2016 Model of the Clinical Practice of Emergency Medicine

The Core Content Task Force II created and endorsed the 2001 Model of the Clinical Practice of Emergency Medicine (EM Model) as published in the June 2001 Annals of Emergency Medicine and Academic Emergency Medicine.

The 2016 EM Model Review Task Force conducted the seventh review of the EM Model. Their work is built on the original 2001 EM Model and the subsequent four revisions. The 2016 EM Model is published online in the March 2017 *Journal of Emergency Medicine*.

All changes that resulted from the 2016 EM Model Review Task Force are summarized in Figure 1.

Preamble of the Core Content Task Force II, Adapted for the 2016 EM Model

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 Core Content of Emergency Medicine, a listing of common conditions, symptoms, and diseases seen and evaluated in emergency departments. The Core Content listing was subsequently revised four 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.

2016 EM Model Review Task Force

Francis L. Counselman, M.D., Chair
Kavita Babu, M.D.
Mary Ann Edens, M.D., MPH
Diane Gorgas, M.D.
Cherri Hobgood, M.D.
Catherine A. Marco, M.D.
Eric Katz, M.D.
Kevin Rodgers, M.D.
Leonard Stallings, M.D.
Michael C. Wadman, M.D.

2013 EM Model Review Task Force

Francis L. Counselman, M.D., Chair
Marc A Borenstein, M.D.
Carey D. Chisholm, M.D.
Michael L. Epter, D.O.
Sorabh Khandelwal, M.D.
Chadd K. Kraus, D.O., MPH
Samuel D. Luber, M.D., MPH
Catherine A. Marco, M.D.
Susan B. Promes, M.D.
Gillian Schmitz, M.D.

2011 EM Model Review Task Force

Debra G. Perina, M.D., Chair
Patrick Brunett, M.D
David A. Caro, M.D.
Douglas M. Char, M.D.
Carey D. Chisholm, M.D.
Francis L. Counselman, M.D.
Jonathan Heidt, M.D.
Samuel Keim, M.D., MS
O. John Ma, M.D.

2009 EM Model Review Task Force

Debra G. Perina, M.D., Chair
Michael S. Beeson, M.D
Douglas M. Char, M.D.
Francis L. Counselman, M.D.
Samuel Keim, M.D., MS
Douglas L. McGee, D.O.
Carlo Rosen, M.D.
Peter Sokolove, M.D.
Steve Tantama, M.D.

2007 EM Model Review Task Force

Harold A. Thomas, M.D., Chair
Michael S. Beeson, M.D
Louis S. Binder, M.D.
Patrick H. Brunett, M.D.
Merle A. Carter, M.D.
Carey D. Chisholm, M.D.
Douglas L. McGee, D.O.
Debra G. Perina, M.D.
Michael J. Tocci, M.D.

2005 EM Model Review Task Force

Harold A. Thomas, M.D., Chair
Louis S. Binder, M.D.
Dane M. Chapman, M.D., Ph.D.
David A. Kramer, M.D.
Joseph LaMantia, M.D.
Debra G. Perina, M.D.
Philip H. Shayne, M.D.
David P. Sklar, M.D.
Camie J. Sorensen, M.D., M.P.H.

2003 EM Model Review Task Force

Robert S. Hockberger, M.D., Chair
Louis S. Binder, M.D.
Carey D. Chisholm, M.D.
Jeremy T. Cushman, M.D.
Stephen R. Hayden, M.D.
David P. Sklar, M.D.
Susan A. Stern, M.D.
Robert W. Strauss, M.D.
Harold A. Thomas, M.D.
Diana R. Viravec, M.D.

Core Content Task Force II

Robert S. Hockberger, M.D., Chair
Louis S. Binder, M.D.
Mylissa A. Graber, M.D.
Gwendolyn L. Hoffman, M.D.
Debra G. Perina, M.D.
Sandra M. Schneider, M.D.
David P. Sklar, M.D.
Robert W. Strauss, M.D.
Diana R. Viravec, M.D.

Advisory Panel to the Task Force

William J. Koenig, M.D., Chair
James J. Augustine, M.D.
William P. Burdick, M.D.
Wilma V. Henderson, M.D.
Linda L. Lawrence, M.D.
David B. Levy, D.O.
Jane McCall, M.D.
Michael A. Parnell, M.D.
Kent T. Shoji, M.D.

Following the 1997 revision of the Core Content listing, 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 re-evaluate 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* (EM Model). The EM Model resulted from the need for a more integrated and representative presentation of the Core Content of Emergency Medicine. It was created through the collaboration of six 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)

As requested by Core Content Task Force II, the six collaborating organizations reviewed the 2001 EM Model in 2002-2003 and developed a small list of proposed changes to the document. The changes were reviewed and considered by 10 representatives from the organizations, i.e., the 2003 EM Model Review Task Force. The Task Force's recommendations were approved by the collaborating organizations and were incorporated into the EM Model. The work of the Task Force was published in the June 2005 *Annals of Emergency Medicine* and *Academic Emergency Medicine*.

The six collaborating organizations reviewed the 2002-2003 EM Model in 2005 and developed a small list of proposed changes to the document. The changes were reviewed and considered by nine representatives from the organizations, i.e., the 2005 EM Model Review Task Force. The Task Force's recommendations were approved by the collaborating organizations and were incorporated into the EM Model. The work of the Task Force was published in the October 2006 *Academic Emergency Medicine* and December 2006 *Annals of Emergency Medicine*.

The next regular review of the EM Model occurred in 2007. The 2007 EM Model Review Task Force recommendations were approved by the collaborating organizations and were incorporated into the EM Model. The work of the Task Force was published in the August 2008 *Academic Emergency Medicine* and online-only in the August 2008 *Annals of Emergency Medicine*.

The fourth review of the EM Model occurred in 2009. The 2009 EM Model Review Task Force recommendations were approved by the collaborating organizations and were incorporated into the EM Model. The work of the Task Force was published in the January 2011 *Academic Emergency Medicine* and online-only in *Annals of Emergency Medicine*.

The fifth review of the EM Model occurred in 2011. The 2011 EM Model Review Task Force recommendations were approved by the collaborating organizations and were incorporated into the EM Model. The work of the Task Force was published online-only in the July 2012 *Academic Emergency Medicine*.

The sixth review of the EM Model occurred in 2013, with the addition of a seventh collaborating organization, the American Academy of Emergency Medicine (AAEM). The 2013 EM Model Review Task Force recommendations were approved by the collaborating organizations and were incorporated into the EM Model. The work of the Task Force was published online-only in the May 2014 *Academic Emergency Medicine*.

In 2014, the collaborating organizations made the decision to review the EM Model on a three-year review cycle. The seventh review of the EM Model occurred in 2016. The 2016 EM Model Review Task Force recommendations were approved by the collaborating organizations and are incorporated into this document. The full 2016 EM Model was published online in the March 2017 *Journal of Emergency Medicine*.

There are three components to the EM 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 medical knowledge, patient care, and procedural skills. Together these three components describe the clinical practice of Emergency Medicine (EM) and differentiate it from the clinical practice of other specialties. The EM Model represents essential information and skills necessary for the clinical practice of EM 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 EM, guiding the diagnostic tests and therapeutic interventions during the entire patient encounter.

The Accreditation Council for Graduate Medical Education (ACGME) has implemented the ACGME Outcome Project to assure that physicians are appropriately trained in the knowledge and skills of their specialties. The ACGME derived six general (core) competencies thought to be essential for any practicing physician: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.[1] The six general competencies are an integral part of the practice of Emergency Medicine and are embedded into the EM Model. To incorporate these competencies into the specialty of EM, an Emergency Medicine Competency Task Force demonstrated how these competencies are integrated into the EM Model.[2]

The EM Model is designed for use as the core document for the specialty. It provides 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. In conjunction with the EM Model, these six core competencies construct a framework for evaluation of physician performance and curriculum design to further refine and improve the education and training of competent emergency physicians.

The 2016 review of the EM Model resulted in significant changes and clarifications, including a comprehensive review and revision of category 17, Toxicologic Disorders. This review emphasized integrating "clinical intuition" in the treatment of toxicologic emergencies into the document, focusing on what the practicing emergency physician needs to know. In addition, the Task Force attempted to bring the EM Model into alignment with the ABEM Knowledge, Skills, and Abilities (KSAs) document. The complete updated 2016 EM Model can be found on the websites of each of the seven collaborating organizations.

[1] Accreditation Council for Graduate Medical Education (ACGME). ACGME Core Competencies. (ACGME Outcome Project Website). Available at http://www.acgme.org/outcome/comp/compCPRL.asp

[2] Chapman DM, Hayden S, Sanders AB, et al. Integrating the Accreditation Council for Graduate Medical Education core competencies into The Model of the Clinical Practice of Emergency Medicine. Ann Emerg Med. 2004;43:756-769, and Acad Emerg Med. 2004;11:674-685.

Figure 1

Summary of 2016 EM Model Review Task Force Changes

Listed below are the changes approved by the seven collaborating organizations.

Changes to Table 1. Matrix of physician tasks by patient acuity

- Changed Disposition to Transitions of Care
- Added Patient-centered Communication Skills
- Added Prognosis

Changes to Table 3. Physician Task Definitions

- Changed definition of Performance of focused history and physical examination to read as follows:

  Performance of focused history and physical examination: Effectively 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.

- Changed definition of Pharmacotherapy to read as follows:

  Pharmacotherapy: Select, prescribe, and be aware of adverse effects of appropriate pharmaceutical agents based upon relevant considerations such as intended effect, financial considerations, possible adverse effects, patient preferences, institutional policies, and clinical guidelines; and monitor and intervene in the event of adverse effects in the ED.

- Changed title of Disposition to Transitions of care and edited definition to read as follows:

  Arrange for patient admission, discharge (including follow-up plan), observation, or transfer and transitions of care as appropriate, and communicate these arrangements effectively with patients, family, and involved healthcare team members.

- Added the following new physician task:

  Patient-centered communication skills: Establish rapport with and demonstrate empathy toward patients and their families; listen effectively to patients and their families.

- Added the following new physician task:

  Prognosis: Forecast the likely outcome of a medical disease or traumatic condition.

Changes to Table 4. Medical Knowledge, Patient Care, and Procedural Skills

Location	Description of Change
1.1	Changed Abnormal Vital Sign Physiology to Abnormal Vital Signs
1.1.5	Changed Apnea to Bradypnea/Apnea - added Emergent
1.2.8	Added Chronic pain - Lower
1.2.9	Added Extremity pain - Critical, Emergent, Lower
1.3.57	Added Toxidromes - Critical, Emergent, Lower
1.3.58	Added Sudden unexpected infant death (SUID) - Critical
2.2.2.3	Changed from Toxic effects of caustic to Toxic effects of caustic agents
2.3.3.2.1	Deleted Acute
2.3.3.2.2	Deleted Chronic
2.3.5	Added Hepatic encephalopathy - Critical, Emergent
2.6.2	Added Abdominal compartment syndrome - Critical, Emergent
2.7.6	Added Gastroparesis - Emergent, Lower
2.8.2.2	Added Gluten enteropathy - Lower
2.9.2.5	Added Neutropenic enterocolitis/Typhlitis - Critical, Emergent
2.12	Added Post-surgical Complications
2.12.1	Added Bariatric surgery - Critical, Emergent, Lower
2.12.2	Added Ostomy - Emergent, Lower
3.1.1	Deleted Sudden unexpected infant death (SUID)
3.1.2	Deleted Pulseless electrical activity
3.2.1	Added Tetralogy of Fallot spells - Critical, Emergent
3.2.2	Added Patent ductus arteriosus-dependent congenital heart anomalies - Critical, Emergent
3.3.1.2	Changed Aortic to Dissection
3.3.1.2.1	Added Aortic - Critical, Emergent, Lower
3.3.1.2.2	Added Non-aortic - Critical, Emergent, Lower
3.4.1.3	Add Pulseless electrical activity - Critical
3.11	Added Cardiovascular Devices
3.11.1	Added Pacemaker/Automatic implantable cardioverter-defibrillator (AICD) - Critical, Emergent, Lower
3.11.2	Added Left ventricular assist device (LVAD) - Critical, Emergent, Lower
4.2.3	Added Diabetic foot ulcers - Emergent, Lower

4.4.4.3	Changed Herpes simplex to Herpetic infections
4.4.4.4	Deleted Herpes zoster
4.5.7	Added Drug eruptions - Emergent, Lower
5.4.1.4	Added Insulin pump malfunction - Critical, Emergent, Lower
5.5.4	Added Malnutrition - Emergent, Lower
6.1.1.2	Changed Arachnida to Arachnids
6.5	Added Critical, Emergent, Lower
6.5.1	Deleted Cold water immersion
6.5.2	Deleted Near drowning
6.6.1.1	Deleted Heat exhaustion
6.6.1.2	Deleted Heat stroke
7.2.1.1	Deleted Blepharitis
7.2.1.5	Deleted Dacryocystitis
7.2.1.6	Added Disorders of the eyelids - Lower
7.2.1.8	Deleted Inflammation disorders of the eyelids
7.2.1.8.1	Deleted Chalazion
7.2.1.8.2	Deleted Hordeolum
7.2.4.1.2	Changed Postseptal to Septal/Orbital
7.2.4.2	Changed Purulent Endophthalmitis to Endophthalmitis
7.4.5.1	Deleted Gingivostomatitis
7.4.6.4	Added Tracheostomy complications - Critical, Emergent, Lower
8.2.3.2	Added Idiopathic thrombocytopenic purpura - Critical, Emergent, Lower
8.2.3.3	Added Thrombotic thrombocytopenic purpura - Critical, Emergent
8.5.1.2.1	Changed Sickle cell disease to Sickle cell anemia
8.7	Added Oncologic Emergencies - Critical, Emergent, Lower
9.1.2	Changed Reiter’s syndrome to Reactive Arthritis
9.4.1	Changed Kawasaki syndrome to Mucocutaneous lymph node syndrome (Kawasaki syndrome)
9.5	Added Medication-induced Immunosuppression - Critical, Emergent
9.5.1	Added Chemotherapeutic agents - Critical, Emergent
9.5.2	Added Steroids - Critical, Emergent
9.5.3	Added Targeted immune modulators - Critical, Emergent
10.1.7.2	Deleted Systemic inflammatory response syndrome (SIRS)

10.5.1	Changed Ehrlichiosis to Anaplasmosis (Ehrlichiosis)
10.6.3	Changed Hantavirus to Arbovirus
10.7	Changed Emerging Infections, Pandemics and Drug Resistance to Emerging Infections/ Pandemics - Added Lower
10.8	Added Drug Resistance - Critical, Emergent, Lower
11.1.4	Added Atypical fractures - Emergent, Lower
11.1.4.1	Added Osteoporotic - Emergent, Lower
11.1.4.2	Added Tumor-related - Emergent, Lower
11.1.4.3	Added Congenital disorders - Emergent, Lower
11.2.3	Added Radiculopathy - Emergent, Lower
11.2.4	Added Spinal stenosis - Emergent, Lower
11.2.5	Added Cervical pain - Critical, Emergent, Lower
11.2.6	Added Thoracic pain - Critical, Emergent, Lower
11.2.7	Added Lumbosacral pain - Critical, Emergent, Lower
11.2.7.3	Deleted Sprains/Strains
11.2.7.3	Added Sciatica - Emergent, Lower
11.3.1.6	Added Reactive arthritis - Emergent, Lower
11.3.4	Added Synovitis - Emergent, Lower
11.5.4	Changed Tendonitis to Tendinopathy
11.5.5	Added Stress reaction fracture - Emergent, Lower
11.6.5	Changed Synovitis/Tenosynovitis to Tenosynovitis
12.8.3	Changed Pseudotumor cerebri to Idiopathic intracranial hypertension
12.8.4	Added Cerebral venous sinus thrombosis - Critical, Emergent, Lower
12.8.5	Added Posterior reversible encephalopathy syndrome (PRES) - Critical, Emergent
12.9.1	Added Epileptiform - Critical, Emergent, Lower
12.9.1.3.1	Deleted Nonconvulsive
12.9.1.4	Added Nonconvulsive - Critical, Emergent
12.9.1.5	Added Drug-induced - Critical, Emergent
12.9.2	Added Nonepileptiform - Lower
12.14	Added Delirium - Emergent
12.14.1	Added Excited delirium syndrome - Critical, Emergent
13.1.5.1	Changed Dysfunctional bleeding to Abnormal bleeding
13.4.2	Added Pre-existing medical problems - Critical, Emergent, Lower

14.1	Changed Addictive Behavior to Substance Use Disorders
14.1.1	Changed Alcohol dependence to Alcohol use disorder
14.1.2	Deleted Drug dependence
14.1.2	Added Illicit drug use - Critical, Emergent, Lower
14.1.3	Deleted Eating disorders
14.1.3	Added Prescription drug use - Critical, Emergent, Lower
14.1.3.1	Added Drug diversion - Lower
14.1.4	Deleted Substance abuse
14.1.4	Added Tobacco use disorder - Lower
14.1.5	Deleted Tobacco dependence
14.1.5	Added Withdrawal syndromes - Critical, Emergent, Lower
14.5.2	Deleted Delirium
14.5.4	Deleted Intoxication and/or withdrawal
14.5.4.1	Deleted Alcohol
14.5.4.2	Deleted Hallucinogens
14.5.4.3	Deleted Opioids
14.5.4.4	Deleted Sedatives/Hypnotics/Anxiolytics
14.5.4.5	Deleted Sympathomimetics and cocaine
14.5.4.6	Deleted Anticholinergic
14.6.1.1	Changed Child, intimate partner, elder to Child
14.6.1.2	Added Intimate partner - Critical, Emergent, Lower
14.6.1.3	Added Elder - Critical, Emergent, Lower
14.6.5	Added Human trafficking - Emergent, Lower
15.4.3	Added Asymptomatic bacteriuria - Lower
16.1.2	Changed Obstruction to Obstruction/Foreign body
16.1.3	Deleted Tracheostomy/Complications
16.3	Changed Noncardiogenic Pulmonary Edema to Acute Respiratory Distress Syndrome
17.0	This category underwent revision and extensive reordering. The changes are too numerous to document using this format.
18.1.3.6	Added Nail injuries - Lower
18.1.4.6	Changed Zygomatic arch to Zygomaticomaxillary complex
18.1.6.1.1	Added Concussion - Emergent, Lower
18.1.6.1.2	Added Intracranial hemorrhage - Critical, Emergent

18.1.9.3.1	Deleted Carotid artery
18.1.9.3.2	Deleted Jugular vein
18.1.12.4	Added Apophyseal avulsion - Lower
18.1.14.8.2.1	Deleted Achilles tendon
18.1.14.8.2.2	Deleted Patellar tendon
18.2.2	Changed Perimortem C-section to Resuscitative hysterotomy
18.3.2	Added Falls - Critical, Emergent, Lower
18.3.3	Added Motor vehicle collision - Critical, Emergent, Lower
18.3.4	Added Assault - Critical, Emergent, Lower
19.2.4.1	Added Therapeutic hypothermia (or targeted temperature management)
19.2.8	Changed Intraosseous infusion to Intraosseous line placement
19.3.3	Changed Procedural sedation and analgesia to Procedural sedation
19.3.4	Added Analgesia
19.5	Added Ultrasound
19.5.1	Added Diagnostic ultrasound
19.5.2	Added Procedural ultrasound
19.6.3	Deleted Ultrasound
19.6.3.1	Deleted Diagnostic
19.6.3.2	Deleted Procedural
20.1.2.5	Changed Multicultural approach to ED patient to Cultural competency
20.3.1.3	Added Healthcare disparities
20.3.2.5	Added Stewardship of resources
20.4.3.4	Added Patient Satisfaction
20.4.4.1	Changed End-of-life and palliative care/Advance directives to End-of-life and palliative care
20.4.4.1.1	Added Advance directives
20.4.4.1.2	Added Coordination with hospice
20.4.4.1.3	Added Organ donation
20.4.4.2.1	Added Activities of daily living/functional assessment
20.4.5.3	Changed Confidentiality and HIPAA to Confidentiality and privacy
20.4.5.7	Added Good Samaritan emergency care
20.4.6.4	Added Error disclosure
20.4.6.5	Added Root cause analysis

Table 1. Matrix of physician tasks by patient acuity

	Patient Acuity		
Physician Tasks	**Critical**	**Emergent**	**Lower Acuity**
Prehospital care Emergency stabilization Performance of focused history and physical examination Modifying factors Professional issues Legal issues Diagnostic studies Diagnosis Therapeutic interventions Pharmacotherapy Observation and reassessment Consultation Transitions of Care Prevention and education Documentation Multiple patient care Team management Mass casualty/Disaster management Patient -centered communication skills Prognosis			

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 airway, respiratory, hemodynamic, 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

Prehospital care	Participate actively in prehospital care; provide direct patient care or on-line or off-line medical direction or interact with prehospital medical providers; assimilate information from prehospital 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	Effectively 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 issues	Understand and apply principles of professionalism and ethics pertinent to patient management.
Legal issues	Understand and apply legal concepts pertinent to the practice of EM.
Diagnostic studies	Select and perform the most appropriate diagnostic studies and interpret the results, e.g., electrocardiogram, emergency ultrasound, radiographic and laboratory tests**.**
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, prescribe, and be aware of adverse effects of appropriate pharmaceutical agents based upon relevant considerations such as intended effect, financial considerations, possible adverse effects, patient preferences, institutional policies, and clinical guidelines; and monitor and intervene in the event of adverse effects in the ED.
Observation and reassessment	Evaluate and re-evaluate 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	Collaborate with physicians and other professionals to help guide optimal management of patients.
Transitions of care	Arrange for patient admission, discharge (including follow-up plan), observation, or transfer and transitions of care as appropriate, and communicate these arrangements effectively with patients, family, and involved healthcare team 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 and appropriate manner that facilitates quality care and coding.
Multiple patient care	Prioritize and implement the evaluation and management of multiple patients in the emergency department, including handling interruptions and task-switching, in order to provide optimal patient care.
Team management	Coordinate, educate, or supervise members of the patient management team and utilize appropriate hospital resources.

Mass casualty/ Disaster management	Understand and apply the principles of disaster and mass casualty management including preparedness, triage, mitigation, response, and recovery.
Patient-centered communication skills	Establish rapport with and demonstrate empathy toward patients and their families; listen effectively to patients and their families.
Prognosis	Forecast the likely outcome of a medical disease or traumatic condition.

MEDICAL KNOWLEDGE, PATIENT CARE, AND PROCEDURAL SKILLS

As originally developed, the third dimension of the EM Model was called the Listing of Conditions and Components. The listing contained the fundamental conditions for which patients presented to emergency departments, and was 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 non-metropolitan 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 three factors: 1) frequency of occurrence; 2) critical nature of patient presentation; and 3) other components of EM practice.

The Listing of Conditions and Components also contained two appendices. Appendix 1 outlined the diagnostic and/or therapeutic procedures and tests considered essential to the clinical practice of Emergency Medicine. Appendix 2 listed the other essential components and core competencies of EM practice.

With each Task Force review, the Listing of Conditions and Components has evolved to maintain consistency with the current clinical practice of EM. In 2011, it was determined that the contents of the two appendices represented core components of EM knowledge, which, when combined with the Listing of Conditions and Components, encompassed the universe of knowledge that all practicing emergency physicians should possess. Consequently, the appendices were incorporated into the body of the document and the entire section was renamed Medical Knowledge, Patient Care, and Procedural Skills (Table 4). This change strengthened the inherent link between the EM Model and the ACGME six core competencies.

NOTE: The listing of Medical Knowledge, Patient Care, and Procedural Skills is not intended to be comprehensive. It is intended to be representative of the most frequent conditions seen, those with the most serious implications for patients presenting to the emergency department, and the core knowledge and skills required to provide safe and effective patient care.

Table 4. Medical Knowledge, Patient Care, and Procedural Skills

1.0 SIGNS, SYMPTOMS, AND PRESENTATIONS

	Critical	Emergent	Lower Acuity
1.1 Abnormal Vital Signs			
1.1.1 Hypothermia	X	X	X
1.1.2 Fever	X	X	X
1.1.3 Bradycardia	X	X	X
1.1.4 Tachycardia	X	X	
1.1.5 Bradypnea/Apnea	X	X	
1.1.6 Tachypnea	X	X	
1.1.7 Hypoxia	X	X	
1.1.8 Hypotension	X	X	
1.1.9 Hypertension	X	X	X
1.2 Pain			
1.2.1 Pain (unspecified)	X	X	X
1.2.2 Headache (See 12.3)	X	X	X
1.2.3 Eye pain		X	X
1.2.4 Chest pain	X	X	X
1.2.5 Abdominal pain	X	X	X
1.2.6 Pelvic pain	X	X	X
1.2.7 Back pain	X	X	X
1.2.8 Chronic pain			X
1.2.9 Extremity pain	X	X	X
1.3 General			
1.3.1 Altered mental status	X	X	X
1.3.2 Anuria		X	
1.3.3 Anxiety			X
1.3.4 Ascites		X	X
1.3.5 Ataxia		X	X
1.3.6 Auditory disturbances			X
1.3.7 Bleeding	X	X	X
1.3.8 Congestion/Rhinorrhea			X
1.3.9 Constipation			X
1.3.10 Cough		X	X
1.3.11 Crying/Fussiness		X	X
1.3.12 Cyanosis	X		
1.3.13 Dehydration	X	X	
1.3.14 Diarrhea		X	X
1.3.15 Dysmenorrhea			X
1.3.16 Dysphagia		X	X
1.3.17 Dysuria			X
1.3.18 Edema		X	X
1.3.19 Failure to thrive		X	X
1.3.20 Fatigue/Malaise		X	X
1.3.21 Feeding problems			X
1.3.22 Hematemesis	X	X	
1.3.23 Hematuria		X	X
1.3.24 Hemoptysis	X	X	

1.3.25	Hiccup			X
1.3.26	Jaundice		X	
1.3.27	Joint swelling		X	X
1.3.28	Lethargy	X	X	X
1.3.29	Lightheadedness/Dizziness		X	X
1.3.30	Limp		X	X
1.3.31	Lymphadenopathy			X
1.3.32	Mechanical and indwelling devices, complications	X	X	X
1.3.33	Nausea/Vomiting		X	X
1.3.34	Occupational exposure		X	X
1.3.35	Palpitations	X	X	X
1.3.36	Paralysis	X	X	
1.3.37	Paresthesia/Dysesthesia		X	X
1.3.38	Poisoning	X	X	X
1.3.39	Pruritus		X	X
1.3.40	Rash	X	X	X
1.3.41	Rectal bleeding	X	X	X
1.3.42	Shock	X		
1.3.43	Shortness of breath	X	X	
1.3.44	Sore throat		X	X
1.3.45	Stridor	X	X	
1.3.46	Syncope	X	X	X
1.3.47	Tinnitus			X
1.3.48	Tremor		X	X
1.3.49	Urinary incontinence			X
1.3.50	Urinary retention		X	
1.3.51	Vaginal bleeding	X	X	X
1.3.52	Vaginal discharge			X
1.3.53	Vertigo		X	X
1.3.54	Visual disturbances	X	X	X
1.3.55	Weakness		X	X
1.3.56	Wheezing	X	X	
1.3.57	Toxidromes	X	X	X
1.3.58	Sudden unexpected infant death (SUID)	X		

2.0 ABDOMINAL AND GASTROINTESTINAL DISORDERS

			Critical	Emergent	Lower Acuity
2.1	**Abdominal Wall**				
	2.1.1	Hernias		X	X
2.2	**Esophagus**				
	2.2.1	Infectious disorders			
		2.2.1.1 Candida (See 4.4.2.1, 7.4.7)		X	X
		2.2.1.2 Viral esophagitis		X	X
	2.2.2	Inflammatory disorders			
		2.2.2.1 Esophagitis		X	X
		2.2.2.2 Gastroesophageal reflux (GERD)			X
		2.2.2.3 Toxic effects of caustic agents (See 17.1.16.1)			
		2.2.2.3.1 Acid	X	X	
		2.2.2.3.2 Alkali	X	X	
	2.2.3	Motor abnormalities			
		2.2.3.1 Spasms			X
	2.2.4	Structural disorders			
		2.2.4.1 Boerhaave's syndrome	X	X	
		2.2.4.2 Diverticula		X	X
		2.2.4.3 Foreign body		X	
		2.2.4.4 Hernias		X	X
		2.2.4.5 Mallory-Weiss syndrome	X	X	
		2.2.4.6 Stricture and stenosis		X	X
		2.2.4.7 Tracheoesophageal fistula	X	X	
		2.2.4.8 Varices	X	X	
	2.2.5	Tumors		X	X
2.3	**Liver**				
	2.3.1	Cirrhosis		X	X
		2.3.1.1 Alcoholic		X	X
		2.3.1.2 Biliary obstructive		X	
		2.3.1.3 Drug-induced		X	X
	2.3.2	Hepatorenal failure	X	X	
	2.3.3	Infectious disorders		X	X
		2.3.3.1 Abscess		X	
		2.3.3.2 Hepatitis			
	2.3.4	Tumors		X	X
	2.3.5	Hepatic encephalopathy	X	X	
2.4	**Gall Bladder and Biliary Tract**				
	2.4.1	Cholangitis	X	X	
	2.4.2	Cholecystitis		X	
	2.4.3	Cholelithiasis/Choledocholithiasis		X	X
	2.4.4	Tumors		X	X
2.5	**Pancreas**				
	2.5.1	Pancreatitis	X	X	
	2.5.2	Tumors		X	X
2.6	**Peritoneum**				

2.6.1	Spontaneous bacterial peritonitis		X	X	
2.6.2	Abdominal compartment syndrome		X	X	
2.7	**Stomach**				
2.7.1	Infectious disorders				X
2.7.2	Inflammatory disorders				
	2.7.2.1	Gastritis		X	X
2.7.3	Peptic ulcer disease			X	X
	2.7.3.1	Hemorrhage	X	X	
	2.7.3.2	Perforation	X	X	
2.7.4	Structural disorders				
	2.7.4.1	Congenital hypertrophic pyloric stenosis		X	
	2.7.4.2	Foreign body		X	X
2.7.5	Tumors			X	X
2.7.6	Gastroparesis			X	X
2.8	**Small Bowel**				
2.8.1	Infectious disorders			X	X
2.8.2	Inflammatory disorders				
	2.8.2.1	Regional enteritis/Crohn's disease		X	X
	2.8.2.2	Gluten enteropathy			X
2.8.3	Motor abnormalities				
	2.8.3.1	Obstruction		X	
	2.8.3.2	Paralytic ileus		X	
2.8.4	Structural disorders				
	2.8.4.1	Aortoenteric fistula	X		
	2.8.4.2	Congenital anomalies		X	X
	2.8.4.3	Intestinal malabsorption		X	X
	2.8.4.4	Meckel's diverticulum		X	X
2.8.5	Tumors			X	X
2.8.6	Vascular insufficiency		X	X	
2.9	**Large Bowel**				
2.9.1	Infectious disorders				
	2.9.1.1	Antibiotic-associated		X	
	2.9.1.2	Bacterial		X	X
	2.9.1.3	Parasitic		X	X
	2.9.1.4	Viral		X	X
2.9.2	Inflammatory disorders				
	2.9.2.1	Appendicitis		X	
	2.9.2.2	Necrotizing enterocolitis (NEC)	X	X	
	2.9.2.3	Radiation colitis		X	
	2.9.2.4	Ulcerative colitis		X	X
	2.9.2.5	Neutropenic enterocolitis/Typhlitis	X	X	
2.9.3	Motor abnormalities				
	2.9.3.1	Hirschsprung's disease		X	X
	2.9.3.2	Irritable bowel			X
	2.9.3.3	Obstruction		X	
2.9.4	Structural disorders				
	2.9.4.1	Congenital anomalies		X	X
	2.9.4.2	Diverticula		X	X
	2.9.4.3	Intussusception	X	X	

	2.9.4.4	Volvulus	X	X	
2.9.5	Tumors			X	X
2.10	**Rectum and Anus**				
2.10.1	Infectious disorders				
	2.10.1.1	Perianal/Anal abscess		X	X
	2.10.1.2	Perirectal abscess		X	
	2.10.1.3	Pilonidal cyst and abscess		X	X
2.10.2	Inflammatory disorders				
	2.10.2.1	Proctitis			X
2.10.3	Structural disorders				
	2.10.3.1	Anal fissure			X
	2.10.3.2	Anal fistula		X	X
	2.10.3.3	Congenital anomalies			X
	2.10.3.4	Foreign body		X	X
	2.10.3.5	Hemorrhoids			X
	2.10.3.6	Rectal prolapse		X	
2.10.4	Tumors			X	X
2.11	**Spleen**				
2.11.1	Asplenism			X	X
2.11.2	Splenomegaly				X
2.11.3	Vascular insufficiency/Infarction		X	X	X
2.12	**Post-surgical Complications**				
2.12.1	Bariatric surgery		X	X	X
2.12.2	Ostomy			X	X

3.0 CARDIOVASCULAR DISORDERS

		Critical	Emergent	Lower Acuity
3.1	**Cardiopulmonary Arrest**	X		
3.2	**Congenital Abnormalities of the Cardiovascular System**	X	X	X
3.2.1	Tetralogy of Fallot spells	X	X	
3.2.2	Patent ductus arteriosus-dependent congenital heart anomalies	X	X	
3.3	**Disorders of Circulation**			
3.3.1	Arterial			
3.3.1.1	Aneurysm	X	X	X
3.3.1.2	Dissection	X		
3.3.1.2.1	Aortic	X	X	X
3.3.1.2.2	Non-aortic	X	X	X
3.3.1.3	Thromboembolism	X	X	
3.3.2	Venous			
3.3.2.1	Thromboembolism (See 16.6.2)	X	X	
3.4	**Disturbances of Cardiac Rhythm**			
3.4.1	Cardiac dysrhythmias	X	X	X
3.4.1.1	Ventricular	X	X	
3.4.1.2	Supraventricular	X	X	X
3.4.1.3	Pulseless electrical activity	X		
3.4.2	Conduction disorders	X	X	X
3.5	**Diseases of the Myocardium, Acquired**			
3.5.1	Cardiac failure	X	X	
3.5.1.1	Cor pulmonale	X	X	
3.5.1.2	High output	X	X	
3.5.1.3	Low output	X	X	
3.5.2	Cardiomyopathy	X	X	X
3.5.2.1	Hypertrophic	X	X	X
3.5.3	Congestive heart failure	X	X	
3.5.4	Coronary syndromes	X	X	
3.5.5	Ischemic heart disease	X	X	
3.5.6	Myocardial infarction	X	X	
3.5.7	Myocarditis	X	X	X
3.5.8	Ventricular aneurysm	X	X	X
3.6	**Diseases of the Pericardium**			
3.6.1	Pericardial tamponade (See 18.1.2.6)	X	X	
3.6.2	Pericarditis		X	X
3.7	**Endocarditis**	X	X	
3.8	**Hypertension**	X	X	X
3.9	**Tumors**	X	X	

3.10	**Valvular Disorders**	X	X	X
3.11	**Cardiovascular Devices**			
3.11.1	Pacemaker/Automatic implantable cardioverter-defibrillator (AICD)	X	X	X
3.11.2	Left ventricular assist device (LVAD)	X	X	X

4.0 CUTANEOUS DISORDERS

			Critical	Emergent	Lower Acuity
4.1	**Cancers of the Skin**				
	4.1.1	Basal cell			X
	4.1.2	Kaposi's sarcoma			X
	4.1.3	Melanoma			X
	4.1.4	Squamous cell			X
4.2	**Ulcerative Lesions**				
	4.2.1	Decubitus		X	X
	4.2.2	Venous stasis			X
	4.2.3	Diabetic foot ulcers		X	X
4.3	**Dermatitis**				
	4.3.1	Atopic			X
	4.3.2	Contact			X
	4.3.3	Eczema			X
	4.3.4	Psoriasis			X
	4.3.5	Seborrhea			X
4.4	**Infections**				
	4.4.1	Bacterial			
		4.4.1.1 Abscess		X	X
		4.4.1.2 Cellulitis		X	X
		4.4.1.3 Erysipelas		X	
		4.4.1.4 Impetigo			X
		4.4.1.5 Necrotizing infection	X	X	
	4.4.2	Fungal			
		4.4.2.1 Candida (See 2.2.1.1, 7.4.7)			X
		4.4.2.2 Dermatophytes			X
	4.4.3	Ectoparasites			X
	4.4.4	Viral			
		4.4.4.1 Aphthous ulcers			X
		4.4.4.2 Childhood exanthems (See 10.6.8, 10.6.9)			X
		4.4.4.3 Herpetic infections		X	X
		(See 10.6.4, 10.6.5, 13.1.3.1)			X
		4.4.4.4 Human papillomavirus (HPV) (See 13.1.3.2)			X
		4.4.4.5 Molluscum contagiosum			X
4.5	**Maculopapular Lesions**				
	4.5.1	Erythema multiforme		X	X
	4.5.2	Erythema nodosum			X
	4.5.3	Henoch-Schönlein purpura (HSP)		X	
	4.5.4	Pityriasis rosea			X
	4.5.5	Purpura		X	X
	4.5.6	Urticaria		X	X
	4.5.7	Drug eruptions		X	X
4.6	**Papular/Nodular Lesions**				

4.6.1	Hemangioma/Lymphangioma			X
4.6.2	Lipoma			X
4.6.3	Sebaceous cyst			X

4.7 **Vesicular/Bullous Lesions**

4.7.1	Pemphigus		X	
4.7.2	Staphylococcal scalded skin syndrome	X	X	
4.7.3	Stevens-Johnson syndrome	X	X	
4.7.4	Toxic epidermal necrolysis	X	X	
4.7.5	Bullous pemphigoid		X	X

5.0 ENDOCRINE, METABOLIC, AND NUTRITIONAL DISORDERS

			Critical	Emergent	Lower Acuity
5.1	**Acid-base Disturbances**				
	5.1.1	Metabolic or respiratory			
		5.1.1.1 Acidosis	X	X	
		5.1.1.2 Alkalosis	X	X	X
	5.1.2	Mixed acid-base balance disorder	X	X	
5.2	**Adrenal Disease**				
	5.2.1	Corticoadrenal insufficiency	X	X	
	5.2.2	Cushing's syndrome		X	X
5.3	**Fluid and Electrolyte Disturbances**				
	5.3.1	Calcium metabolism	X	X	X
	5.3.2	Fluid overload/Volume depletion	X	X	
	5.3.3	Potassium metabolism	X	X	X
	5.3.4	Sodium metabolism	X	X	X
	5.3.5	Magnesium metabolism		X	X
	5.3.6	Phosphorus metabolism		X	X
5.4	**Glucose Metabolism**				
	5.4.1	Diabetes mellitus			
		5.4.1.1 Type I	X	X	X
		5.4.1.2 Type II		X	X
		5.4.1.3 Complications in glucose metabolism			
		5.4.1.3.1 Diabetic ketoacidosis (DKA)	X	X	
		5.4.1.3.2 Hyperglycemia		X	X
		5.4.1.3.3 Hyperosmolar hyperglycemic state	X	X	
		5.4.1.3.4 Hypoglycemia	X	X	
		5.4.1.4 Insulin pump malfunction	X	X	X
5.5	**Nutritional Disorders**				
	5.5.1	Vitamin deficiencies			X
	5.5.2	Wernicke-Korsakoff syndrome		X	
	5.5.3	Malabsorption		X	X
	5.5.4	Malnutrition		X	X
5.6	**Parathyroid Disease**			X	X
5.7	**Pituitary Disorders**			X	X
	5.7.1	Panhypopituitarism		X	
5.8	**Thyroid Disorders**				
	5.8.1	Hyperthyroidism	X	X	X
	5.8.2	Hypothyroidism	X	X	X
	5.8.3	Thyroiditis		X	X
5.9	**Tumors of Endocrine Glands**				
	5.9.1	Adrenal		X	X

	5.9.1.1	Pheochromocytoma	X	X	
5.9.2	Pituitary			X	X
5.9.3	Thyroid			X	X

6.0 ENVIRONMENTAL DISORDERS

		Critical	Emergent	Lower Acuity
6.1	**Bites and Envenomation** (See 18.1.3.2)			
6.1.1	Arthropods		X	X
6.1.1.1	Insects			X
6.1.1.2	Arachnids		X	X
6.1.2	Mammals		X	X
6.1.3	Marine organisms (See 17.1.20)	X	X	X
6.1.4	Reptiles	X	X	X
6.2	**Dysbarism**			
6.2.1	Air embolism	X	X	
6.2.2	Barotrauma	X	X	X
6.2.3	Decompression syndrome	X	X	
6.3	**Electrical Injury** (See 18.1.3.3.1)	X	X	X
6.3.1	Lightning	X	X	
6.4	**High-altitude Illness**			
6.4.1	Acute mountain sickness		X	X
6.4.2	Barotrauma of ascent		X	X
6.4.3	High-altitude cerebral edema	X	X	
6.4.4	High-altitude pulmonary edema	X	X	
6.5	**Submersion Incidents**	X	X	X
6.6	**Temperature-related Illness**			
6.6.1	Heat	X	X	X
6.6.2	Cold	X	X	X
6.6.2.1	Frostbite		X	X
6.6.2.2	Hypothermia	X	X	
6.7	**Radiation Emergencies**	X	X	X

7.0 HEAD, EAR, EYE, NOSE, THROAT DISORDERS

			Critical	Emergent	Lower Acuity
7.1	**Ear**				
	7.1.1	Foreign body		X	X
		7.1.1.1 Impacted cerumen			X
	7.1.2	Labyrinthitis			X
	7.1.3	Mastoiditis		X	
	7.1.4	Ménière's disease			X
	7.1.5	Otitis externa			X
		7.1.5.1 Infective			X
		7.1.5.1.1 Malignant		X	
	7.1.6	Otitis media		X	X
	7.1.7	Perforated tympanic membrane (See 18.1.11.2)			X
	7.1.8	Perichondritis		X	X
7.2	**Eye**				
	7.2.1	External eye			
		7.2.1.1 Burn confined to eye (See 18.1.10.2)		X	
		7.2.1.2 Conjunctivitis			X
		7.2.1.3 Corneal abrasions (See 18.1.10.1)		X	X
		7.2.1.4 Disorders of lacrimal system		X	X
		7.2.1.5 Foreign body		X	X
		7.2.1.6 Disorders of the eyelids			X
		7.2.1.7 Keratitis		X	X
	7.2.2	Anterior pole			
		7.2.2.1 Glaucoma		X	X
		7.2.2.2 Hyphema (See 18.1.10.5)		X	X
		7.2.2.3 Iritis (See 18.1.10.9)		X	X
		7.2.2.4 Hypopyon		X	
	7.2.3	Posterior pole			
		7.2.3.1 Choroiditis/Chorioretinitis		X	
		7.2.3.2 Optic neuritis		X	
		7.2.3.3 Papilledema	X	X	
		7.2.3.4 Retinal detachments and defects (See 18.1.10.8)		X	
		7.2.3.5 Retinal vascular occlusion		X	
	7.2.4	Orbit			
		7.2.4.1 Cellulitis			
		7.2.4.1.1 Preseptal		X	
		7.2.4.1.2 Septal/Orbital		X	
		7.2.4.2 Endophthalmitis		X	
7.3	**Nose**				
	7.3.1	Epistaxis	X	X	X
	7.3.2	Foreign body		X	X
	7.3.3	Rhinitis			X
	7.3.4	Sinusitis			X
7.4	**Oropharynx/Throat**				
	7.4.1	Dentalgia			X
	7.4.2	Diseases of the oral soft tissue			

		7.4.2.1 Ludwig's angina	X	X	
		7.4.2.2 Stomatitis			X
	7.4.3	Diseases of the salivary glands			
		7.4.3.1 Sialolithiasis		X	X
		7.4.3.2 Suppurative parotitis		X	
	7.4.4	Foreign body	X	X	
	7.4.5	Gingival and periodontal disorders			
	7.4.6	Larynx/Trachea			
		7.4.6.1 Epiglottitis (See 16.1.1.2)	X	X	
		7.4.6.2 Laryngitis			X
		7.4.6.3 Tracheitis		X	X
		7.4.6.4 Tracheostomy complications	X	X	X
	7.4.7	Oral candidiasis (See 2.2.1.1, 4.4.2.1)			X
	7.4.8	Dental abscess		X	X
	7.4.9	Peritonsillar abscess		X	
	7.4.10	Pharyngitis/Tonsillitis			X
	7.4.11	Retropharyngeal abscess	X	X	
	7.4.12	Temporomandibular joint disorders			X
7.5	**Tumors**		**X**	X	X

8.0 HEMATOLOGIC DISORDERS

		Critical	Emergent	Lower Acuity
8.1	**Blood Transfusion**			
8.1.1	Complications	X	X	
8.2	**Hemostatic Disorders**			
8.2.1	Coagulation defects	X	X	X
8.2.1.1	Acquired	X	X	X
8.2.1.2	Hemophilias	X	X	X
8.2.2	Disseminated intravascular coagulation	X		
8.2.3	Platelet disorders	X	X	X
8.2.3.1	Thrombocytopenia		X	X
8.2.3.2	Idiopathic thrombocytopenic purpura	X	X	X
8.2.3.3	Thrombotic thrombocytopenic purpura	X	X	
8.3	**Lymphomas**		X	X
8.4	**Pancytopenia**	X	X	
8.5	**Red Blood Cell Disorders**			
8.5.1	Anemias			
8.5.1.1	Aplastic	X	X	
8.5.1.2	Hemoglobinopathies		X	X
8.5.1.2.1	Sickle cell anemia		X	X
8.5.1.3	Hemolytic		X	
8.5.1.4	Hypochromic			
8.5.1.4.1	Iron deficiency		X	X
8.5.1.5	Megaloblastic		X	X
8.5.2	Polycythemia		X	X
8.5.3	Methemoglobinemia (See 17.1.21)	X	X	
8.6	**White Blood Cell Disorders**			
8.6.1	Leukemia		X	X
8.6.2	Multiple myeloma		X	X
8.6.3	Leukopenia		X	X
8.7	**Oncologic Emergencies**	**X**	**X**	**X**

9.0 IMMUNE SYSTEM DISORDERS

			Critical	Emergent	Lower Acuity
9.1	**Collagen Vascular Disease**				
	9.1.1	Raynaud's disease			X
	9.1.2	Reactive arthritis (See 11.3.1.6)	X	X	
	9.1.3	Rheumatoid arthritis (See 11.3.1.3)		X	X
	9.1.4	Scleroderma		X	X
	9.1.5	Systemic lupus erythematosus		X	X
	9.1.6	Vasculitis		X	X
9.2	**Hypersensitivity**				
	9.2.1	Allergic reaction		X	X
	9.2.2	Anaphylaxis	X		
	9.2.3	Angioedema	X	X	
	9.2.4	Drug allergies	X	X	X
9.3	**Transplant-related Problems**		X	X	X
	9.3.1	Immunosuppression		X	X
	9.3.2	Rejection	X	X	
9.4	**Immune Complex Disorders**			X	
	9.4.1	Mucocutaneous lymph node syndrome (Kawasaki syndrome)		X	X
	9.4.2	Rheumatic fever		X	X
	9.4.3	Sarcoidosis		X	X
	9.4.4	Post-streptococcal glomerulonephritis (See 15.3.1)		X	
9.5	**Medication-induced Immunosuppression**		X	X	
	9.5.1	Chemotherapeutic agents	X	X	
	9.5.2	Steroids	X	X	
	9.5.3	Targeted immune modulators	X	X	

10.0 SYSTEMIC INFECTIOUS DISORDERS

		Critical	Emergent	Lower Acuity
10.1	**Bacterial**			
10.1.1	Bacterial food poisoning		X	X
10.1.1.1	Botulism	X	X	
10.1.2	Chlamydia		X	X
10.1.3	Gonococcus		X	X
10.1.4	Meningococcus	X	X	
10.1.5	Mycobacterium			
10.1.5.1	Atypical mycobacteria		X	X
10.1.5.2	Tuberculosis		X	X
10.1.6	Other bacterial diseases	X	X	
10.1.6.1	Gas gangrene (See 11.6.3)	X	X	
10.1.7	Sepsis/Bacteremia	X	X	
10.1.7.1	Shock	X		
10.1.7.2	Toxic shock syndrome	X	X	
10.1.8	Spirochetes			
10.1.8.1	Syphilis		X	X
10.1.9	Tetanus	X	X	
10.2	**Biological Warfare Agents**	X	X	
10.3	**Fungal Infections**		X	X
10.4	**Protozoan/Parasites**			
10.4.1	Malaria		X	
10.4.2	Toxoplasmosis		X	X
10.5	**Tick-Borne**			
10.5.1	Anaplasmosis (Ehrlichiosis)		X	
10.5.2	Lyme disease		X	
10.5.3	Rocky Mountain spotted fever		X	
10.6	**Viral**		X	X
10.6.1	Infectious mononucleosis		X	X
10.6.2	Influenza/Parainfluenza		X	X
10.6.3	Arbovirus	X	X	X
10.6.4	Herpes simplex (See 4.4.4.3, 13.1.3.1)		X	X
10.6.5	Herpes zoster/Varicella (See 4.4.4.3)		X	X
10.6.6	HIV/AIDS	X	X	X
10.6.7	Rabies	X		
10.6.8	Roseola (See 4.4.4.2)			X
10.6.9	Rubella (See 4.4.4.2)			X
10.7	**Emerging Infections/Pandemics**	X	X	X
10.8	**Drug Resistance**	**X**	**X**	**X**

11.0 MUSCULOSKELETAL DISORDERS (NONTRAUMATIC)

		Critical	Emergent	Lower Acuity
11.1	**Bony Abnormalities**			
11.1.1	Aseptic/Avascular necrosis		X	X
11.1.2	Osteomyelitis		X	
11.1.3	Tumors		X	X
11.1.4	Atypical fractures		X	X
11.1.4.1	Osteoporotic		X	X
11.1.4.2	Tumor-related		X	X
11.1.4.3	Congenital disorders		X	X
11.2	**Disorders of the Spine**			
11.2.1	Disc disorders		X	X
11.2.2	Inflammatory spondylopathies		X	X
11.2.3	Radiculopathy (See 12.7.3)		X	X
11.2.4	Spinal stenosis		X	X
11.2.5	Cervical pain	X	X	X
11.2.6	Thoracic pain	X	X	X
11.2.7	Lumbosacral pain	X	X	X
11.2.7.1	Cauda equina syndrome (See 18.1.15.1)	X	X	
11.2.7.2	Sacroiliitis			X
11.2.7.3	Sciatica		X	X
11.3	**Joint Abnormalities**			
11.3.1	Arthritis			
11.3.1.1	Septic		X	
11.3.1.2	Crystal arthropathies		X	X
11.3.1.3	Rheumatoid (See 9.1.3)			X
11.3.1.4	Juvenile			X
11.3.1.5	Osteoarthrosis			X
11.3.1.6	Reactive arthritis (See 9.1.2)		X	X
11.3.2	Congenital dislocation of the hip		X	X
11.3.3	Slipped capital femoral epiphysis		X	
11.3.4	Synovitis		X	X
11.4	**Muscle Abnormalities**			
11.4.1	Myositis			X
11.4.2	Rhabdomyolysis	X	X	
11.5	**Overuse Syndromes**			
11.5.1	Bursitis			X
11.5.2	Muscle strains			X
11.5.3	Peripheral nerve syndrome			X
11.5.3.1	Carpal tunnel syndrome			X
11.5.4	Tendinopathy			X
11.5.5	Stress reaction fracture		X	X
11.6	**Soft Tissue Infections**			
11.6.1	Fasciitis		X	
11.6.2	Felon		X	

11.6.3	Gangrene (See 10.1.6.1)	X	X	
11.6.4	Paronychia		X	X
11.6.5	Tenosynovitis		X	X

12.0 **NERVOUS SYSTEM DISORDERS**

		Critical	Emergent	Lower Acuity
12.1	**Cranial Nerve Disorders**			X
12.1.1	Idiopathic facial nerve paralysis (Bell's palsy)			X
12.1.2	Trigeminal neuralgia			X
12.2	**Demyelinating Disorders**	X	X	
12.2.1	Multiple sclerosis		X	X
12.3	**Headache** (See 1.2.2)	X	X	X
12.3.1	Tension			X
12.3.2	Vascular		X	X
12.3.3	Cluster		X	X
12.4	**Hydrocephalus**		X	X
12.4.1	Normal pressure		X	X
12.4.2	VP shunt		X	
12.5	**Infections/Inflammatory Disorders**			
12.5.1	Encephalitis	X	X	
12.5.2	Intracranial and intraspinal abscess	X	X	
12.5.3	Meningitis			
12.5.3.1	Bacterial	X	X	
12.5.3.2	Viral		X	X
12.5.4	Myelitis		X	
12.5.5	Neuritis			X
12.6	**Movement Disorders**		X	X
12.6.1	Dystonic reaction		X	X
12.6.2	Chorea/Choreiform			X
12.6.3	Tardive dyskinesia			X
12.7	**Neuromuscular Disorders**			
12.7.1	Guillain-Barré syndrome	X	X	
12.7.2	Myasthenia gravis	X	X	X
12.7.3	Peripheral neuropathy (See 11.2.3)		X	
12.8	**Other Conditions of the Brain**			
12.8.1	Dementia (See 14.5.2)			X
12.8.2	Parkinson's disease			X
12.8.3	Idiopathic intracranial hypertension	X	X	
12.8.4	Cerebral venous sinus thrombosis	X	X	X
12.8.5	Posterior reversible encephalopathy syndrome (PRES)	X	X	
12.9	**Seizure Disorders**			
12.9.1	Epileptiform	X	X	X
12.9.1.1	Neonatal	X	X	
12.9.1.2	Febrile	X	X	X
12.9.1.3	Status epilepticus	X		
12.9.1.4	Nonconvulsive	X	X	

12.9.1.5 Drug-induced	X	X	
12.9.2 Nonepileptiform			X
12.10 **Spinal Cord Compression**	X	X	
12.11 **Stroke**			
12.11.1 Hemorrhagic			
12.11.1.1 Intracerebral	X	X	
12.11.1.2 Subarachnoid	X	X	
12.11.2 Ischemic			
12.11.2.1 Embolic	X	X	
12.11.2.2 Thrombotic	X	X	
12.12 **Transient Cerebral Ischemia**		X	X
12.13 **Tumors**		X	X
12.14 **Delirium**		X	
12.14.1 Excited delirium syndrome	X	X	

13.0 **OBSTETRICS AND GYNECOLOGY**

		Critical	Emergent	Lower Acuity
13.1	**Female Genital Tract**			
13.1.1	Cervix			
13.1.1.1	Cervicitis and endocervicitis		X	X
13.1.1.2	Tumors			X
13.1.2	Infectious disorders			
13.1.2.1	Pelvic inflammatory disease		X	
13.1.2.1.1	Fitz-Hugh-Curtis syndrome		X	
13.1.2.1.2	Tuboovarian abscess		X	
13.1.2.2	Urethritis			X
13.1.3	Lesions			
13.1.3.1	Herpes simplex (See 4.4.4.3, 10.6.4)			X
13.1.3.2	Human papillomavirus (HPV) (See 4.4.4.5)			X
13.1.4	Ovary			
13.1.4.1	Cyst			X
13.1.4.2	Torsion		X	
13.1.4.3	Tumors		X	X
13.1.5	Uterus			
13.1.5.1	Abnormal bleeding		X	X
13.1.5.2	Endometriosis			X
13.1.5.3	Prolapse			X
13.1.5.4	Tumors		X	X
13.1.5.4.1	Gestational trophoblastic disease		X	
13.1.5.4.2	Leiomyoma			X
13.1.6	Vagina and vulva			
13.1.6.1	Bartholin's cyst		X	X
13.1.6.2	Foreign body		X	X
13.1.6.3	Vaginitis/Vulvovaginitis			X
13.2	**Normal Pregnancy**			X
13.3	**Complications of Pregnancy**			
13.3.1	Abortion		X	
13.3.2	Ectopic pregnancy	X	X	
13.3.3	Hemolysis, elevated liver enzymes, low platelets (HELLP) syndrome	X	X	
13.3.4	Hemorrhage, antepartum			
13.3.4.1	Abruptio placentae (See 18.2.1)	X	X	
13.3.4.2	Placenta previa	X	X	
13.3.5	Hyperemesis gravidarum		X	X
13.3.6	Gestational hypertension		X	X
13.3.6.1	Eclampsia	X	X	
13.3.6.2	Preeclampsia		X	
13.3.7	Infections		X	
13.3.8	Rh isoimmunization		X	
13.3.9	First trimester bleeding	X	X	X
13.3.10	Gestational diabetes		X	X

13.4	**High-risk Pregnancy**		X	X	
	13.4.1	Assisted reproductive therapies	X	X	X
	13.4.2	Pre-existing medical problems	X	X	X
13.5	**Normal Labor and Delivery**			X	X
13.6	**Complications of Labor**				
	13.6.1	Fetal distress	X		
	13.6.2	Premature labor (See 18.2.3)		X	
	13.6.3	Premature rupture of membranes		X	
	13.6.4	Rupture of uterus (See 18.2.4)	X		
13.7	**Complications of Delivery**				
	13.7.1	Malposition of fetus	X	X	
	13.7.2	Nuchal cord	X		
	13.7.3	Prolapse of cord	X		
13.8	**Postpartum Complications**				
	13.8.1	Endometritis		X	
	13.8.2	Hemorrhage	X	X	
	13.8.3	Mastitis		X	X
	13.8.4	Pituitary infarction	X	X	
13.9	**Contraception**			X	X

14.0 **PSYCHOBEHAVIORAL DISORDERS**

		Critical	Emergent	Lower Acuity
14.1	**Substance Use Disorders**			
14.1.1	Alcohol use disorder (See 17.1.1)	X	X	X
14.1.2	Illicit drug use	X	X	X
14.1.3	Prescription drug use See 17.1.2.3)	X	X	X
14.1.3.1	Drug diversion			X
14.1.4	Tobacco use disorder			X
14.1.5	Withdrawal syndromes	X	X	X
14.2	**Mood Disorders and Thought Disorders**			
14.2.1	Acute psychosis	X	X	
14.2.2	Bipolar disorder		X	X
14.2.3	Depression		X	X
14.2.3.1	Suicidal risk	X	X	
14.2.4	Grief reaction			X
14.2.5	Schizophrenia		X	X
14.3	**Factitious Disorders**			
14.4	**Neurotic Disorders**			
14.4.1	Anxiety/Panic			X
14.4.2	Obsessive compulsive			X
14.4.3	Phobic			X
14.4.4	Post-traumatic stress			X
14.5	**Organic Psychoses**			
14.5.1	Chronic organic psychotic conditions			X
14.5.1.1	Alcoholic psychoses		X	X
14.5.1.2	Drug psychoses		X	X
14.5.2	Dementia (See 12.8.1)			X
14.6	**Patterns of Violence/Abuse/Neglect**			
14.6.1	Interpersonal violence			
14.6.1.1	Child	X	X	X
14.6.1.2	Intimate partner	X	X	X
14.6.1.3	Elder	X	X	X
14.6.2	Homicidal Risk	X	X	
14.6.3	Sexual assault		X	
14.6.4	Staff/Patient safety		X	
14.6.5	Human trafficking		X	X
14.7	**Personality Disorders**			X
14.8	**Psychosomatic Disorders**			
14.8.1	Hypochondriasis			X
14.8.2	Hysteria/Conversion			X
14.9	Feeding and Eating Disorders	X	X	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**			
15.3.1	Glomerulonephritis (See 9.4.4)		X	X
15.3.2	Nephrotic syndrome		X	X
15.4	**Infection**			
15.4.1	Cystitis			X
15.4.2	Pyelonephritis		X	
15.4.3	Asymptomatic bacteriuria			X
15.5	**Male Genital Tract**			
15.5.1	Genital lesions			X
15.5.2	Hernias		X	X
15.5.3	Inflammation/Infection			
15.5.3.1	Balanitis/Balanoposthitis		X	X
15.5.3.2	Epididymitis/Orchitis		X	X
15.5.3.3	Gangrene of the scrotum (Fournier's gangrene)	X	X	
15.5.3.4	Prostatitis		X	X
15.5.3.5	Urethritis			X
15.5.4	Structural			
15.5.4.1	Paraphimosis/Phimosis		X	
15.5.4.2	Priapism		X	
15.5.4.2.1	Medication induced		X	X
15.5.4.3	Prostatic hypertrophy (BPH)			X
15.5.4.4	Torsion		X	
15.5.5	Testicular masses			X
15.5.6	Tumors			
15.5.6.1	Prostate			X
15.5.6.2	Testis			X
15.6	**Nephritis**		X	X
15.6.1	Hemolytic uremic syndrome		X	
15.7	**Structural Disorders**			
15.7.1	Calculus of urinary tract		X	X
15.7.2	Obstructive uropathy		X	
15.7.3	Polycystic kidney disease			X
15.8	**Tumors**			X

16.0 THORACIC-RESPIRATORY DISORDERS

		Critical	Emergent	Lower Acuity
16.1	**Acute Upper Airway Disorders**			
16.1.1	Infections			
16.1.1.1	Croup		X	
16.1.1.2	Epiglottitis (See 7.4.6.1)	X	X	
16.1.2	Obstruction/Foreign body (See 16.4.7)	X		
16.2	**Disorders of Pleura, Mediastinum, and Chest Wall**			
16.2.1	Costochondritis			X
16.2.2	Mediastinitis	X	X	
16.2.3	Pleural effusion		X	X
16.2.4	Pleuritis			X
16.2.5	Pneumomediastinum		X	
16.2.6	Pneumothorax (See 18.1.2.7)			
16.2.6.1	Simple		X	
16.2.6.2	Tension	X		
16.2.6.3	Open	X		
16.2.7	Empyema		X	X
16.3	**Acute Respiratory Distress Syndrome**	X	X	
16.4	**Obstructive/Restrictive Lung Disease**			
16.4.1	Asthma/Reactive airway disease	X	X	
16.4.2	Bronchitis and bronchiolitis		X	X
16.4.3	Bronchopulmonary dysplasia		X	X
16.4.4	Chronic obstructive pulmonary disease	X	X	X
16.4.5	Cystic fibrosis	X	X	X
16.4.6	Environmental/Industrial exposure	X	X	X
16.4.7	Foreign body (See 16.1.2)	X	X	
16.5	**Physical and Chemical Irritants/Insults**			
16.5.1	Pneumoconiosis		X	X
16.5.2	Toxic effects of gases, fumes, vapors (See 18.1.3.3.2)	X	X	X
16.6	**Pulmonary Embolism/Infarct**			
16.6.1	Septic emboli	X	X	
16.6.2	Venous thromboembolism (See 3.3.2.1)	X	X	
16.6.3	Fat emboli	X	X	
16.7	**Pulmonary Infections**			
16.7.1	Lung abscess		X	
16.7.2	Pneumonia			
16.7.2.1	Aspiration	X	X	
16.7.2.2	Community-acquired	X	X	X
16.7.2.3	Health care-associated	X	X	X
16.7.3	Pulmonary tuberculosis		X	
16.7.4	Respiratory syncytial virus (RSV)	X	X	X
16.7.5	Pertussis	X	X	X
16.8	**Tumors**			

16.8.1	Breast			X
16.8.2	Pulmonary		X	X
16.9	**Pulmonary Hypertension**	X	X	X

17.0 **TOXICOLOGIC DISORDERS**

		Critical	Emergent	Lower Acuity
17.1	**Drug and Chemical Classes**			
17.1.1	Alcohol (See 14.1.1)			
17.1.1.1	Ethanol	X	X	X
17.1.1.2	Ethylene glycol	X	X	
17.1.1.3	Isopropyl	X	X	X
17.1.1.4	Methanol	X	X	
17.1.2	Analgesics			
17.1.2.1	Acetaminophen		X	
17.1.2.2	Nonsteroidal anti-inflammatories (NSAIDS)		X	X
17.1.2.3	Opioids (See 14.1.3)	X	X	
17.1.2.4	Salicylates	X	X	
17.1.3	Anticholinergics	X	X	
17.1.3.1	Antihistamines		X	
17.1.4	Anticoagulants/Antithrombotics	X	X	
17.1.4.1	Direct thrombin inhibitors	X		
17.1.4.2	Factor Xa inhibitors	X		
17.1.4.3	Heparins		X	
17.1.4.4	Vitamin K antagonists	X		X
17.1.5	Anticonvulsants	X	X	
17.1.6	Antidepressants	X	X	
17.1.6.1	Bupropion		X	
17.1.6.2	Selective serotonin reuptake inhibitors		X	X
17.1.6.3	Tricyclic antidepressants	X	X	
17.1.7	Antiemetics		X	
17.1.8	Antimicrobials			
17.1.8.1	Antibiotics		X	X
17.1.8.1.1	Isoniazid	X	X	
17.1.8.2	Antimalarials	X	X	X
17.1.8.3	Antiretrovirals	X	X	X
17.1.9	Antipsychotics	X	X	
17.1.10	Carbon monoxide	X	X	
17.1.11	Cardiovascular drugs			
17.1.11.1	Antiarrhythmics	X	X	
17.1.11.1.1	Digoxin	X	X	
17.1.11.2	Antihypertensives	X	X	
17.1.11.2.1	Central acting	X	X	
17.1.11.2.2	Peripheral Acting	X	X	
17.1.11.3	Beta blockers	X	X	
17.1.11.4	Calcium channel blockers	X	X	
17.1.12	Cholinergics	X	X	
17.1.12.1	Nerve agents	X	X	
17.1.12.2	Organophosphates	X	X	
17.1.13	Cyanides, hydrogen sulfide	X	X	
17.1.14	Heavy metals	X	X	
17.1.15	Herbicides, insecticides, and rodenticides	X	X	
17.1.16	Household/Industrial chemicals	X	X	X
17.1.16.1	Caustic agents (See 2.2.2.3)	X	X	

	17.1.16.2 Hydrocarbons	X	X	
	17.1.16.3 Inhaled irritants	X	X	
17.1.17	Hypoglycemics/Insulin	X	X	
17.1.18	Lithium	X	X	X
17.1.19	Local anesthetics	X	X	
17.1.20	Marine toxins (See 6.1.3)	X	X	X
17.1.21	Methemoglobinemia (See 8.5.3)	X	X	
17.1.22	Mushrooms/Poisonous plants	X	X	
17.1.23	Nutritional supplements		X	X
	17.1.23.1 Iron	X	X	
	17.1.23.2 Performance enhancing and weight-loss drugs	X	X	X
17.1.24	Recreational drugs	X	X	X
	17.1.24.1 Cannabis			X
	17.1.24.1.1 Cannabinoid hyperemesis syndrome/cyclic vomiting			X
	17.1.24.2 Synthetic cannabinoids	X	X	X
	17.1.24.3 Hallucinogens	X	X	X
	17.1.24.4 GHB	X	X	X
17.1.25	Sedatives/Hypnotics	X	X	
17.1.26	Stimulants/Sympathomimetics	X	X	
	17.1.26.1 Amphetamines	X	X	
	17.1.26.2 Cocaine	X	X	X

18.0 **TRAUMATIC DISORDERS**

		Critical	Emergent	Lower Acuity
18.1 **Trauma**				
18.1.1	Abdominal trauma			
18.1.1.1	Diaphragm	X	X	
18.1.1.2	Hollow viscus	X	X	
18.1.1.3	Penetrating	X	X	
18.1.1.4	Retroperitoneum	X	X	
18.1.1.5	Solid organ	X	X	
18.1.1.6	Vascular	X	X	
18.1.2	Chest trauma			
18.1.2.1	Aortic dissection/Disruption	X		
18.1.2.2	Contusion			
18.1.2.2.1	Cardiac	X	X	X
18.1.2.2.2	Pulmonary	X	X	
18.1.2.3	Fracture			
18.1.2.3.1	Clavicle		X	X
18.1.2.3.2	Ribs/Flail chest	X	X	X
18.1.2.3.3	Sternum		X	X
18.1.2.4	Hemothorax	X	X	
18.1.2.5	Penetrating chest trauma	X	X	
18.1.2.6	Pericardial tamponade (See 3.6.1)	X		
18.1.2.7	Pneumothorax (See 16.2.6)			
18.1.2.7.1	Simple		X	
18.1.2.7.2	Tension	X		
18.1.2.7.3	Open	X		
18.1.3	Cutaneous injuries			
18.1.3.1	Avulsions		X	X
18.1.3.2	Bite wounds (See 6.1)		X	X
18.1.3.3	Burns			
18.1.3.3.1	Electrical (See 6.3)	X	X	X
18.1.3.3.2	Chemical (See 16.5.2)	X	X	X
18.1.3.3.3	Thermal	X	X	X
18.1.3.4	Lacerations		X	X
18.1.3.5	Puncture wounds		X	X
18.1.3.6	Nail injuries			X
18.1.4	Facial fractures			X
18.1.4.1	Dental		X	X
18.1.4.2	Le Fort	X	X	X
18.1.4.3	Mandibular		X	X
18.1.4.4	Orbital		X	X
18.1.4.5	Nasal			X
18.1.4.5.1	Septal hematoma		X	
18.1.4.6	Zygomaticomaxillary complex			X
18.1.5	Genitourinary trauma			
18.1.5.1	Bladder		X	
18.1.5.2	External genitalia		X	
18.1.5.3	Renal		X	X
18.1.5.4	Ureteral		X	
18.1.5.5	Urethral		X	X
18.1.6	Head trauma			

	18.1.6.1 Intracranial injury	X	X	
	18.1.6.1.1 Concussion		X	X
	18.1.6.1.2 Intracranial hemorrhage	X	X	
	18.1.6.2 Scalp lacerations/Avulsions		X	X
	18.1.6.3 Skull fractures		X	X
18.1.7	Injuries of the spine			
	18.1.7.1 Dislocations/Subluxations	X	X	
	18.1.7.2 Fractures	X	X	X
	18.1.7.3 Sprains/Strains			X
18.1.8	Extremity bony trauma			
	18.1.8.1 Dislocations/Subluxations		X	
	18.1.8.2 Fractures (open and closed)		X	X
18.1.9	Neck trauma			
	18.1.9.1 Laryngotracheal injuries	X	X	
	18.1.9.2 Penetrating neck trauma	X	X	
	18.1.9.3 Vascular injuries	X	X	
	18.1.9.4 Strangulation	X	X	X
18.1.10	Ophthalmologic trauma			
	18.1.10.1 Corneal abrasions/Lacerations (See 7.2.1.3)		X	X
	18.1.10.2 Corneal burns (See 7.2.1.1)			
	18.1.10.2.1 Acid		X	
	18.1.10.2.2 Alkali		X	
	18.1.10.2.3 Ultraviolet		X	X
	18.1.10.3 Eyelid lacerations		X	
	18.1.10.4 Foreign body (See 19.4.4.8)		X	
	18.1.10.5 Hyphema (See 7.2.2.2)		X	
	18.1.10.6 Lacrimal duct injuries		X	
	18.1.10.7 Penetrating globe injuries		X	
	18.1.10.8 Retinal detachments (See 7.2.3.4)		X	
	18.1.10.9 Traumatic iritis (See 7.2.2.3)		X	X
	18.1.10.10 Retrobulbar hematoma		X	
18.1.11	Otologic trauma			
	18.1.11.1 Hematoma		X	X
	18.1.11.2 Perforated tympanic membrane (See 7.1.7)			X
18.1.12	Pediatric fractures			
	18.1.12.1 Epiphyseal		X	X
	18.1.12.1.1 Salter-Harris classification		X	X
	18.1.12.2 Greenstick		X	
	18.1.12.3 Torus			X
	18.1.12.4 Apophyseal avulsion			X
18.1.13	Pelvic fracture	X	X	
18.1.14	Soft-tissue extremity injuries			
	18.1.14.1 Amputations/Replantation		X	
	18.1.14.2 Compartment syndromes		X	
	18.1.14.3 High-pressure injection		X	
	18.1.14.4 Injuries to joints		X	X
	18.1.14.5 Penetrating trauma		X	X
	18.1.14.6 Periarticular			X
	18.1.14.7 Sprains/Strains			X
	18.1.14.8 Tendon injuries			
	18.1.14.8.1 Lacerations/Transections		X	
	18.1.14.8.2 Ruptures		X	X

		18.1.14.9 Vascular injuries	X	X	
	18.1.15	Spinal cord and nervous system trauma			
		18.1.15.1 Cauda equina syndrome (See 11.2.7.1)	X	X	
		18.1.15.2 Injury to nerve roots		X	X
		18.1.15.3 Peripheral nerve injury		X	X
		18.1.15.4 Spinal cord injury	X	X	X
		18.1.15.4.1 Spinal cord injury without radiologic abnormality (SCIWORA)		X	
18.2	**Trauma in Pregnancy**				
	18.2.1	Abruptio placentae (See 13.3.4.1)	X	X	
	18.2.2	Resuscitative hysterotomy (See 19.4.8.2)	X		
	18.2.3	Premature labor (See 13.6.2)		X	
	18.2.4	Rupture of uterus (See 13.6.4)	X		
18.3	**Multi-system Trauma**		X	X	
	18.3.1	Blast injury	X	X	
	18.3.2	Falls	X	X	X
	18.3.3	Motor vehicle collision	X	X	X
	18.3.4	Assault	X	X	X

19.0 PROCEDURES AND SKILLS INTEGRAL TO THE PRACTICE OF EMERGENCY MEDICINE

19.1 **Airway Techniques**
- 19.1.1 Intubation
- 19.1.2 Airway adjuncts
- 19.1.3 Surgical airway
- 19.1.4 Mechanical ventilation
- 19.1.5 Non-invasive ventilatory management
- 19.1.6 Ventilatory monitoring

19.2 **Resuscitation**
- 19.2.1 Cardiopulmonary resuscitation
- 19.2.2 Neonatal resuscitation
- 19.2.3 Pediatric resuscitation
- 19.2.4 Post-resuscitative care
  - 19.2.4.1 Therapeutic hypothermia (or targeted temperature management)
- 19.2.5 Blood, fluid, and component therapy
- 19.2.6 Arterial catheter insertion
- 19.2.7 Central venous access
- 19.2.8 Intraosseous line placement
- 19.2.9 Defibrillation
- 19.2.10 Thoracotomy

19.3 **Anesthesia and Acute Pain Management**
- 19.3.1 Local anesthesia
- 19.3.2 Regional nerve block
- 19.3.3 Procedural sedation
- 19.3.4 Analgesia

19.4 **Diagnostic and Therapeutic Procedures**
- 19.4.1 Abdominal and gastrointestinal
  - 19.4.1.1 Anoscopy
  - 19.4.1.2 Excision of thrombosed hemorrhoid
  - 19.4.1.3 Gastric lavage
  - 19.4.1.4 Gastrostomy tube replacement
  - 19.4.1.5 Nasogastric tube
  - 19.4.1.6 Paracentesis
- 19.4.2 Cardiovascular and Thoracic
  - 19.4.2.1 Cardiac pacing
  - 19.4.2.2 Cardioversion
  - 19.4.2.3 ECG interpretation
  - 19.4.2.4 Pericardiocentesis
  - 19.4.2.5 Thoracentesis
  - 19.4.2.6 Thoracostomy
- 19.4.3 Cutaneous
  - 19.4.3.1 Escharotomy
  - 19.4.3.2 Incision and drainage
  - 19.4.3.3 Trephination, nails
  - 19.4.3.4 Wound closure techniques

- 19.4.3.5 Wound management
- 19.4.4 Head, ear, eye, nose, and throat
  - 19.4.4.1 Control of epistaxis
  - 19.4.4.2 Drainage of peritonsillar abscess
  - 19.4.4.3 Laryngoscopy
  - 19.4.4.4 Lateral canthotomy
  - 19.4.4.5 Slit lamp examination
  - 19.4.4.6 Tonometry
  - 19.4.4.7 Tooth stabilization
  - 19.4.4.8 Corneal foreign body removal (See 18.1.10.4)
  - 19.4.4.9 Drainage of hematoma
- 19.4.5 Systemic infectious
  - 19.4.5.1 Personal protection (equipment and techniques)
  - 19.4.5.2 Universal precautions and exposure management
- 19.4.6 Musculoskeletal
  - 19.4.6.1 Arthrocentesis
  - 19.4.6.2 Compartment pressure measurement
  - 19.4.6.3 Fracture/Dislocation immobilization techniques
  - 19.4.6.4 Fracture/Dislocation reduction techniques
  - 19.4.6.5 Spine immobilization techniques
  - 19.4.6.6 Fasciotomy
- 19.4.7 Nervous system
  - 19.4.7.1 Lumbar puncture
- 19.4.8 Obstetrics and gynecology
  - 19.4.8.1 Delivery of newborn
  - 19.4.8.2 Perimortem c-section (See 18.2.2)
  - 19.4.8.3 Sexual assault examination
- 19.4.9 Psychobehavioral
  - 19.4.9.1 Psychiatric screening examination
  - 19.4.9.2 Violent patient management/Restraint
- 19.4.10 Renal and urogenital
  - 19.4.10.1 Bladder catheterization
    - 19.4.10.1.1 Urethral catheter
    - 19.4.10.1.2 Suprapubic catheter
  - 19.4.10.2 Cystourethrogram
  - 19.4.10.3 Testicular detorsion
- 19.4.11 Toxicologic
  - 19.4.11.1 Decontamination

19.5 **Ultrasound**

- 19.5.1 Diagnostic ultrasound
- 19.5.2 Procedural ultrasound

19.6 **Other Diagnostic and Therapeutic Procedures**

- 19.6.1 Foreign body removal
- 19.6.2 Collection and handling of forensic material

20.0 OTHER CORE COMPETENCIES OF THE PRACTICE OF EMERGENCY MEDICINE

20.1 **Interpersonal and Communication Skills**
- 20.1.1 Interpersonal skills
  - 20.1.1.1 Inter-departmental and medical staff relations
  - 20.1.1.2 Intra-departmental relations, teamwork, and collaboration skills
  - 20.1.1.3 Patient and family experience of care
- 20.1.2 Communication skills
  - 20.1.2.1 Complaint management and service recovery
  - 20.1.2.2 Conflict management
  - 20.1.2.3 Crisis resource management
  - 20.1.2.4 Delivering bad news
  - 20.1.2.5 Cultural competency
  - 20.1.2.6 Negotiation skills

20.2 **Practice-based Learning and Improvement**
- 20.2.1 Performance improvement and lifelong learning
  - 20.2.1.1 Evidence-based medicine
  - 20.2.1.2 Interpretation of medical literature
  - 20.2.1.3 Knowledge translation
  - 20.2.1.4 Patient safety and medical errors
  - 20.2.1.5 Performance evaluation and feedback
  - 20.2.1.6 Research
- 20.2.2 Practice guidelines
- 20.2.3 Education
  - 20.2.3.1 Patient and family
  - 20.2.3.2 Provider
- 20.2.4 Principles of quality improvement

20.3 **Professionalism**
- 20.3.1 Advocacy
  - 20.3.1.1 Patient
  - 20.3.1.2 Professional
  - 20.3.1.3 Healthcare disparities
- 20.3.2 Ethical principles
  - 20.3.2.1 Conflicts of interest
  - 20.3.2.2 Diversity awareness
  - 20.3.2.3 Electronic communications/Social media
  - 20.3.2.4 Medical ethics
  - 20.3.2.5 Stewardship of resources
- 20.3.3 Leadership and management principles
- 20.3.4 Well-being
  - 20.3.4.1 Fatigue and impairment
  - 20.3.4.2 Time management/Organizational skills
  - 20.3.4.3 Work/Life balance
  - 20.3.4.4 Work dysphoria (burn-out)

20.4 **Systems-based Practice**
- 20.4.1 Clinical informatics
  - 20.4.1.1 Computerized order entry

- 20.4.1.2 Clinical decision support
- 20.4.1.3 Electronic health record
- 20.4.1.4 Health information integration

20.4.2 ED Administration
- 20.4.2.1 Contracts and practice models
- 20.4.2.2 Patient flow and throughput
  - 20.4.2.2.1 Patient triage and classification
  - 20.4.2.2.2 Hospital crowding and diversion
  - 20.4.2.2.3 Observation and rapid treatment units
- 20.4.2.3 Financial principles
  - 20.4.2.3.1 Billing and coding
  - 20.4.2.3.2 Cost-effective care and resource utilization
  - 20.4.2.3.3 Reimbursement issues
- 20.4.2.4 Human resource management
  - 20.4.2.4.1 Allied health professionals
  - 20.4.2.4.2 Recruitment, credentialing, and orientation

20.4.3 ED operations
- 20.4.3.1 Policies and procedures
- 20.4.3.2 ED data acquisition and operational metrics
- 20.4.3.3 Safety, security, and violence in the ED
- 20.4.3.4 Patient satisfaction

20.4.4 Health care coordination
- 20.4.4.1 End-of-life and palliative care
  - 20.4.4.1.1 Advance directives
  - 20.4.4.1.2 Coordination with hospice
  - 20.4.4.1.3 Organ donation
- 20.4.4.2 Placement options
  - 20.4.4.2.1 Activities of daily living/functional assessment
- 20.4.4.3 Outpatient services

20.4.5 Regulatory/Legal
- 20.4.5.1 Accreditation
- 20.4.5.2 Compliance and reporting requirements
- 20.4.5.3 Confidentiality and privacy
- 20.4.5.4 Consent, capacity, and refusal of care
- 20.4.5.5 Emergency Medical Treatment and Active Labor Act (EMTALA)
- 20.4.5.6 External quality metrics
- 20.4.5.7 Good Samaritan emergency care

20.4.6 Risk management
- 20.4.6.1 Liability and litigation
- 20.4.6.2 Professional liability insurance
- 20.4.6.3 Risk mitigation
- 20.4.6.4 Error disclosure
- 20.4.6.5 Root cause analysis

20.4.7 Evolving trends in health care delivery
- 20.4.7.1 Public policy

20.4.8 Regionalization of emergency care