The Model of the Clinical Practice of Emergency Medicine

Note from the Core Content Task Force II:

The Core Content Task Force II endorses The Model of the Clinical Practice of Emergency Medicine in its current version. However, the Task Force's endorsement does not extend to future documents resulting from this original work.

This article also appears in the June 2001 issue of Academic Emergency Medicine.

ACEP policy statement no. 4297. Also available at www.acep.org.

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0196-0644/2001/$35.00 + 0
47/1/115495
doi:10.1067/mem.2001.115495

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[Hockberger RS, Binder LS, Graber MA, Hoffman GL, Perina DG, Schneider SM, Sklar DP, Strauss RW, Viravec DR, Koenig WJ, Augustine JJ, Burdick WP, Henderson WV, Lawrence LL, Levy DB, McCall J, Parnell MA, Shoji KT. The model of the clinical practice of emergency medicine. *Ann Emerg Med.* June 2001;37:745-770.]

PREAMBLE

In 1975 the American College of Emergency Physicians and the University Association for Emergency Medicine (now the Society for Academic Emergency Medicine; SAEM) conducted a practice analysis of the emerging field of Emergency Medicine. This work resulted in the development of the current Core Content of Emergency Medicine, a listing of common conditions, symptoms, and diseases seen and evaluated in emergency departments. The Core Content listing has subsequently been revised 4 times, expanding from 5 to 20 pages. However, none of these revisions had the benefit of empirical analysis of the developing specialty but relied solely upon expert opinion.

Following the most recent revision of the Core Content listing in 1997, the contributing organizations felt that the list had become complex and unwieldy, and subsequently agreed to address this issue by commissioning a task force to reevaluate the Core Content listing and the process for revising the list. As part of its final set of recommendations, the Core Content Task Force recommended that the specialty undertake a practice analysis of the clinical practice of Emergency Medicine. Results of a practice analysis would provide an empirical foundation for content experts to develop a core document that would represent the needs of the specialty.

Following the completion of its mission, the Core Content Task Force recommended commissioning another task force that would be charged with the oversight of a practice analysis of the specialty—Core Content Task Force II. The practice analysis relied upon both

empirical data and the advice of several expert panels and resulted in *The Model of the Clinical Practice of Emergency Medicine* (Model). The Model resulted from the need for a more integrated and representative presentation of the Core Content of Emergency Medicine.

The Model was created through the collaboration of 6 organizations:

American Board of Emergency Medicine (ABEM)
American College of Emergency Physicians (ACEP)
Council of Emergency Medicine Residency Directors (CORD)
Emergency Medicine Residents' Association (EMRA)
Residency Review Committee for Emergency Medicine (RRC-EM)
Society for Academic Emergency Medicine (SAEM)

There are 3 components to the Model: (1) an assessment of patient acuity; (2) a description of the tasks that must be performed to provide appropriate emergency medical care; and (3) a listing of common conditions, symptoms, and disease presentations. Together these 3 components describe the clinical practice of Emergency Medicine and differentiate it from the clinical practice of other specialties. The Model represents essential information and skills necessary for the clinical practice of Emergency Medicine by board-certified emergency physicians.

Patients often present to the emergency department with signs and symptoms rather than a known disease or disorder. Therefore, an emergency physician's approach to patient care begins with the recognition of patterns in the patient's presentation that point to a specific diagnosis or diagnoses. Pattern recognition is both the hallmark and cornerstone of the clinical practice of Emergency Medicine, guiding the diagnostic tests and therapeutic interventions during the entire patient encounter.

The Model is designed for use as the core document for the specialty. It will provide the foundation for developing future medical school and residency curricula, certification examination specifications, continuing education objectives, research agendas, residency program review requirements, and other documents necessary for the functional operation of the specialty.

During the fall of 2000, each of the contributing organizations conducted a thorough review of the document, and ultimately endorsed the following version of the Model. The Task Force recommends that future revisions of this document be inputted, reviewed, and endorsed by the contributing organizations.

Robert S. Hockberger, MD
Chair, Core Content Task Force II
December 12, 2000

OVERVIEW

There are multiple components of The Model of the Clinical Practice of Emergency Medicine. The components of the Model are given in 2 complementary documents: (1) the Matrix, and (2) the Listing of Conditions and Components.

MATRIX

The Matrix is organized along 2 principal dimensions: Patient Acuity and Physician Tasks (Table 1). The Matrix represents all possible physician-patient interactions that are determined by patient acuity and the tasks that may be performed during a patient encounter. Patient acuity is most fundamental in determining the priority and sequence of tasks necessary to successfully manage the presenting patient. The Matrix represents how an emergency physician modifies the tasks necessary to perform appropriate patient care based on the patient acuity.

Patient Acuity

An emergency physician's frame of reference in a patient encounter is fundamentally related to the acuity of the patient's condition. Establishing the acuity level is essential for defining the context for action, the priorities of the patient encounter, and consequently, the order of

Table 1.
Matrix of physician tasks by patient acuity.

	Patient Acuity		
Physician Tasks	**Critical**	**Emergent**	**Lower Acuity**
Pre-hospital care			
Emergency stabilization			
Performance of focused history and physical examination			
Modifying factors			
Professional issues			
Diagnostic studies			
Diagnosis			
Therapeutic interventions			
Pharmacotherapy			
Observation and reassessment			
Consultation and disposition			
Prevention and education			
Documentation			
Multi-tasking and team management			

tasks necessary to manage the patient successfully. In The Model of the Clinical Practice of Emergency Medicine, patient acuity includes critical, emergent, and lower acuity (Table 2).

Physician Tasks

The physician tasks include the range of activities and the dynamic nature of the practice of Emergency Medicine (Table 3). Emergency physicians simultaneously consider multiple factors involved in patient care that may alter the direction of patient management. For example, the approach to the patient can change dramatically when considering a pediatric versus a geriatric presentation of the same complaint, ie, modifying factors. The physician tasks apply to patients of all ages. Although there are no separate sections on the care of pediatric or geriatric patients, users of the document should consider including pediatric and geriatric aspects of patient care related to each task. When considered together, these tasks are directly related to the broad competencies expected of board-certified emergency physicians.

Table 2.
Patient acuity definitions.

Critical	Emergent	Lower Acuity
Patient presents with symptoms of a life-threatening illness or injury with a high probability of mortality if immediate intervention is not begun to prevent further hemodynamic, airway, respiratory, and/or neurologic instability.	Patient presents with symptoms of an illness or injury that may progress in severity or result in complications with a high probability for morbidity if treatment is not begun quickly.	Patient presents with symptoms of an illness or injury that have a low probability of progression to more serious disease or development of complications.

Table 3.
Physician task definitions.

Pre-hospital care	Participate actively in pre-hospital care; provide direct patient care or online or offline medical direction or interact with pre-hospital medical providers; assimilate information from pre-hospital care into the assessment and management of the patient.
Emergency stabilization	Conduct primary assessment and take appropriate steps to stabilize and treat patients.
Performance of focused history and physical examination	Communicate effectively to interpret and evaluate the patient's symptoms and history; identify pertinent risk factors in the patient's history; provide a focused evaluation; interpret the patient's appearance, vital signs and condition; recognize pertinent physical findings; perform techniques required for conducting the exam.
Modifying factors	Recognize age, gender, ethnicity, barriers to communication, socioeconomic status, underlying disease, and other factors that may affect patient management.
Professional and legal issues	Understand and apply principles of professionalism, ethics, and legal concepts pertinent to patient management.
Diagnostic studies	Select and perform the most appropriate diagnostic studies and interpret the results.
Diagnosis	Develop a differential diagnosis and establish the most likely diagnoses in light of the history, physical, interventions, and test results.
Therapeutic interventions	Perform procedures and nonpharmacologic therapies and counsel.
Pharmacotherapy	Select appropriate pharmacotherapy, recognize pharmacokinetic properties, and anticipate drug interactions and adverse effects.
Observation and reassessment	Evaluate and reevaluate the effectiveness of a patient's treatment or therapy, including addressing complications and potential errors; monitor, observe, manage, and maintain the stability of one or more patients who are at different stages in their work-ups.
Consultation and disposition	Collaborate with physicians and other professionals to evaluate and treat patients, arrange appropriate placement and transfer if necessary, formulate a follow-up plan, and communicate effectively with patients, family, and involved health care members.
Prevention and education	Apply epidemiologic information to patients at risk; conduct patient education; select appropriate disease and injury prevention techniques.
Documentation	Communicate patient care information in a concise manner that facilitates quality care and coding.
Multi-tasking and team management	Prioritize multiple patients in the emergency department in order to provide optimal patient care; interact, coordinate, educate, and supervise all members of the patient management team; utilize appropriate hospital resources; have familiarity with disaster management.

Following is a concise example of how patient acuity and physician tasks can be applied to patients presenting with the same complaint of chest pain:

1. A 55-year-old hypertensive diabetic male with crushing chest pain, diaphoresis, and a blood pressure of 60 systolic who is clutching his chest.

Acuity Frame: Critical

Implications: Immediate intervention is necessary to manage and stabilize vital functions. High probability of mortality exists without immediate intervention.

2. A 74-year-old female with a history of angina presenting with 3 to 5 minutes of dull chest pain typical of her angina. She has stable vital signs and her pain is relieved by nitroglycerin.

Acuity Frame: Emergent

Implications: Initiation of monitoring, vascular access, evaluation, and treatment must be performed quickly. Progression in severity, complications, or morbidity may occur without immediate treatment.

3. A 12-year-old female with nontraumatic sharp chest pain lasting for several days that intensifies with movement of the torso.

Acuity Frame: Lower acuity

Implications: Patient's symptoms should be addressed promptly. However, progression to major complications would be unlikely.

LISTING OF CONDITIONS AND COMPONENTS

The Listing of Conditions and Components contains the fundamental, or core, patient conditions that present to emergency departments. The listing is based on data collected by the National Center for Health Statistics at the Centers for Disease Control and Prevention (CDC) during 1995-1996. The CDC data were collected from 40,000 emergency department records statistically representative of 90.3 million emergency department visits in metropolitan and nonmetropolitan short-stay or general hospitals in all 50 states and the District of Columbia. Frequency of occurrence was a primary factor in determining inclusion in the Listing of Conditions and Components. Frequency of occurrence, however, was not the sole determinant of inclusion nor was the number of entries pertaining to a single topic representative of importance. The final list was developed by several expert panels of practicing emergency physicians based on: (1) frequency of occurrence, (2) critical nature of patient presentation, and (3) basic organizational structure.

Appendix 1 outlines the diagnostic and/or therapeutic procedures or tests that are essential to the clinical practice of Emergency Medicine. Emergency physicians must know the indications for ordering, be able to perform, and be able to interpret the results of the listed items.

Appendix 2 lists the other essential components of Emergency Medicine practice. These include such items as administration; communication and interpersonal issues; research; and risk management, legal, and regulatory issues. Emergency physicians should have a basic knowledge of these components and be able to apply them to their clinical practice.

NOTE: The Listing of Conditions and Components is not intended to be comprehensive. It is intended to be representative of the most frequent conditions seen and those with the most serious implications for patients presenting to the emergency department.

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We thank the seven emergency physicians who assisted the Task Force in pilot testing the national survey used to validate this study. Their input to the process was extremely valuable. In addition, a very special thanks to the 1,084 ABEM diplomates who participated in the national survey during a very busy time of the year; their responses and comments were helpful in finalizing this document.

With special appreciation to Susan M. Dunsmore, administrative assistant, American Board of Emergency Medicine, for her careful and timely preparation of materials, attention to details, and shepherding of people throughout the complex process of developing "The Model."

LISTING OF CONDITIONS AND COMPONENTS.

1.0 Signs, Symptoms, and Presentations

		Critical	Emergent	Lower Acuity
1.1	General			
	Altered mental status	X	X	
	Anxiety			X
	Apnea	X		
	Ataxia		X	X
	Back pain	X	X	X
	Bleeding	X	X	X
	Coma	X		
	Confusion		X	
	Crying/Fussiness		X	X
	Cyanosis	X		
	Decreased level of consciousness	X	X	
	Dehydration	X	X	
	Dizziness		X	X
	Edema		X	X
	Failure to thrive		X	X
	Fatigue		X	X
	Feeding problems			X
	Fever	X	X	X
	Hypotension	X	X	
	Jaundice		X	
	Joint pain/Swelling		X	X
	Limp		X	X
	Lymphadenopathy			X
	Malaise		X	X
	Multiple trauma	X	X	
	Needle stick		X	X
	Pain	X	X	X
	Paralysis	X	X	
	Paresthesia/Dysthesia		X	X
	Poisoning	X	X	X
	Pruritus		X	X
	Rash	X	X	X
	Shock	X		
	SIDS (See 3.1)	X		
	Sleeping problems			X
	Syncope	X	X	X
	Tremor		X	X
	Weakness		X	X
	Weight loss		X	X
1.2	Abdominal			
	Abnormal vaginal bleeding	X	X	X
	Anuria		X	
	Ascites		X	X
	Colic		X	X
	Constipation			X
	Cramps		X	X
	Diarrhea		X	X
	Dysmenorrhea			X
	Dysuria			X
	Hematemesis	X	X	
	Hematochezia	X	X	X
	Hematuria		X	X
	Nausea/Vomiting		X	X
	Pain	X	X	X
	Pelvic pain		X	X
	Peritonitis	X	X	
	Rectal bleeding	X	X	X
	Rectal pain		X	X
	Urinary incontinence			X
	Urinary retention		X	
1.3	Chest			
	Chest pain	X	X	X
	Cough		X	X
	Dyspnea	X	X	
	Hemoptysis	X	X	
	Hiccough			X
	Palpitations	X	X	X
	Shortness of breath	X	X	
	Tachycardia	X	X	
	Wheezing	X	X	
1.4	Head and Neck			
	Congestion			X
	Diplopia		X	
	Dysphagia		X	X
	Eye pain		X	X
	Headache (See 12.3)	X	X	X
	Loss of hearing			X
	Loss of vision		X	
	Rhinorrhea			X
	Sore throat		X	X
	Stridor	X	X	
	Tinnitus			X
	Vertigo		X	X

2.0 Abdominal and Gastrointestinal Disorders

		Critical	Emergent	Lower Acuity
2.1	Abdominal Wall			
	Hernias		X	X
2.2	Esophagus			
	Infectious disorders			
	Candida (See 4.4, 7.5)		X	X
	Inflammatory disorders			
	Esophagitis		X	X
	Gastroesophageal reflux (GERD)			X
	Toxic effects of caustic (See 17.1)			
	Acid	X	X	
	Alkali	X	X	
	Motor abnormalities			
	Spasms			X
	Structural disorders			
	Boerhaave's syndrome	X	X	
	Diverticula		X	X
	Foreign body		X	
	Hernias		X	X
	Mallory-Weiss syndrome	X	X	
	Stricture and stenosis		X	X
	Tracheoesophageal fistula	X	X	
	Varices	X	X	
	Tumors		X	X
2.3	Liver			
	Cirrhosis		X	X
	Alcoholic		X	X
	Biliary obstructive		X	
	Drug-induced		X	X
	Hepato-renal failure	X	X	
	Infectious disorders		X	X
	Abscess		X	
	Hepatitis			
	Acute		X	X
	Chronic			X
	Tumors		X	X
2.4	Gall Bladder and Biliary Tract			
	Cholangitis	X	X	
	Cholecystitis		X	
	Cholelithiasis/ Choledocholithiasis		X	X
	Tumors		X	X
2.5	Pancreas			
	Pancreatitis	X	X	
	Tumors		X	X
2.6	Peritoneum			
	Spontaneous bacterial peritonitis	X	X	
2.7	Stomach			
	Infectious disorders			X
	Inflammatory disorders			
	Gastritis		X	X
	Peptic ulcer disease		X	X
	Hemorrhage	X	X	
	Perforation	X	X	
	Structural disorders			
	Congenital hypertrophic pyloric stenosis		X	
	Foreign body		X	X
	Tumors		X	X
2.8	Small Bowel			
	Infectious disorders		X	X
	Inflammatory disorders			
	Regional enteritis/ Crohn's disease		X	X
	Motor abnormalities			
	Obstruction		X	
	Paralytic ileus		X	
	Structural disorders			
	Aortoenteric fistula	X		
	Congenital anomalies		X	X
	Intestinal malabsorption		X	X
	Meckel's diverticulum		X	X
	Tumors		X	X
	Vascular insufficiency	X	X	
2.9	Large Bowel			
	Infectious disorders			
	Antibiotic associated		X	
	Bacterial		X	X
	Parasitic		X	X
	Viral		X	X
	Inflammatory disorders			
	Acute appendicitis		X	
	Necrotizing enterocolitis (NEC)	X	X	
	Radiation colitis		X	
	Ulcerative colitis		X	X
	Motor abnormalities			
	Hirschsprung's disease		X	X
	Irritable bowel			X
	Obstruction		X	

2.0 Abdominal and Gastrointestinal Disorders

	Critical	Emergent	Lower Acuity
Structural disorders			
Congenital anomalies		X	X
Diverticula		X	X
Intussusception	X	X	
Volvulus	X	X	
Tumors		X	X
2.10 Rectum and Anus			
Infectious disorders			
Perianal/Anal abscess		X	X
Perirectal abscess		X	
Pilonidal cyst and abscess		X	X
Inflammatory disorders			
Proctitis			X
Structural disorders			
Anal fissure			X
Anal fistula		X	X
Congenital anomalies			X
Foreign body		X	X
Hemorrhoids			X
Rectal prolapse		X	
Tumors		X	X

3.0 CARDIOVASCULAR DISORDERS

		Critical	Emergent	Lower Acuity
3.1	Cardiopulmonary Arrest	X		
	SIDS (See 1.1)	X		
3.2	Congenital Abnormalities of the Cardiovascular System			
	Disorders due to anatomic anomalies	X	X	X
	Genetically transmitted disorders	X	X	X
3.3	Disorders of Circulation			
	Arterial			
	Aneurysm	X	X	X
	Aortic dissection	X		
	Thromboembolism		X	
	Venous			
	Thromboembolism (See 16.6)	X	X	
3.4	Disturbances of Cardiac Rhythm			
	Cardiac dysrhythmias	X	X	X
	Ventricular	X	X	
	Supraventricular	X	X	X
	Conduction disorders	X	X	X
3.5	Diseases of the Myocardium, Acquired			
	Cardiac failure	X	X	
	Cor pulmonale	X	X	
	High output	X	X	
	Low output	X	X	
	Cardiomyopathy	X	X	X
	Hypertrophic	X	X	X
	Congestive heart failure	X	X	
	Coronary syndromes	X	X	
	Ischemic heart disease	X	X	
	Myocardial infarction	X	X	
	Myocarditis	X	X	X
	Ventricular aneurysm	X	X	X
3.6	Diseases of the Pericardium			
	Pericardial tamponade (See 18.1)	X	X	
	Pericarditis		X	X
3.7	Endocarditis	X	X	
3.8	Hypertensive Emergencies	X	X	
3.9	Tumors	X	X	
3.10	Valvular Disorders	X	X	X

4.0 CUTANEOUS DISORDERS

		Critical	Emergent	Lower Acuity
4.1	Cancers of the Skin			
	Basal cell			X
	Kaposi's sarcoma			X
	Melanoma			X
	Squamous cell			X
4.2	Decubitus Ulcer		X	X
4.3	Dermatitis			
	Atopic			X
	Contact			X
	Eczema			X
	Psoriasis			X
	Sebaceous cyst			X
	Seborrhea			X
4.4	Infections			
	Bacterial			
	Abscess		X	X
	Cellulitis		X	X
	Erysipelas		X	
	Impetigo			X
	Necrotizing infection	X	X	
	Fungal			
	Candida (See 2.2, 7.5)			X
	Tinea			X
	Parasitic			
	Pediculosis infestation			X
	Scabies			X
	Viral			
	Aphthous ulcers			X
	Erythema infectiosum			X
	Herpes simplex (See 10.6, 13.1)			X
	Herpes zoster (See 10.6)		X	X
	Human papillomavirus (HPV) (See 13.1)			X
	Molluscum contagiosum			X
	Warts			X
4.5	Maculopapular Lesions			
	Erythema multiforme		X	X
	Erythema nodosum			X
	Henoch-Schönlein purpura (HSP)		X	
	Pityriasis rosea			X
	Purpura		X	X
	Urticaria		X	X
4.6	Papular/Nodular Lesions			
	Hemangioma/Lymphangioma			X
	Lipoma			X

		Critical	Emergent	Lower Acuity
4.7	Vesicular/Bullous Lesions			
	Pemphigus		X	
	Staphylococcal scalded skin syndrome	X	X	
	Stevens Johnson syndrome	X	X	
	Toxic epidermal necrolysis	X	X	

5.0 ENDOCRINE, METABOLIC, AND NUTRITIONAL DISORDERS

		Critical	Emergent	Lower Acuity
5.1	Acid-Base Disturbances			
	Metabolic or respiratory			
	Acidosis	X	X	
	Alkalosis	X	X	X
	Mixed acid-base balance disorder	X	X	
5.2	Adrenal Disease			
	Corticoadrenal insufficiency	X	X	
	Cushing's syndrome		X	X
5.3	Fluid and Electrolyte Disturbances			
	Calcium metabolism	X	X	X
	Fluid overload/Volume depletion	X	X	
	Hyperkalemia/Hypokalemia	X	X	X
	Hypernatremia/ Hyponatremia	X	X	X
	Magnesium metabolism		X	X
	Phosphorus metabolism		X	X
5.4	Glucose Metabolism			
	Diabetes mellitus			
	Type I	X	X	X
	Type II		X	X
	Complications in glucose metabolism			
	Diabetic ketoacidosis (DKA)	X	X	
	Hyperglycemia		X	X
	Hyperosmolar coma	X	X	
	Hypoglycemia	X	X	
	Systemic		X	X
5.5	Nutritional Disorders			
	Vitamin deficiencies			X
	Vitamin excess			X
	Wernicke-Korsakoff syndrome		X	
5.6	Parathyroid Disease		X	X
5.7	Pituitary Disorders		X	X
	Panhypopituitarism		X	
5.8	Thyroid Disorders			
	Hyperthyroidism	X	X	X
	Hypothyroidism		X	X
	Thyroiditis		X	X

		Critical	Emergent	Lower Acuity
5.9	Tumors of Endocrine Glands			
	Adrenal		X	X
	Pituitary		X	X
	Thyroid		X	X

6.0 ENVIRONMENTAL DISORDERS

		Critical	Emergent	Lower Acuity
6.1	Bites and Envenomation (See 18.1)			
	Arthropods		X	X
	Insects			X
	Spiders		X	X
	Mammals		X	X
	Marine organisms (See 17.1)	X	X	X
	Snakes	X	X	X
6.2	Dysbarism			
	Air embolism	X	X	
	Barotrauma	X	X	X
	Decompression syndrome	X	X	
6.3	Electrical Injury (See 18.1)	X	X	X
	Lightning	X	X	
6.4	High-Altitude Illness			
	Acute mountain sickness		X	X
	Barotrauma of ascent		X	X
	High-altitude cerebral edema	X	X	
	High-altitude pulmonary edema	X	X	
6.5	Submersion Incidents			
	Cold water immersion	X	X	
	Near drowning	X	X	
6.6	Temperature-Related Illness			
	Heat			
	Heat exhaustion		X	X
	Heat stroke	X		
	Cold			
	Frostbite		X	X
	Hypothermia	X	X	

7.0 HEAD, EAR, EYE, NOSE, THROAT DISORDERS

		Critical	Emergent	Lower Acuity
7.1	Ear			
	Foreign body		X	X
	Impacted cerumen			X
	Labyrinthitis			X
	Mastoiditis		X	
	Meniere's disease			X
	Otitis externa			X
	Infective			X
	Malignant		X	
	Otitis media		X	X
	Perforated tympanic membrane (See 18.1)			X
7.2	Eye			
	External eye			
	Blepharitis			X
	Burn confined to eye and adnexa (See 18.1)		X	
	Conjunctivitis			X
	Corneal abrasions (See 18.1)		X	X
	Dacryocystitis		X	X
	Disorders of lacrimal system			X
	Foreign body		X	X
	Inflammation of the eyelids			X
	Chalazion			X
	Hordeolum			X
	Anterior pole			
	Glaucoma		X	X
	Hyphema (See 18.1)		X	X
	Iritis (See 18.1)		X	X
	Posterior pole			
	Choroiditis/Chorioretinitis		X	
	Optic neuritis		X	
	Papilledema	X	X	
	Retinal detachments and defects (See 18.1)		X	
	Retinal vascular occlusion		X	
	Orbit			
	Cellulitis			
	Preseptal		X	
	Postseptal		X	
	Purulent endophthalmitis		X	
7.3	Cavernous Sinus Thrombosis	X	X	
7.4	Nose			
	Epistaxis	X	X	X
	Foreign body		X	X
	Rhinitis			X
	Sinusitis			X
7.5	Oropharynx/Throat			
	Dentalgia			X
	Diseases of the oral soft tissue			
	Ludwig's angina	X	X	
	Stomatitis			X
	Diseases of the salivary glands			
	Sialolithiasis		X	X
	Suppurative parotitis		X	
	Foreign body	X	X	
	Gingival and periodontal disorders			
	Gingivostomatitis			X
	Larynx/Trachea			
	Epiglottitis (See 16.1)	X	X	
	Laryngitis			X
	Tracheitis		X	X
	Oral candidiasis (See 2.2, 4.4)			X
	Periapical abscess		X	X
	Peritonsillar abscess		X	
	Pharyngitis/Tonsillitis			X
	Retropharyngeal abscess	X	X	
	Temporomandibular joint disorders			X
7.6	Tumors		X	X

8.0 HEMATOLOGIC DISORDERS

		Critical	Emergent	Lower Acuity
8.1	Blood Transfusion Complications	X	X	
8.2	Hemostatic Disorders			
	Coagulation defects	X	X	X
	Acquired	X	X	X
	Hemophilias	X	X	X
	Disseminated intravascular coagulation	X		
	Platelet disorders	X	X	X
	Thrombocytopenia		X	X
8.3	Lymphomas		X	X
8.4	Pancytopenia	X	X	
8.5	Red Blood Cell Disorders			
	Anemias			
	Aplastic	X	X	
	Hemoglobinopathies		X	X
	Sickle cell disease		X	X
	Hemolytic		X	
	Hypochromic			
	Iron deficiency		X	X
	Megaloblastic		X	X
	Polycythemia		X	X
	Methemoglobinemia (See 17.1)	X	X	
8.6	White Blood Cell Disorders			
	Leukemia		X	X
	Multiple myeloma		X	X

9.0 IMMUNE SYSTEM DISORDERS

		Critical	Emergent	Lower Acuity
9.1	Collagen Vascular Disease			
	Raynaud's disease			X
	Reiter's syndrome		X	X
	Rheumatoid arthritis (See 11.3)		X	X
	Scleroderma		X	X
	Systemic lupus erythematosus		X	X
	Vasculitis		X	X
9.2	HIV and Manifestations (See 10.6)	X	X	X
9.3	Hypersensitivity			
	Allergic reaction		X	X
	Anaphylaxis	X		
	Angioedema	X	X	
	Drug allergies	X	X	X
9.4	Kawasaki Syndrome		X	
9.5	Sarcoidosis		X	X
9.6	Transplant-Related Problems	X	X	X
	Immunosuppression		X	X
	Rejection	X	X	

10.0 SYSTEMIC INFECTIOUS DISORDERS

		Critical	Emergent	Lower Acuity
10.1	Bacterial			
	Bacterial food poisoning		X	X
	Botulism	X	X	
	Chlamydia		X	X
	Gonococcal infections		X	X
	Meningococcemia	X	X	
	Mycobacterial infections			
	Atypical mycobacteria		X	X
	Tuberculosis		X	X
	Other bacterial diseases	X	X	
	Gas gangrene (See 11.6)	X	X	
	Sepsis/Bacteremia	X	X	
	Shock	X		
	Systemic inflammatory response syndrome (SIRS)	X	X	
	Toxic shock syndrome	X	X	
	Spirochetes			
	Syphilis		X	X
	Tetanus	X	X	
10.2	Biologic Weapons	X	X	
10.3	Fungal Infections		X	X
10.4	Protozoan - Parasites			
	Malaria		X	
	Toxoplasmosis		X	X
10.5	Tick-Borne			
	Ehrlichiosis		X	
	Lyme disease		X	
	Rocky Mountain spotted fever		X	
10.6	Viral		X	X
	Infectious mononucleosis		X	X
	Influenza/Parainfluenza		X	X
	Hantavirus	X	X	
	Herpes simplex (See 4.4, 13.1)		X	X
	Herpes zoster/Varicella (See 4.4)		X	X
	HIV (See 9.2)	X	X	X
	Rabies	X		
	Roseola			X
	Rubella			X

11.0 MUSCULOSKELETAL DISORDERS (NONTRAUMATIC)

	Critical	Emergent	Lower Acuity
11.1 Bony Abnormalities			
Aseptic necrosis of hip		X	X
Osteomyelitis		X	
Tumors		X	X
11.2 Disorders of the Spine			
Disc disorders		X	X
Inflammatory spondylopathies		X	X
Low back pain			
Cauda equina syndrome (See 18.1)		X	
Sacroiliitis			X
Sprains/Strains			X
11.3 Joint Abnormalities			
Arthritis			
Septic		X	
Gout		X	X
Rheumatoid (See 9.1)			X
Juvenile			X
Osteoarthrosis			X
Congenital dislocation of the hip		X	X
Slipped capital femoral epiphysis		X	
11.4 Muscle Abnormalities			
Myalgia/Myositis			X
Rhabdomyolysis	X	X	
11.5 Overuse Syndromes			
Bursitis			X
Muscle strains			X
Peripheral nerve syndrome			X
Carpal tunnel syndrome			X
Tendonitis			X
11.6 Soft Tissue Infections			
Fasciitis		X	
Felon		X	
Gangrene (See 10.1)	X	X	
Paronychia		X	X
Synovitis/Tenosynovitis		X	X

12.0 NERVOUS SYSTEM DISORDERS

	Critical	Emergent	Lower Acuity
12.1 Cranial Nerve Disorders			X
Bell's palsy			X
Trigeminal neuralgia			X
12.2 Demyelinating Disorders	X	X	
Multiple sclerosis		X	X
12.3 Headache (See 1.4)	X	X	X
Muscle contraction			X
Vascular		X	X
12.4 Hydrocephalus		X	X
Normal pressure		X	X
VP shunt		X	
12.5 Infections/Inflammatory Disorders			
Encephalitis	X	X	
Intracranial and intraspinal abscess	X	X	
Meningitis			
Bacterial	X	X	
Viral		X	X
Myelitis		X	
Neuralgia/Neuritis			X
12.6 Movement Disorders		X	X
Dystonic reaction		X	X
12.7 Neuromuscular Disorders			
Guillain-Barré syndrome	X	X	
Myasthenia gravis	X	X	
12.8 Other Conditions of the Brain			
Dementia (See 14.5)			X
Parkinson's disease			X
Pseudotumor cerebri		X	X
12.9 Seizure Disorders	X	X	X
Febrile		X	X
Neonatal		X	
Status epilepticus	X		
12.10 Spinal Cord Compression	X	X	
12.11 Stroke			
Hemorrhagic			
Intracerebral	X	X	
Subarachnoid	X	X	
Ischemic			
Embolic	X	X	
Thrombotic	X	X	
12.12 Transient Cerebral Ischemia		X	X
12.13 Tumors		X	X

13.0 OBSTETRICS AND GYNECOLOGY

	Critical	Emergent	Lower Acuity
13.1 Female Genital Tract			
Cervix			
Cervicitis and endocervicitis		X	X
Tumors			X
Infectious disorders			
Pelvic inflammatory disease		X	
Fitz-Hugh-Curtis syndrome		X	
Tubo-ovarian abscess		X	
Lesions			
Herpes simplex (See 4.4, 10.6)			X
Human papillomavirus (HPV) (See 4.4)			X
Ovary			
Cyst			X
Torsion		X	
Tumors		X	X
Uterus			
Dysfunctional bleeding		X	X
Endometriosis			X
Prolapse			X
Tumors		X	X
Gestational trophoblastic disease		X	
Leiomyoma			X
Vagina and vulva			
Bartholin's abscess		X	
Foreign body		X	X
Vaginitis/Vulvovaginitis			X
13.2 Normal Pregnancy			X
13.3 Complications of Pregnancy			
Abortion		X	
Ectopic pregnancy	X	X	
Hemolysis, elevated liver enzymes, low platelets (HELLP) syndrome	X	X	
Hemorrhage, antepartum			
Abruptio placentae (See 18.2)	X	X	
Placenta previa	X	X	
Hyperemesis gravidarum		X	X
Hypertension complicating pregnancy		X	X
Eclampsia	X	X	
Preeclampsia		X	
Infections		X	
Rh isoimmunization		X	
13.4 High Risk Pregnancy	X	X	
13.5 Normal Labor and Delivery		X	X
13.6 Complications of Labor			
Fetal distress	X		
Premature labor (See 18.2)		X	
Premature rupture of membranes		X	
Rupture of uterus (See 18.2)	X		
13.7 Complications of Delivery			
Malposition of fetus	X	X	
Nuchal cord	X		
Prolapse of cord	X		
13.8 Postpartum Complications			
Endometritis		X	
Hemorrhage	X	X	
Mastitis		X	X

14.0 PSYCHOBEHAVIORAL DISORDERS

	Critical	Emergent	Lower Acuity
14.1 Addictive Behavior			
Alcohol dependence			X
Drug dependence			X
Eating disorders		X	X
Substance abuse			X
14.2 Mood Disorders and Thought Disorders			
Acute psychosis	X	X	
Bipolar disorder		X	X
Depression		X	X
Suicidal risk	X	X	
Grief reaction			X
Schizophrenia		X	X
14.3 Factitious Disorders			
Drug-seeking behavior			X
Munchausen syndrome/ Munchausen by proxy		X	X
14.4 Neurotic Disorders			
Anxiety/Panic			X
Obsessive compulsive			X
Phobic			X
Post-traumatic stress			X
14.5 Organic Psychoses			
Chronic organic psychotic conditions			X
Alcoholic psychoses		X	X
Drug psychoses		X	X
Delirium		X	
Dementia (See 12.8)			X
Intoxication and/or withdrawal (See 17.1)			
Alcohol		X	X
Hallucinogens		X	X
Opioids	X	X	X
Phencyclidine		X	
Sedatives/Hypnotics/ Anxiolytics	X	X	X
Sympathomimetics and cocaine	X	X	X
14.6 Patterns of Violence/Abuse/Neglect			
Domestic			
Child, spouse, elder		X	
Homicidal risk	X	X	
Sexual assault	X	X	
Staff/Patient safety		X	
14.7 Personality Disorders			X

	Critical	Emergent	Lower Acuity
14.8 Psychosomatic Disorders			
Hypochondriasis			X
Hysteria/Conversion			X

15.0 RENAL AND UROGENITAL DISORDERS

		Critical	Emergent	Lower Acuity
15.1	Acute and Chronic Renal Failure	X	X	X
15.2	Complications of Renal Dialysis	X	X	
15.3	Glomerular Disorders			
	Glomerulonephritis		X	X
	Nephrotic syndrome		X	X
15.4	Infection			
	Cystitis			X
	Pyelonephritis		X	
	Urinary tract infection (UTI)			X
15.5	Male Genital Tract			
	Genital lesions			X
	Hernias		X	X
	Inflammation/Infection			
	Balanitis/Balanoposthitis		X	X
	Epididymitis/Orchitis		X	X
	Gangrene of the scrotum (Fournier's gangrene)	X	X	
	Prostatitis		X	X
	Urethritis			X
	Structural			
	Paraphimosis/Phimosis		X	
	Priapism		X	
	Prostatic hypertrophy (BPH)			X
	Torsion of testis		X	
	Testicular masses			X
	Tumors			
	Prostate			X
	Testis			X
15.6	Nephritis		X	X
	Hemolytic uremic syndrome		X	
15.7	Structural Disorders			
	Calculus of urinary tract		X	X
	Obstructive uropathy		X	
	Polycystic kidney disease			X
15.8	Tumors			X

16.0 THORACIC-RESPIRATORY DISORDERS

	Critical	Emergent	Lower Acuity
16.1 Acute Upper Airway Disorders			
Infections			
Croup		X	
Epiglottitis (See 7.5)	X	X	
Pertussis/Whooping cough	X	X	
Upper respiratory infection			X
Obstruction	X		
Tracheostomy/ Complications	X	X	
16.2 Disorders of Pleura, Mediastinum, and Chest Wall			
Costochondritis			X
Mediastinitis	X	X	
Pleural effusion		X	X
Pleuritis			X
Pneumomediastinum		X	
Pneumothorax (See 18.1)			
Simple		X	
Tension	X		
16.3 Noncardiogenic Pulmonary Edema	X	X	
16.4 Obstructive/Restrictive Lung Disease			
Asthma/Reactive airway disease	X	X	
Bronchitis and bronchiolitis		X	X
Bronchopulmonary dysplasia		X	X
Chronic obstructive pulmonary disease	X	X	X
Cystic fibrosis	X	X	X
Environmental/Industrial exposure	X	X	X
Foreign body	X	X	
16.5 Physical and Chemical Irritants/Insults			
Pneumoconiosis		X	X
Toxic effects of gases, fumes, vapors (See 18.1)	X	X	X
16.6 Pulmonary Embolism/Infarct			
Septic emboli	X	X	
Venous thromboembolism (See 3.3)	X	X	

	Critical	Emergent	Lower Acuity
16.7 Pulmonary Infections			
Lung abscess		X	
Pneumonia			
Aspiration	X	X	
Atypical		X	
Bacterial	X	X	
Chlamydia		X	
Fungal	X	X	
Mycoplasmal		X	X
Viral	X	X	X
Pulmonary tuberculosis		X	
16.8 Tumors			
Breast			X
Chest wall			X
Pulmonary		X	X

17.0 TOXICOLOGIC DISORDERS

	Critical	Emergent	Lower Acuity
17.1 Drug and Chemical Classes			
Analgesics			
Acetaminophen		X	
Nonsteroidal anti-inflammatories (NSAIDS)		X	X
Opiates and related narcotics	X	X	
Salicylates	X	X	
Alcohol			
Ethanol	X	X	X
Glycol	X	X	
Isopropyl	X	X	X
Methanol	X	X	
Anesthetics	X	X	
Anticholinergics/ Cholinergics	X	X	
Anticoagulants	X	X	
Anticonvulsants	X	X	
Antidepressants	X	X	
Antiparkinsonism drugs		X	
Antihistamines and antiemetics		X	
Antipsychotics	X	X	
Bronchodilators		X	
Carbon monoxide	X	X	
Cardiovascular drugs			
Antiarrhythmics	X	X	
Antihypertensives	X	X	
Beta blockers	X	X	
Calcium channel blockers	X	X	
Caustic agents			
Acid	X	X	
Alkali	X	X	
Cocaine	X	X	X
Cyanides, hydrogen sulfide	X	X	
Hallucinogens		X	X
Hazardous materials	X	X	
Heavy metals	X	X	
Herbicides, insecticides, and rodenticides	X	X	
Household/Industrial chemicals	X	X	X
Hormones/Steroids		X	X
Hydrocarbons	X	X	
Hypoglycemics/Insulin	X	X	
Inhaled toxins	X	X	
Iron	X	X	
Isoniazid	X	X	
Marine toxins (See 6.1)	X	X	X
Methemoglobinemia (See 8.5)	X	X	
Mushrooms/Poisonous plants	X	X	
Neuroleptics	X	X	
Non-prescription drugs		X	X
Organophosphates	X	X	
Recreational drugs	X	X	X
Sedatives/Hypnotics	X	X	
Stimulants/ Sympathomimetics	X	X	
Strychnine	X	X	

18.0 TRAUMATIC DISORDERS

	Critical	Emergent	Lower Acuity
18.1 Trauma			
Abdominal trauma			
Diaphragm	X	X	
Hollow viscus	X	X	
Penetrating	X	X	
Retroperitoneum	X	X	
Solid organ	X	X	
Vascular	X	X	
Chest trauma			
Aortic dissection/ Disruption	X		
Contusion			
Cardiac	X	X	X
Pulmonary	X	X	
Fracture			
Clavicle		X	X
Ribs/Flail chest	X	X	X
Sternum		X	X
Hemothorax	X	X	
Penetrating chest trauma	X	X	
Pericardial tamponade (See 3.6)	X		
Pneumothorax (See 16.2)			
Simple		X	
Tension	X		
Cutaneous injuries			
Avulsions		X	X
Bite wounds (See 6.1)		X	X
Burns			
Electrical (See 6.3)	X	X	X
Chemical (See 16.5)	X	X	X
Thermal	X	X	X
Lacerations		X	X
Puncture wounds		X	X
Facial fractures			X
Dental		X	X
Le Fort	X	X	X
Mandibular		X	X
Orbital		X	X
Genitourinary trauma			
Bladder		X	
External genitalia		X	
Renal		X	X
Ureteral		X	
Head trauma			
Intracranial injury	X	X	
Scalp lacerations/ Avulsions		X	X
Skull fractures		X	X
Injuries of the spine			
Dislocations/Subluxations	X	X	
Fractures	X	X	X
Sprains/Strains			X
Lower extremity bony trauma			
Dislocations/Subluxations		X	
Fractures (open and closed)		X	X
Neck trauma			
Laryngotracheal injuries	X	X	
Penetrating neck trauma	X	X	
Vascular injuries			
Carotid artery	X	X	
Jugular vein	X	X	
Ophthalmologic trauma			
Corneal abrasions/ Lacerations (See 7.2)		X	X
Corneal burns			
Acid		X	
Alkali		X	
Ultraviolet		X	X
Eyelid lacerations		X	
Foreign body		X	
Hyphema (See 7.2)		X	
Lacrimal duct injuries		X	
Penetrating globe injuries		X	
Retinal detachments (See 7.2)		X	
Traumatic iritis (See 7.2)		X	X
Otologic trauma			
Hematoma		X	X
Perforated tympanic membrane (See 7.1)			X
Pediatric fractures			
Epiphyseal		X	X
Greenstick		X	
Torus			X
Pelvic fracture	X	X	
Soft-tissue extremity injuries			
Amputations/Replantation		X	
Compartment syndromes		X	
High-pressure injection		X	
Injuries to joints		X	X
Knee		X	X
Penetrating		X	

18.0 TRAUMATIC DISORDERS

	Critical	Emergent	Lower Acuity
Penetrating soft-tissue		X	X
Periarticular			X
Sprains and strains			X
Tendon injuries			
Lacerations/Transections		X	
Ruptures		X	
Achilles tendon		X	
Patellar tendon		X	
Spinal cord and nervous system trauma			
Cauda equina syndrome (See 11.2)		X	
Injury to nerve roots		X	X
Peripheral nerve injury		X	X
Spinal cord injury	X	X	
Spinal cord injury without radiologic abnormality (SCIWORA)		X	
Upper extremity bony trauma			
Dislocations/Subluxations		X	
Fractures (open and closed)		X	X
18.2 Trauma in Pregnancy			
Abruptio placentae (See 13.3)	X	X	
Perimortem C-section	X		
Premature labor (See 13.6)		X	
Rupture of uterus (See 13.6)	X		
18.3 Multi-system Trauma	X	X	
Blast injury	X	X	

APPENDIX 1.

Procedures and Skills Integral to the Practice of Emergency Medicine.

Airway Techniques
Airway adjuncts
Cricothyrotomy
Heimlich maneuver
Intubation
1. Nasotracheal
2. Orotracheal
3. Rapid sequence

Mechanical ventilation
Percutaneous transtracheal ventilation

Anesthesia
Local
Regional nerve block
Sedation—analgesia for procedures

Blood and Component Therapy Administration

Diagnostic Procedures
Anoscopy
Arthrocentesis
Bedside ultrasonography
Cystourethrogram
Lumbar puncture
Nasogastric tube
Paracentesis
Pericardiocentesis
Peritoneal lavage
Slit lamp examination
Thoracentesis
Tonometry

Genital/Urinary
Bladder catheterization
1. Foley catheter
2. Suprapubic

Testicular detorsion

Head and Neck
Control of epistaxis
1. Anterior packing
2. Cautery
3. Posterior packing/balloon placement

Laryngoscopy
Needle aspiration of peritonsillar abscess
Removal of rust ring
Tooth replacement

Hemodynamic Techniques
Arterial catheter insertion
Central venous access
1. Femoral
2. Jugular
3. Subclavian
4. Umbilical
5. Venous cutdown

Intraosseous infusion
Peripheral venous cutdown

Obstetrics
Delivery of newborn
1. Abnormal delivery
2. Normal delivery

Other Techniques
Excision of thrombosed hemorrhoids
Foreign body removal
Gastric lavage
Gastrostomy tube replacement
Incision/drainage
Pain management (See Anesthesia)
Physical restraints
Sexual assault examination
Trephination, nails
Wound closure techniques
Wound management

Resuscitation
Cardiopulmonary resuscitation (CPR)
Neonatal resuscitation

Skeletal Procedures
Fracture/Dislocation immobilization techniques
Fracture/Dislocation reduction techniques
Spine immobilization techniques

Thoracic
Cardiac pacing
1. Cutaneous
2. Transvenous

Defibrillation/Cardioversion
Thoracostomy
Thoracotomy

Universal Precautions

APPENDIX 2.

Other Components of the Practice of Emergency Medicine.

ADMINISTRATION

Contract Principles
Analysis of Clauses and Components
Employment versus Independent Contractor
Negotiation
Financial Issues
Budget and Planning
Cost Containment
Reimbursement Issues Billing and Coding
Operations
Department Administration
Documentation
Facility Design
Human Resource Management
Information Management
Patient Throughput
Policies and Procedures
Safety and Security
Performance Improvement
Customer Satisfaction and Service
Error Reduction
Practice Guidelines
Pre-Hospital Care
Administration, Management and Operations
Credentialing of providers
Direct patient care
Multi-casualty Incidents
Performance Improvement
Protocol development
Professionalism
Death in ED
Ethics
Impairment
Leadership (Leading, Directing and Mentoring)
Personal Well-being
Professional Development and Learning
Systems-Based Management
Managed Care

COMMUNICATION AND INTERPERSONAL ISSUES
Complaint Management
Conflict Resolution
Interdepartmental and Medical Staff Relations
Team Building
Teaching

RESEARCH
Evidence-Based Medicine
Interpretation of Medical Literature
Performance of Research

RISK MANAGEMENT, LEGAL, AND REGULATORY ISSUES
Accreditation
Compliance
Confidentiality
Consent and Refusal of Care
Emergency Medical Treatment and Active Labor Act (EMTALA)
Liability and Malpractice
Reporting (Assault, Communicable Diseases,
National Practitioner Data Bank, etc)
Risk Management