannequin.
- 7. Place a patient on oxygen by nasal cannula and oxygen via mask.

- 8. Place a pulse oximeter and cardiac monitor on a patient.
- 9. Perform venous access and set up an IV infusion.
- 10. Perform phlebotomy.
- 11. Perform an arterial blood gas.
- 12. Insert a nasogastric tube and a Foley catheter.
- 13. Discuss the pharmacology of the local anesthetics.
- 14. Discuss various options for cleansing of wounds.
- 15. Perform basic suturing of a simple laceration.

**Implementation.** The third-year curriculum goals can be accomplished by:

- 1. Completing a one-week to two-week course in EM.
- 2. Attending didactic sessions emphasizing the common emergencies as noted in the third-year curriculum (Table 3).
- 3. Completing a procedure laboratory incorporating the procedures noted above.

TABLE 4. Fourth-year Emergency Medicine Curriculum

Patient Presentation	Disease Process
Acute chest pain	Acute myocardial infarction, pulmonary embolism, pneumothorax, musculoskeletal chest pain, pneumonia
Cardiac arrhythmia	Cardiac arrhythmia
Hypertension	Hypertensive urgencies and emergencies
Trauma	Traumatic injuries to the head, face, neck/spine, chest, abdomen, urogenital system, extremities
Shock	Septic shock, neurogenic shock, hemorrhagic shock, hypovolemic shock, cardiogenic shock
Gastrointestinal (GI) bleeding	Upper and lower GI bleeding
Abdominal pain	Acute cholecystitis, diverticulitis, inflammatory bowel disease, perforated ulcer-viscus, appendicitis, testicular torsion, urinary tract infection, ectopic pregnancy, nephrolithiasis, sexually transmitted diseases, bowel obstruction
Red eye/eye pain/visual impairment	Corneal diseases/injury, conjunctivitis, iritis, glaucoma, retinal artery/vein occlusion, retinal detachment, eye trauma
Shortness of breath	Airway obstruction, acute respiratory failure, asthma, emphysema/chronic obstructive pulmonary disease, pulmonary edema, pulmonary embolism, pneumothorax, pneumonia, epiglottitis
Complications of diabetes	Diabetic ketoacidosis, nonketotic hyperosmolar, coma, hypoglycemia
Vaginal bleeding	Ectopic pregnancy, threatened/complete/incomplete/inevitable abortion, placenta previa, placental abruption
Poisoning/overdose	Drug overdose, toxic exposure
Febrile illness	Bacterial illness, viral illness, sepsis
Environmental exposure	Burns, hyperthermia, hypothermia, drowning, electrical injuries, animal bites, anaphylaxis
Altered mental status/coma	Cerebrovascular accident, seizure, intracranial mass lesion, infection (meningitis), subarachnoid hemorrhage, coma
Musculoskeletal pain/injury	Sprains, strains, fractures, septic joints, dislocations
Abnormal behavior	Psychosis, delirium, dementia, suicidal and homicidal ideations



## FOURTH YEAR

**Overall Goal.** The fourth-year curriculum should develop the student's bedside skills, including diagnosis and management of life-threatening conditions in the undifferentiated patient.

**Specific Goals.**

1. The student will become involved in direct patient care in the ED with a representative mix of patients.
2. The student will solidify skills in history taking and physical examination with an emphasis on management and disposition.

**Objectives.**

1. Perform a history and physical examination,

develop a differential diagnosis, and develop a management/disposition plan for patients the student is caring for in the ED.

2. Discuss the differential diagnosis for the presenting complaints that are noted in the fourth-year curriculum (Table 4).
3. Discuss the management and disposition plan for the disease entities noted in the fourth-year curriculum (Table 4).

**Implementation.** Implementation of the fourth-year curriculum can be accomplished by:

1. Completing a four-week clinical rotation in EM.
2. Completing case conference material covering the topics noted in the fourth-year curriculum (Table 4).



## REFLECTIONS

## LP