

THE AMERICAN BOARD OF PEDIATRICS®

CONTENT OUTLINE

Pediatric Emergency Medicine

**Subspecialty In-Training,
Certification, and Maintenance of
Certification (MOC) Examinations**

INTRODUCTION

This document was prepared by the American Board of Pediatrics Subboard of Pediatric Emergency Medicine for the purpose of developing in-training, certification, and maintenance of certification examinations. The outline defines the body of knowledge from which the Subboard samples to prepare its examinations. The content specification statements located under each category of the outline are used by item writers to develop questions for the examinations; they broadly address the specific elements of knowledge within each section of the outline.

Pediatric Emergency Medicine

Each Pediatric Emergency Medicine exam is built to the same specifications, also known as the blueprint. This blueprint is used to ensure that, for the initial certification and in-training exams, each exam measures the same depth and breadth of content knowledge. Similarly, the blueprint ensures that the same is true for each Maintenance of Certification exam form. The table below shows the percentage of questions from each of the content domains that will appear on an exam. Please note that the percentages are approximate; actual content may vary.

| | Content Categories | Initial Certification and In-Training | Maintenance of Certification (MOC) |
|-----|---|---------------------------------------|------------------------------------|
| 1. | Resuscitation | 11% | 12% |
| 2. | Trauma Care | 12% | 12% |
| 3. | Emergencies Treated Medically | 17% | 17% |
| 4. | Emergencies Treated Surgically or Requiring Surgical Consultation | 11% | 11% |
| 5. | Toxicology | 7% | 7% |
| 6. | Environmental Emergencies | 6% | 6% |
| 7. | Psychosocial | 5% | 6% |
| 8. | Signs and Symptoms | 12% | 12% |
| 9. | EMS | 3% | 3% |
| 10. | Epidemiology | 2% | 2% |
| 11. | Administrative/Legal/Ethical | 3% | 3% |
| 12. | Procedures | 6% | 6% |
| 13. | Core Knowledge in Scholarly Activities | 5% | 3% |

Emergency Medicine

1. Resuscitation

A. Respiratory failure/arrest

1. Etiology
 - a. Know etiology of respiratory failure
 - b. Differentiate etiologies of respiratory failure by age
2. Pathophysiology
 - a. Understand the anatomy of the respiratory system
 - b. Understand the progression of respiratory failure to arrest
 - c. Understand the pathophysiology of respiratory failure
3. Recognition
 - a. Recognize signs and symptoms of upper airway obstruction
 - b. Recognize the presentations of patients with hypoxia
 - c. Recognize and interpret relevant monitoring studies for respiratory failure
 - d. Recognize signs and symptoms of hypercarbia
 - e. Recognize signs and symptoms of lower airway obstruction
 - f. Recognize and interpret relevant laboratory studies for respiratory failure
 - g. Recognize and interpret relevant radiographic studies for respiratory failure
4. Management
 - a. Plan management priorities for patients in respiratory failure
 - b. Know the use of pharmacologic agents in the management of patients in respiratory failure
 - c. Know the indications and contraindications for surgical airway management
 - d. Know the use of basic airway management techniques in patients with respiratory failure
 - e. Know the use of advanced airway management techniques in patients with respiratory failure
 - f. Know the use of surgical airway management procedures

B. Circulatory failure/shock

1. Etiology
 - a. Know major etiologies of circulatory failure/shock
2. Pathophysiology
 - a. Understand the pathophysiology of cardiogenic shock
 - b. Understand the pathophysiology of hypovolemic shock
 - c. Understand the pathophysiology of neurogenic shock
 - d. Understand the pathophysiology of distributive shock
3. Recognition
 - a. Recognize signs and symptoms of compensated shock
 - b. Recognize signs and symptoms of uncompensated shock
4. Management
 - a. Know the role of crystalloid infusion in the management of shock
 - b. Know the role of pharmacologic therapy for circulatory failure/shock
 - c. Know the applications, indications, and complications of invasive monitoring in shock
 - d. Know the role of blood product infusion in the management of shock

C. Cardiopulmonary arrest

1. Pathophysiology
 - a. Understand pathophysiology of progression from cardiopulmonary failure to arrest
 - b. Understand the pathophysiology of post arrest phenomena
2. Recognition
 - a. Recognize signs and symptoms of cardiopulmonary failure and arrest
 - b. Recognize unstable arrhythmias leading to cardiac arrest
 - c. Recognize arrhythmias during cardiac arrest
3. Management
 - a. Know treatment of stable dysrhythmias
 - b. Know techniques of pediatric basic life support in cardiopulmonary arrest
 - c. Know the routes of administration of drugs used in resuscitation
 - d. Know the indications for and pharmacologic action of atropine in resuscitation
 - e. Know the indications for and pharmacologic action of calcium in resuscitation
 - f. Know the indications for and pharmacologic action of bicarbonate in resuscitation
 - g. Know the indications for and pharmacologic action of epinephrine in resuscitation
 - h. Know the indications for defibrillation in resuscitation
 - i. Know which resuscitation pharmacologic agents can be given by the endotracheal route
 - j. Know the indications for and pharmacologic action of amiodarone
 - k. Know the indications for and pharmacologic action of adenosine
 - l. Know the indications for and pharmacologic action of procainamide
 - m. Know the indications for and pharmacologic action of lidocaine
 - n. Know the indications for and pharmacologic action of vasopressin
 - o. Know the indications for cardioversion in resuscitation
 - p. Know treatment of unstable dysrhythmias
 - q. Know techniques of pediatric advanced life support in cardiopulmonary arrest

D. Neonatal resuscitation

1. Etiology
 - a. Know common etiologies of neonatal distress requiring resuscitation
2. Pathophysiology
 - a. Understand the pathophysiology of neonatal cardiopulmonary instability
 - b. Understand the role of thermal regulation in neonatal distress and instability
3. Recognition
 - a. Recognize signs and symptoms of neonatal distress
 - b. Recognize and interpret relevant monitoring studies for neonates in distress
 - c. Recognize the maternal risk factors associated with neonatal distress
 - d. Recognize and interpret relevant laboratory studies for neonates in distress
4. Management
 - a. Plan the step-wise intervention in treatment of neonatal distress
 - b. Plan management of meconium aspiration
 - c. Know modalities for vascular access in the neonate
 - d. Know special management techniques for congenital anomalies leading to acute neonatal instability
 - e. Know the indications, applications, and complications for administration of volume expanders and blood products in newborn resuscitation

E. Postresuscitation management

1. General

- a. Plan anticipated pharmacologic interventions during the post-arrest period
- b. Know indications and procedures for transport to a higher-level facility
- c. Know the prognostic factors for the outcome of cardiopulmonary arrest
- d. Plan mechanical interventions during the post-arrest period, including hypothermia

F. Other

2. **Trauma Care**

A. Major trauma

1. General principles

- a. Recognize common patterns of injury in children with major trauma with respect to anatomic and physiologic differences by age
- b. Recognize response to injury in children with major trauma with respect to anatomic and physiologic differences by age
- c. Know the importance of mechanisms of injury in the evaluation of children with major trauma
- d. Understand priorities in the management of children with major trauma
- e. Know triage principles in the management of victims of major trauma
- f. Understand the importance of thermal regulation in the management of children with major trauma
- g. Understand the principles of primary versus secondary survey
- h. Understand the importance of appropriate fluid resuscitation in the management of children with major trauma
- i. Understand the importance of appropriate airway management in children with major trauma

2. Evaluation and stabilization

a. Primary survey

1. Recognize airway obstruction in children with major trauma
2. Anticipate the risk of cervical spine injury associated with major trauma
3. Understand the concept that cervical cord injury can occur in the absence of a radiologic abnormality
4. Know causes of acute cardiopulmonary collapse after major trauma
5. Distinguish causes of shock in the trauma patient
6. Know methods of rapid assessment of the central nervous system
7. Know causes of delayed acute cardiopulmonary collapse after major trauma

b. Trauma resuscitation

1. Plan the management of a child with an obstructed airway in the setting of major trauma
2. Know the components of rapid-sequence intubation for a child with major trauma (eg, no thiopental)
3. Know options for vascular access in a child with major trauma
4. Know proper cervical spine alignment techniques for children who are supine on a spine board
5. Understand blood product administration in the management of traumatic shock
6. Define appropriate fluids and rates for patients in traumatic shock

7. Understand the importance of control of external hemorrhage in children with major multiple trauma
 8. Know the indications for thoracotomy in the emergency department
 9. Know the indications and contraindications for bladder catheterization
 10. Understand indications and contraindications for nasogastric intubation
 - c. Secondary survey
 1. Recognize signs and symptoms of head injury in a child with major trauma
 2. Recognize signs and symptoms of neck injury in a child with major trauma
 3. Recognize signs and symptoms of eye injury in a child with major trauma
 4. Recognize signs and symptoms of spinal injury in a child with major trauma
 5. Recognize signs and symptoms of chest injury in a child with major trauma
 6. Recognize signs and symptoms of cardiac injury in a child with major trauma
 7. Recognize signs and symptoms of abdominal injury in a child with major trauma
 8. Recognize signs and symptoms of extremity injury in a child with major trauma
 9. Recognize signs and symptoms of pelvic fracture in a child with major trauma
 10. Recognize signs and symptoms of neurovascular injury in a child with major trauma
 11. Recognize the indications for immediate reduction of fractures or dislocations in the management of children with major trauma
 - d. Ancillary studies
 1. Recognize the importance of x-ray study of the chest in the early evaluation of a major trauma victim
 2. Understand imaging options for patients with cervical spine injuries
 3. Prioritize the imaging of skeletal injuries in a major trauma victim
 4. Recognize abnormalities on x-ray study of the chest
 5. Be able to interpret the results of urinalysis
 6. Be able to interpret blood gas values
 7. Understand the role of ultrasound in the management of a major trauma victim
 8. Understand the role of end-tidal CO₂ analysis in the management of a child with major trauma
 9. Be able to interpret liver enzyme test results
- B. Neurologic/spinal trauma
1. Central nervous system---blunt head trauma
 - a. Etiology
 1. Know common etiologies of blunt head trauma in children, including nonaccidental trauma
 - b. Pathophysiology
 1. Understand the mechanisms leading to increased intracranial pressure following blunt head trauma
 2. Understand the significance and complications of skull fracture
 - c. Recognition
 1. Plan the evaluation and management of basilar skull fractures
 2. Recognize the signs and symptoms of intracranial hemorrhage following blunt trauma

3. Recognize the signs and symptoms of increased intracranial pressure and cerebral herniation following blunt head trauma
4. Recognize respiratory insufficiency in patients with head trauma
5. Recognize and interpret computed tomography of the head in a patient with blunt head trauma
6. Know the indications for magnetic resonance imaging of the head in blunt head trauma
7. Know the indications for computed tomography of the head in a patient with blunt head trauma
- d. Management
 1. Plan treatment priorities in the management of children with head injuries due to blunt trauma
 2. Know the role of pharmacology in the management of children with head injuries due to blunt trauma
 3. Know the role of surgery in the management of children with head injuries due to blunt trauma
 4. Plan airway management for children with head injuries due to blunt trauma
 5. Know the management of increased intracranial pressure following blunt trauma
 6. Know the principles of management using hyperventilation after severe blunt head injury
 7. Know the principles of the management of cerebral contusion
 8. Know the principles of the management of minor head injury
2. Central nervous system---penetrating head trauma
 - a. Etiology
 - b. Pathophysiology
 1. Understand the relationship between ballistics and penetrating injury to the brain
 - c. Recognition
 1. Recognize the signs of increased intracranial pressure in a child with a penetrating injury to the central nervous system
 2. Recognize the potential for infection following penetrating injury to the central nervous system
 - d. Management
 1. Know the indications for radiographic studies in evaluating the condition of children with penetrating injuries to the head
 2. Plan the management of children with penetrating injuries to the head
3. Cervical spine injury
 - a. Etiology
 1. Understand the most common etiologies of cervical spine injuries in children
 2. Know mechanisms and patterns of injury associated with cervical spine injuries in children
 - b. Pathophysiology
 1. Understand the types and mechanisms of cervical spine and spinal cord injuries
 2. Understand age-related differences in cervical spine injuries
 3. Understand the mechanism of injury of a Jefferson fracture

4. Differentiate between neurologically stable and unstable cervical spine injuries
- c. Recognition
 1. Recognize signs and symptoms of spinal cord injury syndromes (anterior, central, complete, posterior, Brown-Sequard) in children
 2. Recognize the signs and symptoms of findings suggestive of cervical spine injury
 3. Know indications for radiographic evaluation of cervical and spinal cord injuries
 4. Recognize age-based radiologic variants of the spine and be able to differentiate from pathologic cervical spine injuries
 5. Know the role of pharmacologic agents in the management of spinal cord injury
- d. Treatment
 1. Plan options for stabilization of cervical spine injuries in pediatric patients of different ages
4. Thoracolumbar Spine Injury
 - a. Etiology
 1. Know the most common life-threatening causes of thoracolumbar spine injuries in children
 - b. Pathophysiology
 1. Understand the types and mechanisms of thoracolumbar spine injuries
 2. Understand neuroanatomic clinical correlation in thoracolumbar spine injuries
 - c. Recognition
 1. Know the significance of symptoms and physical examination findings after blunt thoracolumbar trauma
 2. Know radiographic evaluation of thoracolumbar spine injuries, and recognize radiologic variants
 3. Recognize injuries commonly found in conjunction with thoracolumbar spine injuries
 - d. Treatment
 1. Plan options for evaluation, stabilization, and management of thoracolumbar spine injuries
5. Peripheral Nervous System
 - a. Recognize the signs and symptoms of peripheral nerve injury
 - b. Plan the management of peripheral nerve and plexus injury
- C. Orofacial/Eye/Ear Trauma
 1. Face
 - a. Know common physical examination findings seen in facial fractures in children
 - b. Recognize urgent complications of facial, orbital, and nasal fractures (eg, retro-orbital hematoma, cribriform plate fractures, and septal hematoma)
 - c. Recognize and interpret radiographic evaluation of facial trauma
 - d. Differentiate the types of dental injuries and their treatment in pediatric patients of different ages
 - e. Recognize the physical examination findings and plan the management of mandibular fracture
 - f. Plan the management of common facial fractures in children
 2. Eye

- a. Recognize hyphema and plan appropriate management
 - b. Recognize ocular trauma and plan appropriate management
 - c. Recognize orbital fracture and plan appropriate management
 - d. Recognize penetrating injury to the eye and plan appropriate management
 - e. Understand the significance of visual loss following trauma
 - f. Recognize presentations of ocular foreign bodies and plan appropriate management
3. Ear
- a. Recognize urgent complications of ear trauma, including perichondral hematoma, hearing loss, and traumatic otorrhea
 - b. Plan the management of common types of ear trauma
- D. Visceral trauma
1. Thorax—blunt trauma
- a. Etiology
 - 1. Know the types of intrathoracic injuries due to blunt chest trauma
 - 2. Know the most common life-threatening causes of blunt thoracic injuries in children
 - b. Pathophysiology
 - 1. Understand the pathophysiology of blunt trauma and differentiate it between adults and children
 - c. Recognition
 - 1. Recognize the signs and symptoms of pulmonary contusion following blunt chest trauma
 - 2. Recognize the signs and symptoms of cardiac trauma following blunt chest trauma
 - 3. Recognize the signs and symptoms of rib fractures (isolated and flail chest) following blunt chest trauma
 - 4. Recognize the signs and symptoms of hemothorax following blunt chest trauma
 - 5. Differentiate between simple and tension pneumothorax following blunt chest trauma
 - 6. Recognize the signs and symptoms of great vessel trauma following blunt chest trauma
 - 7. Recognize the signs and symptoms of pericardial tamponade following blunt chest trauma
 - 8. Recognize the signs and symptoms of traumatic asphyxia following blunt chest trauma
 - 9. Differentiate simple pneumothorax from tension pneumothorax
 - 10. Differentiate tension pneumothorax from massive hemothorax
 - 11. Recognize the signs and symptoms of sucking chest wounds following blunt chest trauma
 - 12. Recognize the complications of tracheobronchial rupture following blunt chest trauma
 - 13. Recognize the complications of diaphragm injury following blunt chest trauma
 - 14. Recognize common patterns and mechanisms of injury in children with blunt thoracic trauma
 - d. Management

1. Plan the management of rib fractures (isolated and flail chest) following blunt chest trauma
 2. Plan the management of pulmonary contusion following blunt chest trauma
 3. Plan the management of simple and tension pneumothorax following blunt chest trauma
 4. Plan the management of a hemothorax following blunt chest trauma
 5. Plan the management of sucking chest wounds following blunt chest trauma
 6. Plan the management of traumatic asphyxia following blunt chest trauma
 7. Plan the management of tracheobronchial rupture following blunt chest trauma
 8. Plan the management of cardiac trauma following blunt chest trauma
 9. Plan the management of great vessel injury following blunt chest trauma
 10. Plan the management of cardiac tamponade following blunt chest trauma
- e. Ancillary Studies
1. Know the indications for and interpret the findings of plain x-ray studies following blunt chest trauma
 2. Know the indications for angiography following blunt chest trauma
 3. Know the indications for and interpret the findings of ultra-sonography following blunt chest trauma
 4. Know the indications for echocardiography following blunt chest trauma
 5. Know the indications for surgery following blunt chest trauma (ie, massive hemothorax, tamponade, great vessel injury)
2. Thorax—Penetrating Injury
- a. Etiology
1. Know the major causes of nonthoracic injuries associated with penetrating chest trauma
 2. Know the most common life-threatening causes of penetrating thoracic injuries in children
- b. Pathophysiology
1. Understand the pathophysiology of the complications of penetrating thoracic injuries in children
- c. Recognition
1. Recognize the signs and symptoms of hemothorax following penetrating chest trauma
 2. Differentiate between the signs and symptoms of simple vs. tension pneumothorax following penetrating chest trauma
 3. Recognize the signs and symptoms of cardiac trauma following penetrating chest trauma
 4. Recognize the signs and symptoms of great vessel injury following penetrating chest trauma
 5. Recognize the signs and symptoms of tracheobronchial injury and esophageal injury following penetrating chest trauma
 6. Recognize common patterns and mechanisms of injury in children with penetrating chest trauma
- d. Management
1. Plan the management of simple and tension pneumothorax following penetrating chest trauma

2. Plan the management of hemothorax following penetrating chest trauma
3. Plan the management of cardiac tamponade following penetrating chest trauma
4. Plan the management of great vessel injury following penetrating chest trauma
5. Plan the management of tracheobronchial and esophageal injury following penetrating chest trauma
6. Know the indications for emergent open thoracotomy in the emergency department
- e. Ancillary Studies
 1. Know indications for and interpret findings of plain x-ray studies following penetrating chest trauma
 2. Know indications for angiography following penetrating chest trauma
 3. Know indications for and interpret findings of ultrasonography following penetrating chest trauma
 4. Know indications for echocardiography following penetrating chest trauma
3. Abdomen—blunt trauma
 - a. Etiology
 1. Know the types of abdominal injuries due to blunt trauma
 - b. Pathophysiology
 1. Understand the hemodynamic consequences of abdominal injuries due to blunt trauma
 2. Understand the indications for urgent laparotomy in a child with abdominal injury due to blunt trauma
 - c. Recognition
 1. Recognize limits of physical examination and radiologic assessment of abdominal and retroperitoneal trauma, especially bowel, pancreatic, and mesenteric injuries
 - d. Management
 1. Plan volume resuscitation for a child with abdominal injury due to blunt trauma
 2. Plan the management for a child with spleen, hepatic, renal, pancreatic, bowel, and bladder injuries due to blunt trauma
 - e. Ancillary Studies
 1. Know indications for, limitations of, and interpret findings of non-radiologic tests, including hemoglobin, base deficit (lactate), liver function studies, amylase, urinalysis and peritoneal lavage following blunt abdominal trauma
 2. Know indications for and interpret findings of computed tomography following blunt abdominal trauma
 3. Know indications for and interpret findings of plain x-ray studies following blunt abdominal trauma
 4. Know indications for and interpret findings of ultrasonography following blunt abdominal trauma
 5. Know common patterns and mechanisms of abdominal injury in children with blunt trauma
4. Abdomen/Flank—penetrating trauma
 - a. Etiology
 1. Know and differentiate the major causes of thoracic injury following penetrating abdominal and flank injuries

- b. Pathophysiology
- c. Recognition
 - 1. Recognize common patterns and mechanisms of thoracic injury in children with penetrating abdominal/flank injuries
- d. Management
 - 1. Plan the management of thoracic injuries following penetrating abdominal/flank injuries
 - 2. Know the indications for operative intervention following penetrating abdominal/flank injury
 - 3. Plan the management of abdominal injuries from penetrating abdominal/flank injuries
- e. Ancillary Studies
 - 1. Know the indications for and interpret the findings on plain x-ray study following penetrating abdominal/flank injury
 - 2. Know the indications for and interpret the findings of ultrasonography following penetrating abdominal/flank injury
- 5. Genitourinary System
 - a. Etiology
 - b. Pathophysiology
 - 1. Understand the importance of the mechanism of injury and pelvic trauma in evaluating genitourinary tract damage
 - c. Recognition
 - 1. Recognize the signs and symptoms of urethral trauma
 - 2. Recognize the signs and symptoms of genitourinary trauma
 - 3. Recognize the signs and symptoms of bladder trauma
 - 4. Recognize common patterns and mechanisms of pelvic injury
 - d. Management
 - 1. Plan the management of a child with post-traumatic hematuria
 - 2. Plan the diagnostic evaluation and the management of a patient with genitourinary trauma
 - 3. Plan the management of a patient with bladder trauma
 - e. Ancillary Studies
 - 1. Recognize the importance of and limitations of urinalysis, intra- venous pyelography, ultrasonography, and computed tomography in assessing genitourinary injuries
- 6. Neck—blunt trauma
 - a. Understand the significance of injuries associated with blunt trauma to the neck
 - b. Plan the evaluation and management of a child with blunt trauma to the neck
- 7. Neck—penetrating trauma
 - a. Plan the evaluation and management of penetrating injury to the neck differentiating by symptoms and location
 - b. Recognize potential injuries associated with penetrating trauma to the neck
- E. Musculoskeletal trauma
 - 1. General principles
 - a. Etiology
 - 1. Know the injuries commonly associated with neurovascular compromise

- b. Pathophysiology
 - 1. Understand the pathophysiology of ligamentous injuries, as compared with growth plate injuries
- c. Recognition
 - 1. Know the five types of physical fractures defined by the Salter-Harris classification system
 - 2. Recognize greenstick (incomplete) and buckle fractures
 - 3. Recognize the signs and symptoms of compartment syndrome
 - 4. Recognize the importance of indirect signs (fluid, fat pads, soft tissue disruption, bony relationships, and angles) as indicators of fractures
- d. Management
 - 1. Know the importance of immobilization in the initial management of fractures
 - 2. Plan the management of osteochondral fractures
 - 3. Plan the management of epiphyseal injuries
 - 4. Plan the management of plastic and bowing fractures
 - 5. Plan the treatment of compartment syndrome
 - 6. Plan the management of repetitive stress injuries
- 2. Specific fractures
 - a. Etiology/pathophysiology
 - 1. Know and understand the mechanisms of injury in clavicular fractures
 - 2. Know and understand the mechanisms of injury in proximal humerus and humeral shaft fractures
 - 3. Know and understand the mechanisms of injury in supracondylar fractures
 - 4. Know and understand the mechanisms of injury in fractures of the distal radius and ulna
 - 5. Know and understand the mechanisms of injury in buckle of radius fractures
 - 6. Know and understand the mechanisms of injury in navicular fractures
 - 7. Know and understand the mechanisms of injury in metacarpal fractures
 - 8. Know and understand the mechanisms of injury in phalangeal fractures
 - 9. Know and understand the mechanisms of injury in femoral fractures
 - 10. Know and understand the mechanisms of injury in pelvic fractures
 - 11. Know and understand the mechanisms of injury in tibial fractures
 - 12. Know and understand the mechanisms of injury in fibular fractures
 - 13. Know and understand the mechanisms of injury in calcaneal fractures
 - 14. Recognize a child with a calcaneal fracture
 - 15. Know and understand the mechanisms of injury in metatarsal fractures
 - 16. Recognize a child with a metatarsal fracture
 - 17. Know and understand the mechanisms of injury of patellar fractures
 - 18. Know and understand the mechanism of injury for fractures of the distal humerus
 - 19. Know and understand the mechanism of injury for injury/fractures of the olecranon
 - 20. Know and understand the mechanism of injury for ulnar shaft fractures
 - 21. Know and understand the mechanism for radial head fractures
 - 22. Know and understand the mechanisms of injury for Monteggia fractures
 - b. Recognition

1. Recognize a clavicular fracture
 2. Recognize proximal humerus and humeral shaft fractures
 3. Recognize a child with a supracondylar fracture
 4. Recognize a child with fractures of the distal radius and ulna
 5. Recognize a child with a buckle fracture of radius
 6. Recognize a child with a navicular fracture
 7. Recognize a child with a metacarpal fracture
 8. Recognize a child with a phalangeal fracture
 9. Recognize a child with a femoral fracture
 10. Recognize types of pelvic fractures and their differential association with abdominal and genitourinary trauma
 11. Recognize a child with a tibial fracture
 12. Recognize a child with a fibular fracture
 13. Recognize a child with a patellar fracture or patellar sleeve fracture
 14. Recognize radiographic evidence of osteochondroses
 15. Recognize a child with a fracture of the distal humerus
 16. Recognize a child with a fracture of the olecranon
 17. Recognize a child with an ulnar shaft fracture
 18. Recognize a child with a radial head fracture
 19. Recognize a child with a Monteggia fracture
- c. Management
1. Plan the management of a child with a clavicular fracture
 2. Plan the management of a child with a humeral shaft fracture
 3. Plan the management of a child with a pelvic fracture
 4. Plan the management of a child with a supracondylar fracture
 5. Plan the management of a child with fractures of the distal radius and ulna
 6. Plan the management of a child with a buckle of radius fracture
 7. Plan the management of a child with a navicular fracture
 8. Plan the management of a child with a metacarpal fracture
 9. Plan the management of a child with a phalangeal fracture
 10. Plan the management of a child with a femoral fracture
 11. Plan the management of a child with a tibial fracture
 12. Plan the management of a child with a fibular fracture
 13. Plan the management of a child with patellar fracture or patellar avulsion
 14. Plan the management of osteochondroses
 15. Plan the management for fractures of the distal humerus
 16. Plan the management for injury/fractures of the olecranon
 17. Plan the management for ulnar shaft fractures
 18. Plan the management for radial head fractures
 19. Plan the management for a child with a Monteggia fracture
 20. Plan the management for a child with a metatarsal fracture
 21. Plan the management for a child with a calcaneal fracture
3. Specific dislocations and avulsions
- a. Etiology/pathophysiology
1. Know and understand the mechanism of injury in dislocation of the shoulder
 2. Know and understand the mechanism of injury in dislocation of the elbow

3. Know and understand the mechanism of injury in dislocation (subluxation) of the radial head
 4. Know and understand the mechanism of injury in metacarpophalangeal dislocation
 5. Know and understand the mechanism of injury in interphalangeal dislocation
 6. Know and understand the mechanism of injury in dislocation of the knee
 7. Know and understand the mechanism of injury in patellar dislocation
 8. Know and understand the mechanism of injury in dislocation of the claviculomanubrial joint
 9. Know and understand the mechanism of injury in dislocation of the hip
 10. Know and understand the mechanism of injury in ankle dislocation
 11. Recognize carpal bone dislocations (eg, lunate)
- b. Recognition
1. Recognize dislocation of the shoulder
 2. Recognize dislocation of the elbow
 3. Recognize a child with dislocation (subluxation) of the radial head
 4. Recognize a child with metacarpophalangeal dislocation
 5. Recognize a child with interphalangeal dislocation
 6. Recognize dislocation of the knee
 7. Recognize patellar dislocation
 8. Recognize dislocation of the claviculomanubrial joint
 9. Recognize dislocation of the hip
 10. Recognize ankle dislocation
 11. Recognize wrist dislocation
 12. Recognize avulsion injuries (eg, AIIS, ASIS, ischial tuberosity, tibial spine, tibial tuberosity avulsions)
 13. Recognize a carpal bone dislocation (eg, lunate)
- c. Management
1. Plan the management of a child with dislocation of the shoulder
 2. Plan the management of a child with dislocation of the elbow
 3. Plan the management of a child with dislocation of the knee
 4. Plan the management of a child with patellar dislocation
 5. Plan the management of a child with dislocation of the claviculomanubrial joint
 6. Plan the management of a child with dislocation of the hip
 7. Plan the management of a child with ankle dislocation
 8. Plan the management of a child with wrist dislocation
 9. Plan the management of a child with dislocation (subluxation) of the radial head
 10. Plan the management of a child with metacarpophalangeal dislocation
 11. Plan the management of a child with interphalangeal dislocation
 12. Plan the management of avulsion injuries (eg, AIIS, ASIS, ischial tuberosity, tibial spine, tibial tuberosity avulsions)
- F. Wound management
1. General principles
 - a. Etiology/pathophysiology
 1. Know the etiology and understand the pathophysiology of distal neurovascular function

2. Know the roles of physical restraint, chemical sedation and analgesia, and nonpharmacologic methods in the management of injured patients
 3. Know the risks associated with penetrating injuries to the extremities
 4. Know the pharmacology of agents used in sedation
 - b. Recognition
 1. Recognize the signs and symptoms of potential tendon injuries
 2. Recognize the signs and symptoms of distal neurovascular injuries
 - c. Management
 1. Know the indications for administration of tetanus, rabies, and antibacterial prophylaxis
 2. Know the appropriate monitoring for pharmacologic sedation and analgesia
 3. Know the role and risks of regional and local anesthetic blocks in the management of injured children
 4. Plan physical restraint, chemical sedation and analgesia, and nonpharmacologic methods for the management of children with orthopedic injuries
2. Lacerations and punctures
- a. Etiology/pathogenesis
 1. Understand the physiology of wound healing
 2. Understand the importance of wound exploration
 3. Know the indications for primary, secondary, and delayed primary closure of wounds
 4. Understand the role of irrigation and debridement in wound management
 5. Recognize and know complications of puncture wounds, eg, puncture wounds of the foot
 6. Know the indication for use and the complications of topical anesthetics for wound closure
 7. Plan the management of nailbed injuries
 - b. Recognition
 1. Recognize the patterns and sites of wounds requiring cosmetic plastic closure and know potential complications
 2. Recognize the complications of puncture wounds, eg, puncture wounds of the foot
 - c. Management
 1. Know the advantages, disadvantages, indications, and contraindications of the use of different types of suture material
 2. Plan closure of a lip laceration involving the vermillion border
 3. Differentiate lacerations best closed using tissue adhesives
 4. Plan laceration repair using appropriate methods of suturing (eg, horizontal and vertical mattress stitches, corner stitch)
 5. Know the importance of irrigation and debridement in wound management
 6. Plan the appropriate use of topical anesthetics for wound closure
3. Burns
- a. Plan the appropriate evaluation and management of thermal burns
 - b. Know which specific burn injuries should be transferred to a burn center for definitive management
 - c. Differentiate between depth and degree of thermal burns

- d. Know the importance of and methods for calculating total body surface area burned
 - e. Know how to calculate fluid resuscitation and plan emergency management for a child with significant thermal burns
 - f. Know the evaluation and management of inhalational burn injuries
4. Abscesses
 - a. Differentiate between a paronychia and a felon and plan the management of each
 - b. Plan the management of abscesses in various locations
 - c. Recognize complications associated with perirectal abscesses
 5. Other
 - a. Recognize the importance of the radiographic evaluation for foreign bodies in wounds
 - b. Differentiate between foreign bodies requiring urgent removal and those that can be left in the body
 - c. Recognize the complications of major vascular injury
 - d. Plan the management of amputated parts
 - e. Plan the management of major vascular injury
3. **Emergencies Treated Medically**
 - A. Allergic
 1. Asthma
 - a. Know the etiology and understand the pathophysiology of asthma
 - b. Know causes of acute deterioration in asthma
 - c. Recognize signs and symptoms of respiratory failure in asthma
 - d. Plan management of acute asthma
 - e. Plan management of chronic asthma
 - f. Recognize and interpret relevant laboratory and imaging studies in the management of asthma
 2. Anaphylaxis
 - a. Know the etiology and understand the pathophysiology of anaphylaxis/anaphylactoid reactions
 - b. Recognize signs and symptoms of anaphylaxis/anaphylactoid reactions
 - c. Recognize and interpret relevant laboratory and imaging studies for anaphylaxis/anaphylactoid reactions
 - d. Plan management of acute anaphylaxis/anaphylactoid reactions
 3. Serum sickness
 - a. Know the etiology and understand the pathophysiology of serum sickness
 - b. Recognize signs and symptoms of serum sickness
 - c. Plan management of acute serum sickness
 - B. Cardiovascular
 1. Congenital heart disease
 - a. Understand the pathophysiology and anatomy of congenital heart disease
 - b. Recognize signs and symptoms and life-threatening complications of congenital cardiac lesions by age
 - c. Recognize and interpret relevant laboratory, imaging, and monitoring studies for congenital heart disease
 - d. Plan management of acutely symptomatic congenital heart disease

- e. Know the postoperative residual and late complications following the repair of congenital heart defects
2. Congestive heart failure
 - a. Differentiate the etiology by age and understand the pathophysiology of congestive heart failure
 - b. Recognize signs and symptoms of congestive heart failure
 - c. Recognize and interpret relevant laboratory, imaging, and monitoring studies for congestive heart failure
 - d. Plan management of acute congestive heart failure
3. Cardiac dysrhythmias
 - a. Know the etiology and pathophysiology of cardiac dysrhythmias
 - b. Recognize signs and symptoms of cardiac dysrhythmias
 - c. Recognize and interpret relevant laboratory, imaging, and monitoring studies for cardiac dysrhythmias
 - d. Plan management of acute cardiac dysrhythmias
4. Pericardial disease
 - a. Know the etiology and understand the pathophysiology of pericardial disease
 - b. Recognize signs and symptoms of pericardial disease
 - c. Recognize and interpret relevant laboratory, imaging, and monitoring studies for pericardial disease
 - d. Plan management of acute pericardial disease
5. Infectious endocarditis
 - a. Know the etiology and understand the pathophysiology of infectious endocarditis
 - b. Recognize signs and symptoms of infectious endocarditis
 - c. Plan prophylaxis against infectious endocarditis
 - d. Recognize and interpret relevant laboratory, imaging, and monitoring studies for infectious endocarditis
 - e. Recognize life-threatening complications of infectious endocarditis
 - f. Plan management of acute infectious endocarditis
6. Myocarditis
 - a. Know the etiology and understand the pathophysiology of myocarditis
 - b. Recognize signs and symptoms of myocarditis
 - c. Recognize and interpret relevant laboratory, imaging, and monitoring studies for myocarditis
 - d. Recognize life-threatening complications of myocarditis
 - e. Plan management of acute myocarditis
7. Rheumatic fever, acute
 - a. Know the etiology and understand the pathophysiology of rheumatic fever
 - b. Recognize signs and symptoms of rheumatic fever
 - c. Recognize and interpret relevant laboratory, imaging, and monitoring studies for rheumatic fever
 - d. Plan management of acute rheumatic fever
8. Deep vein thrombosis
 - a. Know the etiology and understand the pathophysiology of deep vein thrombosis
 - b. Recognize the signs and symptoms of deep vein thrombosis

- c. Recognize and interpret relevant laboratory and imaging studies for deep vein thrombosis
 - d. Plan the management of deep vein thrombosis
- C. Dermatologic
- 1. General
 - a. Differentiate dermatologic conditions that benefit from topical corticosteroids from those aggravated by them
 - b. Differentiate exanthems associated with serious or life-threatening health conditions from more innocent rashes
 - c. Recognize the cutaneous manifestations of systemic diseases (eg, HIV, Lyme disease, SLE, RA)
 - 2. Atopic dermatitis
 - a. Know typical sites of atopic dermatitis in infants and children
 - b. Recognize signs and symptoms of atopic dermatitis
 - c. Plan pharmacologic management of acute atopic dermatitis
 - d. Know the triggers and exacerbating factors associated with exacerbations of atopic dermatitis in childhood
 - e. Know the role of bacterial and viral superinfection in exacerbation of atopic dermatitis and describe treatment
 - f. Differentiate between atopic dermatitis and other similar skin conditions
 - g. Recognize various appearances of atopic dermatitis in children with different pigmentation
 - h. Plan the nonpharmacologic and adjunct management of atopic dermatitis
 - 3. Seborrheic dermatitis
 - a. Know the typical age(s) of onset of seborrheic dermatitis
 - b. Recognize signs and symptoms of seborrheic dermatitis
 - c. Plan management of acute seborrheic dermatitis
 - d. Differentiate between seborrheic dermatitis and other similar skin conditions
 - 4. Allergic contact dermatitis
 - a. Know common and uncommon causes of allergic contact dermatitis
 - b. Recognize signs and symptoms of allergic contact dermatitis
 - c. Plan management of acute allergic contact dermatitis
 - 5. Diaper dermatitis
 - a. Know the etiology of diaper dermatitis
 - b. Recognize signs and symptoms of diaper dermatitis
 - c. Plan management of acute diaper dermatitis
 - d. Differentiate irritant diaper dermatitis from candidal and bacterial infections
 - 6. Erythema multiforme
 - a. Differentiate erythema multiforme minor from erythema multiforme major (Stevens-Johnson syndrome)
 - b. Recognize the signs and symptoms of erythema multiforme minor
 - c. Recognize and interpret relevant laboratory studies for erythema multiforme
 - d. Recognize life-threatening complications of erythema multiforme major (Stevens-Johnson syndrome)
 - e. Plan the management of uncomplicated erythema multiforme minor
 - f. Know the common etiologies of erythema multiforme

- g. Recognize the signs and symptoms of erythema multiforme major (Stevens-Johnson syndrome)
 - h. Differentiate between erythema multiforme major (Stevens-Johnson syndrome) and other exfoliative dermatoses
 - i. Plan the management of erythema multiforme major (Stevens-Johnson syndrome)
7. Drug reactions in the skin (drug eruptions)
- a. Know drugs commonly associated with drug eruptions
 - b. Recognize signs and symptoms of drug reactions in the skin, including urticaria, fixed drug eruptions, and photodermatitis
 - c. Recognize serious complications associated with drug reactions in the skin
 - d. Differentiate between drug reactions in the skin and common dermatoses and exanthems
8. Staphylococcal scalded skin syndrome
- a. Understand the pathophysiology of staphylococcal scalded skin syndrome
 - b. Recognize signs and symptoms of staphylococcal scalded skin syndrome
 - c. Recognize life-threatening complications of staphylococcal scalded skin syndrome
 - d. Plan management of acute staphylococcal scalded skin syndrome
 - e. Know typical ages associated with staphylococcal scalded skin syndrome
 - f. Distinguish among various dermatoses associated with toxin-producing staphylococci, including staphylococcal scalded skin syndrome, bullous impetigo
9. Bites and infestations
- a. Differentiate the etiology by age and understand pathophysiology of bites and infestations
 - b. Recognize signs and symptoms of bites and infestations
 - c. Recognize and interpret relevant laboratory studies for bites and infestations
 - d. Plan management of acute bites and infestations
10. Superficial fungal infections of the skin
- a. Differentiate by age, race, and climate the etiology of superficial fungal infections of the skin
 - b. Recognize signs and symptoms of superficial fungal infections of the skin
 - c. Recognize and interpret relevant laboratory studies for superficial fungal infections of the skin
 - d. Plan management of acute superficial fungal infections of the skin
11. Urticaria
- a. Know the common etiologies of urticaria
 - b. Recognize signs and symptoms of urticaria
 - c. Recognize conditions associated with urticaria that may be life-threatening
 - d. Plan management of acute urticaria
12. Pityriasis rosea
- a. Recognize signs and symptoms of pityriasis rosea
 - b. Plan management of acute pityriasis rosea
13. Warts/plantar warts/molluscum contagiosum
- a. Know etiology of warts/plantar warts/molluscum contagiosum
 - b. Recognize signs and symptoms of warts/plantar warts/molluscum contagiosum
 - c. Plan management of warts/plantar warts/molluscum contagiosum
14. Herpes simplex virus, acquired/congenital

- a. Know the risk factors associated with congenital herpes simplex virus
 - b. Recognize signs and symptoms associated with congenital herpes simplex virus infection
 - c. Recognize and interpret relevant laboratory and imaging studies for herpes simplex virus
 - d. Recognize life-threatening complications of herpes simplex virus, acquired and congenital
 - e. Plan management of acute herpes simplex virus, acquired and congenital
 - f. Understand the pathophysiology of acquired herpes simplex virus infection
15. Impetigo
- a. Plan the management of impetigo
 - b. Recognize signs and symptoms of impetigo
- D. Endocrine
1. Diabetes Mellitus
- a. Recognize signs and symptoms of diabetic ketoacidosis
 - b. Plan the management of acute diabetic ketoacidosis
 - c. Understand the pathophysiology of diabetic ketoacidosis
 - d. Recognize the life-threatening complications of diabetic ketoacidosis
 - e. Plan the management of non-ketotic hyperglycemia
 - f. Plan the fluid management of diabetic ketoacidosis
 - g. Plan the pharmacologic management of diabetic ketoacidosis
 - h. Recognize and interpret relevant laboratory studies in diabetic ketoacidosis
2. Hypoglycemia
- a. Differentiate the etiology by age and understand the pathophysiology of hypoglycemia
 - b. Recognize signs and symptoms of hypoglycemia
 - c. Plan management of acute hypoglycemia
 - d. Understand the pathophysiology and treatment of the metabolic complications of chronic hypoglycemic disorders
 - e. Recognize and interpret relevant laboratory studies for hypoglycemia
3. Pituitary Disorders
- a. Recognize signs and symptoms of hypopituitarism
 - b. Plan the management of acute hypopituitarism
 - c. Recognize the complications of acute and chronic hypopituitarism
 - d. Understand the pathophysiology of hypopituitarism
 - e. Know the precipitating factors of hypopituitarism
 - f. Differentiate by age the signs and symptoms of hypopituitarism
 - g. Recognize signs and symptoms of pituitary tumors
4. Adrenal Disorders
- a. Recognize signs and symptoms of adrenal insufficiency
 - b. Plan the management of acute adrenal insufficiency
 - c. Understand the pathophysiology of adrenal insufficiency
 - d. Recognize the complications of acute adrenal insufficiency
 - e. Recognize signs and symptoms of hyperaldosteronism
 - f. Recognize signs and symptoms of Cushing syndrome
 - g. Know common causes of acute adrenal insufficiency

- h. Know the precipitating factors of acute adrenal insufficiency
- 5. Adrenal hyperplasia, congenital
 - a. Know the etiology and understand the pathophysiology of adrenal hyperplasia
 - b. Recognize signs and symptoms of adrenal hyperplasia
 - c. Recognize and interpret relevant laboratory and imaging studies for adrenal hyperplasia
 - d. Recognize life-threatening complications of adrenal hyperplasia
 - e. Plan management of acute adrenal hyperplasia
- 6. Pheochromocytoma
 - a. Recognize signs and symptoms of pheochromocytoma
 - b. Plan management of acute pheochromocytoma
 - c. Recognize life-threatening complications of pheochromocytoma
 - d. Understand the pathophysiology of pheochromocytoma
- 7. Diabetes insipidus
 - a. Know the etiology and understand the pathophysiology of diabetes insipidus
 - b. Recognize signs and symptoms of diabetes insipidus
 - c. Recognize and interpret relevant laboratory and imaging studies for diabetes insipidus
 - d. Recognize life-threatening complications of diabetes insipidus
 - e. Plan management of acute diabetes insipidus
- 8. Syndrome of inappropriate ADH secretion
 - a. Know the common causes of syndrome of inappropriate ADH secretion
 - b. Recognize signs and symptoms of syndrome of inappropriate ADH secretion
 - c. Recognize and interpret relevant laboratory and imaging studies for syndrome of inappropriate ADH secretion
 - d. Recognize life-threatening complications of syndrome of inappropriate ADH secretion
 - e. Plan management of acute syndrome of inappropriate ADH secretion
- 9. Disorders of calcium metabolism
 - a. Hypoparathyroidism and hyperparathyroidism
 - 1. Know the etiology and understand the pathophysiology of hypoparathyroidism and hyperparathyroidism
 - 2. Recognize the signs and symptoms of hypoparathyroidism and hyperparathyroidism
 - 3. Plan the management of complications of hypoparathyroidism and hyperparathyroidism
 - b. Rickets
 - 1. Know the etiology and understand the pathophysiology of rickets
 - 2. Recognize the signs and symptoms and life-threatening complications of rickets
 - 3. Plan the management of the complications of rickets
- 10. Hyperthyroidism
 - a. Know the etiology and understand the pathophysiology of hyperthyroidism and thyrotoxicosis
 - b. Recognize signs and symptoms of hyperthyroidism and thyrotoxicosis
 - c. Plan the management of acute hyperthyroidism and thyrotoxicosis

- d. Recognize and interpret relevant laboratory and imaging studies for hyperthyroidism
- 11. Hypothyroidism
 - a. Differentiate by age the etiology of hypothyroidism
 - b. Recognize signs and symptoms of hypothyroidism
 - c. Recognize and interpret relevant laboratory and imaging studies for hypothyroidism
 - d. Plan management of acute hypothyroidism
 - e. Understand the pathophysiology of hypothyroidism
- E. Gastrointestinal
 - 1. Anorectal fissures/abscesses
 - a. Differentiate by age the etiology of anorectal fissures/abscesses
 - b. Recognize signs and symptoms of anorectal fissures/abscesses
 - c. Plan the management of anorectal fissures/abscesses
 - 2. Hemorrhoids
 - a. Recognize signs and symptoms of hemorrhoids
 - b. Plan management of hemorrhoids
 - 3. Rectal Prolapse
 - a. Know the etiology of rectal prolapse
 - b. Plan the management for a child with rectal prolapse
 - c. Recognize the signs and symptoms of rectal prolapse
 - d. Recognize how to differentiate rectal prolapse from more serious conditions (eg, intussusception)
 - 4. Necrotizing enterocolitis
 - a. Recognize signs and symptoms of acute necrotizing enterocolitis
 - b. Plan management of acute necrotizing enterocolitis
 - c. Recognize the life-threatening complications of necrotizing enterocolitis
 - d. Know the risk factors for necrotizing enterocolitis
 - 5. Antibiotic-Associated Enterocolitis
 - a. Know the etiology and understand the pathophysiology of antibiotic-associated enterocolitis
 - b. Plan management of acute antibiotic-associated enterocolitis
 - c. Recognize and interpret relevant laboratory studies for antibiotic-associated enterocolitis
 - 6. Proctitis
 - a. Know the etiology and understand the pathophysiology of proctitis
 - b. Plan management of acute proctitis/perianal infections
 - 7. Polyps
 - a. Know the etiology and understand the pathophysiology of polyps
 - b. Plan management of prolapsed rectal polyps
 - 8. Inflammatory bowel disease
 - a. Differentiate by age the epidemiology and incidence of inflammatory bowel disease
 - b. Recognize signs and symptoms of inflammatory bowel disease
 - c. Recognize and interpret relevant laboratory and imaging studies for inflammatory bowel disease

- d. Recognize life-threatening complications of inflammatory bowel disease
- e. Plan the acute management of chronic inflammatory bowel disease
- 9. Liver Disorders
 - a. Know causes of fulminant hepatic failure, including drugs, storage diseases, and autoimmune disorders
 - b. Recognize and interpret relevant laboratory and imaging studies for the diagnosis of fulminant hepatic failure
 - c. Plan acute management of fulminant hepatic failure
- 10. Biliary tract disease, acute
 - a. Know the etiology and understand the pathophysiology of biliary tract disease
 - b. Recognize signs and symptoms of biliary tract disease
 - c. Recognize and interpret relevant laboratory and imaging studies for biliary tract disease
 - d. Plan management of acute biliary tract disease
 - e. Recognize the complications of acute biliary tract disease
- 11. Pancreatitis, acute
 - a. Know the etiology and understand the pathophysiology of pancreatitis
 - b. Recognize signs and symptoms of pancreatitis
 - c. Recognize and interpret relevant laboratory and imaging studies for pancreatitis
 - d. Recognize life-threatening complications of pancreatitis
 - e. Plan management of acute pancreatitis
- 12. Gastroesophageal reflux
 - a. Know the etiology and understand the pathophysiology of gastroesophageal reflux
 - b. Recognize signs and symptoms of gastroesophageal reflux
 - c. Recognize and interpret relevant laboratory and imaging studies for gastroesophageal reflux
 - d. Plan management of acute and chronic gastroesophageal reflux
 - e. Recognize the complications of gastroesophageal reflux
- 13. Gastric and duodenal ulcers
 - a. Know the etiology of gastric and duodenal ulcers
 - b. Recognize the signs and symptoms of gastric ulcers
 - c. Recognize and interpret relevant laboratory and imaging studies for gastric and duodenal ulcers
 - d. Plan the management of acute gastric and duodenal ulcers
 - e. Recognize the signs and symptoms of duodenal ulcers
 - f. Understand the role of gastric bacterial infection in children with ulcer disease
- F. Hematologic
 - 1. Anemia
 - a. Differentiate by age the etiology and understand the pathophysiology of anemia
 - b. Recognize and interpret relevant laboratory studies for anemia
 - c. Plan the management of anemia
 - 2. Sickle hemoglobin disorders
 - a. Know the etiology and understand the pathophysiology of sickle hemoglobin disorders
 - b. Recognize and differentiate by age signs and symptoms of sickle hemoglobin disorders

- c. Recognize and interpret relevant laboratory and imaging studies for sickle hemoglobin disorders
- d. Recognize and differentiate by age acute complications of sickle hemoglobin disorders
- e. Recognize life-threatening complications of sickle hemoglobin disorders
- f. Plan management of acute sickle cell disease
3. Thalassemia major and other hemoglobinopathies
 - a. Know the etiology and understand the pathophysiology of thalassemia major and other hemoglobinopathies
 - b. Recognize and differentiate by age signs and symptoms of thalassemia major and other hemoglobinopathies
 - c. Plan management of acute thalassemia major and other hemoglobinopathies
4. Methemoglobinemia
 - a. Know the etiology and understand the pathophysiology of methemoglobinemia
 - b. Recognize and differentiate by age signs and symptoms of methemoglobinemia
 - c. Plan the management of acute methemoglobinemia
5. Neutropenia and neutrophil dysfunction
 - a. Recognize and differentiate by age signs and symptoms of neutropenia and neutrophil dysfunction
 - b. Plan the management of acute neutropenia and neutrophil dysfunction
6. Idiopathic thrombocytopenic purpura
 - a. Know the etiology and understand the pathophysiology of idiopathic thrombocytopenic purpura
 - b. Recognize signs and symptoms and life-threatening complications of idiopathic thrombocytopenic purpura
 - c. Plan the management of acute idiopathic thrombocytopenic purpura
7. Platelet disorders
 - a. Know the etiology and understand the pathophysiology of qualitative and quantitative platelet abnormalities
 - b. Recognize signs and symptoms of platelet function abnormalities
 - c. Plan management of acute platelet function abnormalities
8. Inherited disorders of coagulation
 - a. Know etiology and classification of inherited disorders of coagulation
 - b. Understand the pathophysiology of inherited disorders of coagulation
 - c. Recognize signs and symptoms of inherited disorders of coagulation
 - d. Recognize and interpret relevant laboratory studies for inherited disorders of coagulation
 - e. Recognize complications, including life-threatening complications, of inherited disorders of coagulation
 - f. Plan the management of acute complications of inherited disorders of coagulation
 - g. Know principles of chronic management of inherited disorders of coagulation
9. Disseminated intravascular coagulation
 - a. Know the etiology and understand the pathophysiology of disseminated intravascular coagulation
 - b. Recognize complications of disseminated intravascular coagulation
 - c. Plan management of disseminated intravascular coagulation

10. Red cell destruction
 - a. Metabolic abnormalities
 1. Know the etiology and understand the pathophysiology of G6PD deficiency and other red blood cell metabolic abnormalities
 2. Recognize acute complications of G6PD deficiency
 3. Know the drugs and substances associated with acute hemolysis in children with G6PD deficiency
 4. Plan the management of complications of G6PD deficiency
 - b. Autoimmune hemolytic anemia
 1. Know the etiology and understand the pathophysiology of autoimmune hemolytic anemia
 2. Recognize the signs and symptoms of autoimmune hemolytic anemia
 3. Plan the management of autoimmune hemolytic anemia
 4. Recognize and interpret relevant laboratory studies for autoimmune hemolytic anemia
 5. Know the etiology and understand the pathophysiology of aplastic and hypoplastic anemias
 6. Recognize the signs and symptoms of emergency complications of aplastic and hypoplastic anemias
 7. Plan the management of emergency complications of aplastic and hypoplastic anemias
11. Postsplenectomy/functional splenectomy sepsis
 - a. Know the etiology and understand the pathophysiology of postsplenectomy/functional splenectomy sepsis
 - b. Recognize and differentiate by age signs and symptoms of postsplenectomy/functional splenectomy sepsis
12. Blood products transfusions (nontraumatic)
 - a. Know indications for blood products transfusions (nontraumatic)
 - b. Know methodology of blood products transfusions
 - c. Recognize complications of blood products transfusions, eg, infectious, hemodynamic
 - d. Plan management of acute complications of blood products transfusions
- G. Infectious disease
 1. Lymphatic/hematologic
 - a. Bacteremia
 1. Differentiate by age the etiology and understand the pathophysiology of occult bacteremia
 2. Recognize signs and symptoms of occult bacteremia
 3. Recognize and interpret relevant laboratory studies for occult bacteremia
 4. Plan management of occult bacteremia
 - b. Sepsis
 1. Differentiate by age the etiology and understand the pathophysiology of sepsis
 2. Recognize signs and symptoms of sepsis
 3. Recognize and interpret relevant laboratory, imaging, and monitoring studies for sepsis
 4. Plan management of sepsis

- c. Cervical lymphadenitis
 - 1. Know the etiology and understand the pathophysiology of cervical lymphadenitis
 - 2. Differentiate by age the etiology and understand the pathophysiology of non-cervical lymphadenitis
 - 3. Recognize and interpret relevant laboratory and imaging studies for cervical lymphadenitis
 - 4. Plan management of acute cervical lymphadenitis
- d. Lymphadenitis, noncervical
 - 1. Differentiate by age the etiology and understand the pathophysiology of non-cervical lymphadenitis
 - 2. Recognize signs and symptoms of non-cervical lymphadenitis
 - 3. Recognize and interpret relevant laboratory and imaging studies for non-cervical lymphadenitis
 - 4. Plan management of non-cervical lymphadenitis
- 2. Central nervous system
 - a. Bacterial meningitis
 - 1. Differentiate by age the etiology and understand the pathophysiology of bacterial meningitis
 - 2. Recognize signs and symptoms of bacterial meningitis
 - 3. Recognize and interpret relevant laboratory and imaging studies for bacterial meningitis
 - 4. Recognize life-threatening complications of bacterial meningitis
 - 5. Plan management of acute bacterial meningitis
 - b. Aseptic meningitis
 - 1. Differentiate by age the etiology of aseptic meningitis
 - 2. Recognize signs and symptoms of aseptic meningitis
 - 3. Recognize and interpret relevant laboratory and imaging studies for aseptic meningitis
 - 4. Recognize life-threatening complications of aseptic meningitis
 - 5. Plan management of acute aseptic meningitis
 - c. Encephalitis
 - 1. Differentiate by age the etiology of encephalitis
 - 2. Recognize signs and symptoms of encephalitis
 - 3. Recognize and interpret relevant laboratory and imaging studies for encephalitis
 - 4. Recognize life-threatening complications of encephalitis
 - 5. Plan management of encephalitis
 - d. Brain abscess/subdural and epidural abscesses/empyema
 - 1. Differentiate by age the etiology and understand the pathophysiology of brain abscess, subdural and epidural abscesses, and empyema
 - 2. Recognize signs and symptoms of brain abscess, subdural and epidural abscesses, and empyema
 - 3. Recognize and interpret relevant laboratory and imaging studies for brain abscess, subdural and epidural abscesses, and empyema
 - 4. Recognize life-threatening complications of brain abscess, subdural and epidural abscesses, and empyema

5. Plan management of acute brain abscess, subdural and epidural abscesses, and empyema
- e. Tetanus
 1. Know the etiology of tetanus
 2. Understand pathophysiology of tetanus
 3. Recognize signs and symptoms of tetanus
 4. Recognize life-threatening complications of tetanus
3. Ears, eyes, nose, and throat
 - a. Nasopharyngitis
 1. Plan the management of acute nasopharyngitis
 - b. Stomatitis
 1. Plan the management of acute stomatitis
 - c. Acute Necrotizing Ulcerative Gingivostomatitis
 1. Plan the management of acute necrotizing ulcerative gingivostomatitis
 - d. Pharyngitis
 1. Plan the management of acute pharyngitis
 2. Know the etiology of acute pharyngitis
 - e. Otitis media
 1. Differentiate by age the etiology and understand the pathophysiology of otitis media
 2. Recognize signs and symptoms and complications of otitis media
 3. Plan management of acute otitis media
 4. Recognize and interpret relevant laboratory and imaging studies in otitis media
 - f. Mastoiditis
 1. Differentiate by age the etiology and understand the pathophysiology of mastoiditis
 2. Recognize signs and symptoms and complications of mastoiditis
 3. Plan the management of mastoiditis
 4. Recognize and interpret relevant laboratory and imaging studies in mastoiditis
 - g. Otitis externa
 1. Plan the evaluation and management of acute otitis externa
 2. Recognize the signs and symptoms of otitis externa
 - h. Sinusitis
 1. Differentiate by age the etiology and understand the pathophysiology of sinusitis
 2. Recognize signs and symptoms of sinusitis
 3. Recognize and interpret relevant laboratory and imaging studies for sinusitis
 4. Recognize life-threatening complications of sinusitis
 5. Plan management of acute sinusitis
 - i. Peritonsillar abscesses
 1. Know the etiology and understand the pathophysiology of peritonsillar abscesses
 2. Recognize signs and symptoms of peritonsillar abscesses
 3. Recognize and interpret relevant laboratory and imaging studies for peritonsillar abscesses
 4. Plan management of acute peritonsillar abscesses

- j. Retropharyngeal and Other Deep Space Head and Neck Infections
 - 1. Differentiate by age the etiology and understand the pathophysiology of retropharyngeal, pharyngeal, parapharyngeal, and other deep space head and neck infections
 - 2. Recognize signs and symptoms of retropharyngeal, pharyngeal, parapharyngeal, and other deep space head and neck infections
 - 3. Recognize and interpret relevant laboratory and imaging studies for retropharyngeal, parapharyngeal, and other deep space head and neck infections
 - 4. Plan management of acute retropharyngeal, pharyngeal, parapharyngeal, and other deep space head and neck infections
- k. Croup
 - 1. Know the etiology and understand the pathophysiology of croup (laryngotracheobronchitis)
 - 2. Recognize signs and symptoms of croup
 - 3. Recognize and interpret relevant laboratory and imaging studies for croup
 - 4. Recognize life-threatening complications of croup
 - 5. Plan management of acute croup
- l. Tracheitis, Bacterial
 - 1. Differentiate by age the etiology and understand the pathophysiology of tracheitis
 - 2. Recognize signs and symptoms of tracheitis
 - 3. Recognize and interpret relevant laboratory and imaging studies for tracheitis
 - 4. Recognize life-threatening complications of tracheitis
 - 5. Plan management of acute tracheitis
- m. Epiglottitis
 - 1. Differentiate by age the etiology and understand the pathophysiology of epiglottitis
 - 2. Recognize signs and symptoms of epiglottitis
 - 3. Recognize and interpret relevant laboratory and imaging studies for epiglottitis
 - 4. Recognize life-threatening complications of epiglottitis
 - 5. Plan management of acute epiglottitis
- 4. Pulmonary
 - a. Bacterial pneumonia
 - 1. Differentiate by age the etiology and understand the pathophysiology of bacterial pneumonia
 - 2. Recognize signs and symptoms of bacterial pneumonia
 - 3. Recognize and interpret relevant laboratory and imaging studies for bacterial pneumonia
 - 4. Recognize life-threatening presentations and complications of bacterial pneumonia
 - 5. Plan management of acute bacterial pneumonia
 - 6. Recognize signs and symptoms of acute atypical bacterial pneumonia
 - 7. Plan management of acute atypical bacterial pneumonia
 - b. Nonbacterial pneumonia
 - 1. Differentiate by age the etiology and understand the pathophysiology of nonbacterial pneumonia, eg, viral, mycoplasmal, chlamydial, fungal

2. Recognize signs and symptoms of nonbacterial pneumonia, eg, viral, mycoplasmal, chlamydial, fungal
3. Recognize and interpret relevant laboratory and imaging studies for nonbacterial pneumonia, eg, viral mycoplasmal, chlamydial, fungal
4. Plan management of acute nonbacterial pneumonia, eg, viral, mycoplasmal, chlamydial, fungal
- c. Bronchiolitis
 1. Know the etiology and understand the pathophysiology of bronchiolitis
 2. Recognize signs and symptoms of bronchiolitis
 3. Recognize and interpret relevant laboratory and imaging studies for bronchiolitis
 4. Recognize life-threatening complications of bronchiolitis
 5. Plan management of acute bronchiolitis
- d. Pertussis
 1. Know the etiology and understand the pathophysiology of pertussis
 2. Recognize signs and symptoms of pertussis
 3. Recognize and interpret relevant laboratory and imaging studies for pertussis
 4. Recognize life-threatening complications of pertussis
 5. Plan management of acute pertussis
- e. Tuberculosis
 1. Know the etiology and understand the pathophysiology of tuberculosis
 2. Recognize signs and symptoms of tuberculosis
 3. Recognize and interpret relevant laboratory and imaging studies for tuberculosis
 4. Recognize life-threatening complications of tuberculosis
 5. Plan management of tuberculosis
5. Gastrointestinal
 - a. Viral gastroenteritis
 1. Differentiate by age the etiology and understand the pathophysiology of viral gastroenteritis
 2. Recognize signs and symptoms of viral gastroenteritis
 3. Plan management of acute viral gastroenteritis
 - b. Bacterial gastroenteritis
 1. Know the etiology and understand the pathophysiology of the common causes of bacterial gastroenteritis
 2. Recognize signs and symptoms of bacterial gastroenteritis
 3. Recognize and interpret relevant laboratory and imaging studies for bacterial gastroenteritis
 4. Plan management of acute bacterial gastroenteritis
 5. Recognize the life-threatening complications of bacterial gastroenteritis
 - c. Parasitic and Fungal Gastrointestinal Infections
 1. Differentiate by age the etiology of parasitic and fungal gastrointestinal infections
 2. Recognize signs and symptoms of parasitic and fungal gastrointestinal infections

3. Recognize and interpret relevant laboratory and imaging studies for parasitic and fungal gastrointestinal infections
4. Recognize life-threatening complications of parasitic and fungal gastrointestinal infections
5. Plan management of acute parasitic and fungal gastrointestinal infections
- d. Viral hepatitis
 1. Bloodborne (Types B, C, and D)
 - a. Know the etiology and understand the pathophysiology of bloodborne viral hepatitis
 - b. Recognize signs and symptoms of bloodborne viral hepatitis
 - c. Understand the epidemiology and prevention of bloodborne viral hepatitis
 - d. Recognize and interpret relevant laboratory and imaging studies for bloodborne viral hepatitis
 - e. Recognize life-threatening complications of bloodborne viral hepatitis
 - f. Plan management of acute bloodborne viral hepatitis
 2. Non-Bloodborne (Types A and E)
 - a. Know the etiology and understand the pathophysiology of non-bloodborne viral hepatitis
 - b. Recognize the signs and symptoms of non-bloodborne viral hepatitis
 - c. Understand the epidemiology and prevention of non-bloodborne viral hepatitis
 - d. Recognize and interpret relevant laboratory and imaging studies for non-bloodborne viral hepatitis
 - e. Recognize the life-threatening complications of non-bloodborne viral hepatitis
 - f. Plan the management of acute non-bloodborne viral hepatitis
6. Skin and soft tissue
 - a. Omphalitis
 1. Plan the management of omphalitis
 2. Know the etiology and understand the pathophysiology of omphalitis
 - b. Miscellaneous skin and soft tissue infections
 1. Differentiate by age the etiology and understand the pathophysiology of skin and soft tissue infections
 2. Recognize signs and symptoms of skin and soft tissue infections
 3. Recognize and interpret relevant laboratory and imaging studies for cellulitis
 4. Recognize life-threatening complications of cellulitis
 5. Plan management of skin and soft tissue infections
 6. Know the indications for treatment of and the therapies for cellulitis
 - c. Mastitis (Neonatal)
 1. Know the etiology and understand the pathophysiology of mastitis
 2. Recognize the signs and symptoms of mastitis
 3. Plan the management of mastitis
7. Musculoskeletal
 - a. Osteomyelitis
 1. Know the etiology and understand the pathophysiology of osteomyelitis
 2. Recognize signs and symptoms of osteomyelitis

3. Recognize the occurrence of osteomyelitis following puncture wounds of the foot
4. Recognize and interpret relevant laboratory and imaging studies for osteomyelitis
5. Plan management of acute osteomyelitis
- b. Septic arthritis
 1. Differentiate by age the etiology and understand the pathophysiology of septic arthritis
 2. Recognize signs and symptoms of septic arthritis
 3. Recognize and interpret relevant laboratory and imaging studies for septic arthritis
 4. Plan management of acute septic arthritis
- c. Deep plane infections (eg, myositis, fasciitis, gangrene)
 1. Know the indications for treatment of and the therapies for fasciitis
 2. Know the etiology and understand the pathophysiology of deep plane infections
 3. Recognize the signs and symptoms of deep plane infections
 4. Be familiar with ancillary studies in deep plane infections
 5. Plan management of deep plane infections
 6. Differentiate fasciitis from cellulitis
8. Urinary
 - a. Differentiate by age the etiology and understand the pathophysiology of urinary infections
 - b. Recognize signs and symptoms of urinary infections
 - c. Recognize and interpret relevant laboratory and imaging studies for urinary infections
 - d. Plan management of acute urinary infections
 - e. Recognize the complications of urinary infections
 - f. Differentiate between lower urinary tract infection and pyelonephritis
9. Tickborne Diseases
 - a. Rocky Mountain spotted fever
 1. Know the etiology and understand the pathophysiology of Rocky Mountain spotted fever
 2. Recognize signs and symptoms of Rocky Mountain spotted fever
 3. Recognize and interpret relevant laboratory and imaging studies for Rocky Mountain spotted fever
 4. Recognize life-threatening complications of Rocky Mountain spotted fever
 5. Plan management of acute Rocky Mountain spotted fever
 - b. Lyme Disease
 1. Know the etiology and understand the pathophysiology of Lyme disease
 2. Recognize signs and symptoms of Lyme disease
 3. Recognize and interpret relevant laboratory and imaging studies for Lyme disease
 4. Plan management of early and late Lyme disease
 - c. Tick Paralysis
 1. Recognize signs and symptoms of tick paralysis
 2. Plan management of tick paralysis

- d. Babesiosis/Ehrlichiosis
 - 1. Recognize signs and symptoms of babesiosis/ehrlichiosis
 - 2. Plan management of babesiosis/ehrlichiosis
 - e. Other Tickborne diseases (Tularemia, Relapsing Fever)
 - 1. Recognize signs and symptoms of other tickborne diseases (eg, tularemia, relapsing fever)
 - 2. Plan management of other tickborne diseases (eg, tularemia, relapsing fever)
10. Multiple systems
- a. Measles
 - 1. Know the etiology of measles
 - 2. Recognize signs and symptoms of measles
 - 3. Recognize and interpret relevant laboratory and imaging studies for measles
 - 4. Be familiar with the complications of measles
 - 5. Plan management of acute measles
 - 6. Describe the method of preventing the spread of measles (postexposure prophylaxis)
 - b. Rubella
 - 1. Recognize signs and symptoms of rubella
 - 2. Plan evaluation and management of acute rubella
 - c. Varicella/zoster
 - 1. Know the etiology and understand the pathophysiology of varicella/zoster
 - 2. Recognize signs and symptoms of varicella/zoster
 - 3. Recognize and interpret relevant laboratory and imaging studies for varicella/zoster
 - 4. Be familiar with the complications of varicella/zoster
 - 5. Plan management of acute varicella
 - 6. Plan management of acute zoster
 - d. Roseola
 - 1. Plan the management of acute roseola
 - 2. Recognize signs and symptoms of roseola
 - e. Erythema infectiosum
 - 1. Plan the management of acute erythema infectiosum
 - 2. Recognize the complications of erythema infectiosum
 - 3. Know the etiology of erythema infectiosum
 - 4. Recognize signs and symptoms of erythema infectiosum
 - f. Infectious mononucleosis
 - 1. Know the etiology and understand the pathophysiology of infectious mononucleosis
 - 2. Recognize signs and symptoms of infectious mononucleosis
 - 3. Recognize and interpret relevant laboratory and imaging studies for infectious mononucleosis
 - 4. Be familiar with the complications of infectious mononucleosis
 - 5. Plan management of acute infectious mononucleosis
 - g. Human immunodeficiency virus infection
 - 1. Differentiate by age the etiology and understand the pathophysiology of human immunodeficiency virus infection

2. Recognize signs and symptoms of human immunodeficiency virus infection
 3. Recognize and interpret relevant laboratory and imaging studies for human immunodeficiency virus infection
 4. Recognize life-threatening complications of human immunodeficiency virus infection
 5. Plan management of acute human immunodeficiency virus infection
 6. Plan management of chronic human immunodeficiency virus infection
 7. Recognize the most likely complications and plan the management of the pulmonary complications of human immunodeficiency virus infection
 8. Recognize the most likely complications and plan the management of the neurologic complications of human immunodeficiency virus infection
 9. Recognize the most likely complications and plan the management of the dermatologic complications of human immunodeficiency virus infection
 10. Recognize the drug-related adverse effects of therapy for human immunodeficiency virus infection
 11. Know the opportunities for prevention of vertical transmission of human immunodeficiency virus infection
 12. Evaluate the efficacy of therapy in a patient with known human immunodeficiency virus infection
 13. Plan postexposure prophylaxis after exposure to a source of human immunodeficiency virus infection (eg, needlestick)
- h. Rabies
1. Know the potential animal reservoirs of rabies
 2. Recognize signs and symptoms of rabies
 3. Recognize and interpret relevant laboratory and imaging studies for rabies
 4. Recognize life-threatening complications of rabies
 5. Plan management of acute rabies exposure
- i. Botulism
1. Know the etiology and understand the pathophysiology of botulism
 2. Recognize signs and symptoms of foodborne or wound botulism
 3. Recognize and interpret relevant laboratory and imaging studies for botulism
 4. Recognize life-threatening complications of botulism
 5. Plan the management of acute botulism
 6. Recognize the signs and symptoms of infantile botulism
- j. Toxic shock syndrome
1. Differentiate by age the etiology and understand the pathophysiology of toxic shock syndrome
 2. Recognize signs and symptoms of toxic shock syndrome
 3. Recognize life-threatening complications of toxic shock syndrome
 4. Plan management of acute toxic shock syndrome
- k. Malaria
1. Plan the evaluation and management of acute malaria
 2. Know the etiology and understand the pathophysiology of malaria
 3. Recognize the signs and symptoms of malaria
 4. Be familiar with the ancillary studies relevant to malaria
 5. Recognize the life-threatening complications of malaria

1. Cat Scratch Disease
 1. Know the etiology of cat scratch disease
 2. Recognize the signs and symptoms of cat scratch disease
 3. Recognize the life-threatening complications of cat scratch disease
 4. Plan the management of cat scratch disease
- m. Other parasitic infections
 1. Recognize the signs and symptoms of other parasitic infections (eg, Ehrlichiosis)
 2. Plan the evaluation and management of other parasitic infections
 3. Know the etiology of other parasitic infections (eg, Ehrlichiosis)
11. Sexually Transmitted Diseases
 - a. Syphilis
 1. Differentiate by age the etiology and understand the pathophysiology of syphilis
 2. Recognize signs and symptoms of syphilis
 3. Plan management of acute and chronic syphilis
 4. Recognize and interpret relevant laboratory and imaging studies in acute and chronic syphilis
 - b. Gonorrhea
 1. Differentiate by age the etiology and understand the pathophysiology of gonorrhea
 2. Recognize signs and symptoms of gonorrhea
 3. Recognize the complications of gonorrhea
 4. Plan management of acute gonorrhea
 5. Recognize and interpret relevant laboratory and imaging studies in acute gonorrhea
 - c. Genital Chlamydia Infections
 1. Differentiate by age the etiology and understand the pathophysiology of chlamydia infections
 2. Recognize signs and symptoms of genital chlamydia infections
 3. Plan the management of acute and chronic chlamydia infections
 4. Recognize the complications of chlamydia infections
 5. Recognize and interpret relevant laboratory and imaging studies in acute chronic chlamydia infections
 - d. Herpes Genitalis
 1. Understand the pathophysiology of herpes genitalis
 2. Recognize the signs and symptoms of herpes genitalis
 3. Plan the management studies of herpes genitalis
 4. Recognize and interpret relevant laboratory and imaging studies in herpes genitalis
 - e. Urethritis/Cervicitis
 1. Know the etiology of urethritis/cervicitis
 2. Recognize the signs and symptoms of urethritis/cervicitis
 3. Plan the management of urethritis/cervicitis
 - f. Pelvic Inflammatory Disease
 1. Know the etiology of pelvic inflammatory disease

2. Recognize the signs and symptoms of pelvic inflammatory disease
 3. Plan the management of pelvic inflammatory disease
 4. Recognize the complications of pelvic inflammatory disease
 - g. Other Genital Lesions (ie, Warts, Ulcers, Lymphadenopathy)
 1. Plan the management of genital warts
 2. Know the etiology of other genital lesions (ie, warts, ulcers, lymphadenopathy)
 3. Recognize the signs and symptoms of other genital lesions (ie, warts, ulcers, lymphadenopathy)
 4. Recognize and interpret relevant laboratory studies in genital warts
- H. Metabolic Emergencies
1. Inborn Errors of Metabolism
 - a. Urea cycle defects
 1. Recognize the initial signs and symptoms of urea cycle defects
 2. Plan the management of acute life-threatening processes resulting from urea cycle defects
 3. Understand the pathophysiology of urea cycle deficiencies
 - b. Organic aciduria
 1. Recognize signs and symptoms of clinical conditions characterized by the inherited organic aciduria disorders
 2. Plan the initial management of acute life-threatening processes resulting from the inherited organic aciduria disorders
 3. Understand the pathophysiology of the inherited organic acidurias
 - c. Galactosemia
 1. Plan the initial management of the acute manifestations of galactosemia
 2. Recognize the acute signs and symptoms of galactosemia
 3. Understand the pathophysiology of galactosemia
 - d. Other
 1. Understand the pathophysiology of other metabolic emergencies
 2. Recognize the signs and symptoms of other metabolic emergencies
 2. Glycogen Storage Disorders
 - a. Understand the general pathophysiology of glycogen storage disorders
 - b. Recognize the general signs and symptoms of glycogen storage disorders
 - c. Plan the initial management of a patient with the acute manifestations of a glycogen storage disorder
- I. Neurologic
1. Seizures
 - a. Differentiate by age the etiology and understand the pathophysiology of seizures
 - b. Know the basic classification criteria and etiology by age of seizures
 - c. Recognize the signs and symptoms of partial and generalized seizures
 - d. Recognize and interpret relevant laboratory and imaging studies for seizures
 - e. Recognize life-threatening complications of seizures
 - f. Plan the management of acute seizures and the potential complications associated with these treatment modalities
 - g. Know management principles of chronic seizures
 - h. Recognize the side effects and complications of commonly used anticonvulsants
 - i. Know the seizure-like events that mimic epilepsy

2. Encephalopathy
 - a. Know the etiology and understand the pathophysiology of encephalopathy
 - b. Recognize and interpret relevant laboratory and imaging studies for encephalopathy
 - c. Know the appropriate ancillary studies required to diagnose and manage encephalopathy
 - d. Recognize life-threatening complications of encephalopathy
 - e. Know the management of acute encephalopathy
3. Migraine
 - a. Know the etiology and understand the pathophysiology of classic and common migraine headaches
 - b. Recognize signs and symptoms of migraine headaches and how to differentiate migraines from other causes of headache
 - c. Plan the management of acute migraine headaches
 - d. Know the medications used for prophylactic treatment of migraine headaches
4. Pseudotumor cerebri
 - a. Know the etiology and understand the pathophysiology of pseudotumor cerebri
 - b. Recognize signs and symptoms of pseudotumor cerebri
 - c. Plan the management of acute pseudotumor cerebri
 - d. Know the complications of prolonged idiopathic intracranial hypertension
 - e. Recognize and interpret relevant laboratory and imaging studies for pseudotumor cerebri
5. Stroke
 - a. Know the causes of strokes in children
 - b. Plan the management of stroke in children
 - c. Recognize and interpret relevant laboratory and imaging studies for stroke in children
6. Transverse myelitis
 - a. Plan the management of acute transverse myelitis
 - b. Recognize the signs and symptoms of acute transverse myelitis
 - c. Understand the pathophysiology of acute transverse myelitis
7. Acute polyneuritis
 - a. Know the etiology of acute polyneuritis
 - b. Understand pathophysiology of acute polyneuritis
 - c. Recognize signs and symptoms and life-threatening complications of acute polyneuritis
 - d. Recognize and interpret relevant laboratory and imaging studies for acute polyneuritis
 - e. Plan the management of acute polyneuritis
8. Myasthenia gravis
 - a. Know the etiology and understand the pathophysiology of myasthenia gravis
 - b. Recognize signs and symptoms and life-threatening complications of myasthenia gravis
 - c. Recognize and interpret relevant laboratory and imaging studies for myasthenia gravis
 - d. Plan the management of acute myasthenia gravis crises

9. Infantile Botulism
 - a. Know the etiology and understand the pathophysiology of infantile botulism
 - b. Plan the management of infantile botulism
10. Periodic paralysis
 - a. Plan the management of acute periodic paralysis
 - b. Understand the pathophysiology of acute periodic paralysis
11. Postviral Cerebellar Ataxia, Acute
 - a. Know the etiology and understand the pathophysiology of postviral cerebellar ataxia
 - b. Recognize signs and symptoms of postviral cerebellar ataxia
 - c. Plan the management of acute postviral cerebellar ataxia
12. Labyrinthitis
 - a. Know the etiology and understand the pathophysiology of labyrinthitis
 - b. Recognize signs and symptoms of labyrinthitis
 - c. Plan the management of labyrinthitis
13. Sydenham chorea
 - a. Plan the management of acute Sydenham chorea
 - b. Understand the pathophysiology of Sydenham chorea
 - c. Recognize the signs and symptoms of Sydenham chorea
14. Optic neuritis
 - a. Plan the management of acute optic neuritis
 - b. Recognize the signs and symptoms of acute optic neuritis
 - c. Recognize and interpret relevant laboratory and imaging studies for acute optic neuritis
15. Facial Nerve Palsy
 - a. Know the etiology and understand the pathophysiology of peripheral and central facial nerve palsy
 - b. Recognize signs and symptoms of peripheral and central facial nerve palsy
 - c. Recognize and interpret relevant laboratory and imaging studies for peripheral and central facial nerve palsy
 - d. Plan management of acute peripheral and central facial nerve palsy
16. Neurodegenerative Disorders
 - a. Recognize and differentiate by age the signs and symptoms of neurodegenerative disorders (eg, metachromatic leukodystrophy, adrenoleukodystrophy, and multiple sclerosis)
 - b. Recognize the acute complications of neurodegenerative disorders (eg, seizures, neurogenic bladder, Devic disease)
17. Non-HIV-Related Immunodeficiencies
 - a. Recognize the typical symptoms, infections, and other manifestations associated with non-HIV-related immunodeficiencies (eg, SCID, Wiskott-Aldrich syndrome, DiGeorge syndrome, hyperimmunoglobulinemia E (Job's) syndrome)
 - b. Plan the management of acute complications of non-HIV-related immunodeficiencies (eg, SCID, Wiskott-Aldrich syndrome, DiGeorge syndrome, hyperimmunoglobulinemia E (Job's) syndrome)
- J. Oncologic
 1. General

- a. Know and differentiate by age the common childhood cancers
- b. Recognize and interpret laboratory and imaging studies important in diagnosis of common childhood cancers
2. Therapeutic complications
 - a. Recognize complications of neoplastic processes
 - b. Recognize complications of therapy for neoplastic processes
 - c. Plan pain management for an oncology patient
3. Leukemia
 - a. Know the epidemiology of leukemia
 - b. Recognize signs and symptoms of leukemia, its life-threatening complications, and its treatment
 - c. Plan the initial management of acute complications of leukemia
 - d. Recognize and interpret relevant laboratory and imaging studies important in making the diagnosis of leukemia
 - e. Know the differential diagnosis of leukemia in children
4. Non-Hodgkin lymphoma
 - a. Know the epidemiology and understand the pathophysiology of non-Hodgkin lymphoma
 - b. Recognize signs and symptoms and life-threatening complications of non-Hodgkin lymphoma
 - c. Plan initial management of acute complications of non-Hodgkin lymphoma and its treatment
 - d. Recognize and interpret laboratory and imaging studies for non-Hodgkin lymphoma
5. Hodgkin disease
 - a. Know the epidemiology and understand the pathophysiology of Hodgkin disease
 - b. Recognize and interpret laboratory and imaging studies for Hodgkin disease
 - c. Recognize signs and symptoms and life-threatening complications of Hodgkin disease and its treatment
 - d. Plan initial management of acute complications of Hodgkin disease
6. Wilms tumor
 - a. Know the epidemiology and understand the pathophysiology of Wilms tumor
 - b. Recognize and interpret relevant laboratory and imaging studies for Wilms tumor
 - c. Recognize signs and symptoms and life-threatening complications of Wilms tumor and its treatment
 - d. Plan initial management of acute complications of Wilms tumor and its treatment
7. Neuroblastoma
 - a. Know the epidemiology and understand the pathophysiology of neuroblastoma
 - b. Recognize and interpret relevant laboratory and imaging studies for neuroblastoma
 - c. Recognize signs and symptoms and life-threatening complications of neuroblastoma and its treatment
 - d. Plan initial management of acute complications of neuroblastoma and its treatment
8. Central nervous system tumors
 - a. Know the epidemiology and understand the pathophysiology of central nervous system tumors

- b. Recognize and interpret relevant laboratory and imaging studies for central nervous system tumors
 - c. Recognize signs and symptoms and life-threatening complications of central nervous system tumors and their treatment
 - d. Plan initial management of acute complications of central nervous system tumors and their treatment
9. Retinoblastoma
- a. Recognize signs and symptoms of retinoblastoma
 - b. Plan the initial management of patients with retinoblastoma
10. Sarcomas
- a. Know the epidemiology and understand the pathophysiology of soft tissue and bone sarcomas
 - b. Recognize and interpret relevant laboratory and imaging studies for soft tissue and bone sarcomas
 - c. Recognize signs and symptoms and life-threatening complications of soft tissue and bone sarcomas and their treatment
 - d. Plan initial management of acute complications of soft tissue and bone sarcomas and their treatment
- K. Pulmonary
1. Bronchopulmonary dysplasia
- a. Know the epidemiology and etiology and understand the pathophysiology of bronchopulmonary dysplasia
 - b. Recognize signs and symptoms of bronchopulmonary dysplasia
 - c. Recognize life-threatening complications of bronchopulmonary dysplasia and its treatment
 - d. Plan the management of chronic bronchopulmonary dysplasia
2. Sarcoidosis
- a. Know the epidemiology and recognize the clinical manifestations of sarcoidosis
 - b. Recognize and interpret relevant laboratory and imaging studies for sarcoidosis
 - c. Plan management of acute sarcoidosis, including the life-threatening complications
3. Aspiration pneumonia
- a. Know the etiology and understand the pathophysiology of aspiration pneumonia
 - b. Recognize signs and symptoms and life-threatening complications of aspiration pneumonia
 - c. Plan management of acute aspiration pneumonia
4. Pulmonary embolism
- a. Know the epidemiology and etiology and understand the pathophysiology of pulmonary embolism
 - b. Recognize signs and symptoms of pulmonary embolism
 - c. Recognize and interpret relevant laboratory, imaging, and monitoring studies for pulmonary embolism
 - d. Plan management of acute pulmonary embolism, including life-threatening complications
5. Pulmonary edema
- a. Know the epidemiology and etiology and understand the pathophysiology of pulmonary edema

- b. Recognize signs and symptoms of pulmonary edema
- c. Recognize and interpret relevant laboratory, imaging, and monitoring studies for pulmonary edema
- d. Plan management of acute pulmonary edema, including the life-threatening complications
- 6. Pulmonary hemosiderosis
 - a. Know the etiology and understand the pathophysiology of pulmonary hemosiderosis
 - b. Recognize signs and symptoms of pulmonary hemosiderosis
 - c. Recognize and interpret relevant laboratory and imaging studies for pulmonary hemosiderosis
 - d. Plan management of acute pulmonary hemosiderosis
- 7. Pleuritis and Costochondritis
 - a. Know the epidemiology and etiology and understand the pathophysiology of pleuritis and costochondritis
 - b. Recognize signs and symptoms of pleuritis and costochondritis
 - c. Recognize and interpret relevant laboratory, imaging, and monitoring studies for pleuritis and costochondritis
 - d. Plan management of acute pleuritis and costochondritis
- 8. Cystic fibrosis
 - a. Know the epidemiology and etiology and understand the pathophysiology of cystic fibrosis
 - b. Recognize and differentiate by age clinical manifestations associated with cystic fibrosis
 - c. Recognize and interpret relevant laboratory, imaging, and monitoring studies for cystic fibrosis
 - d. Recognize and differentiate by age life-threatening acute complications of cystic fibrosis
 - e. Know management principles of chronic cystic fibrosis
 - f. Plan the management of acute complications of cystic fibrosis
- L. Renal
 - 1. Dehydration
 - a. Know the etiology and understand the pathophysiology of dehydration
 - b. Recognize signs and symptoms of dehydration
 - c. Recognize and interpret relevant laboratory studies for dehydration
 - d. Recognize life-threatening complications of dehydration
 - e. Plan management of acute dehydration using oral rehydration therapy
 - f. Plan the management of acute dehydration using parenteral fluid therapy
 - g. Know differences in the etiology and management of isotonic versus hyponatremic versus hypernatremic dehydration
 - 2. Hypernatremia
 - a. Know the etiology and understand the pathophysiology of hypernatremia
 - b. Recognize signs and symptoms of hypernatremia, including hypernatremic dehydration
 - c. Recognize and interpret relevant laboratory studies for hypernatremia, including hypernatremic dehydration

- d. Recognize life-threatening complications of hypernatremia, including hypernatremic dehydration
- e. Plan management of acute hypernatremia, including hypernatremic dehydration
- 3. Hyponatremia
 - a. Know the etiology and understand the pathophysiology of hyponatremia, including hyponatremic dehydration
 - b. Recognize signs and symptoms of hyponatremia, including hyponatremic dehydration
 - c. Recognize and interpret relevant laboratory studies for hyponatremia, including hyponatremic dehydration
 - d. Recognize life-threatening complications of hyponatremia, including hyponatremic dehydration
 - e. Plan management of acute hyponatremia, including hyponatremic dehydration
- 4. Hyperkalemia
 - a. Know the etiology and understand the pathophysiology of hyperkalemia
 - b. Recognize signs and symptoms of hyperkalemia
 - c. Recognize and interpret relevant laboratory and monitoring studies for hyperkalemia
 - d. Recognize life-threatening complications of hyperkalemia and its treatment
 - e. Plan management of acute hyperkalemia
- 5. Hypokalemia
 - a. Know the etiology and understand the pathophysiology of hypokalemia
 - b. Recognize signs and symptoms of hypokalemia
 - c. Recognize and interpret relevant laboratory and monitoring studies for hypokalemia
 - d. Recognize life-threatening complications of hypokalemia and its treatment
 - e. Plan management of acute hypokalemia
- 6. Hypercalcemia
 - a. Know the etiology and understand the pathophysiology of hypercalcemia
 - b. Recognize signs and symptoms of hypercalcemia
 - c. Recognize and interpret relevant laboratory and monitoring studies for hypercalcemia
 - d. Recognize life-threatening complications of hypercalcemia and its treatment
 - e. Plan management of acute hypercalcemia
- 7. Hypocalcemia
 - a. Know the etiology and understand the pathophysiology of hypocalcemia
 - b. Recognize signs and symptoms of hypocalcemia
 - c. Recognize and interpret relevant laboratory and monitoring studies for hypocalcemia
 - d. Recognize life-threatening complications of hypocalcemia and its treatment
 - e. Plan management of acute hypocalcemia
- 8. Metabolic alkalosis
 - a. Know the etiology and understand the pathophysiology of metabolic alkalosis
 - b. Recognize signs and symptoms of metabolic alkalosis
 - c. Recognize and interpret relevant laboratory studies for metabolic alkalosis
 - d. Recognize life-threatening complications of metabolic alkalosis and its treatment

- e. Plan management of acute metabolic alkalosis
- 9. Metabolic acidosis
 - a. Know the etiology and understand the pathophysiology of metabolic acidosis
 - b. Recognize signs and symptoms of metabolic acidosis
 - c. Recognize and interpret relevant laboratory studies for metabolic acidosis
 - d. Recognize life-threatening complications of metabolic acidosis and its treatment
 - e. Plan management of acute metabolic acidosis
- 10. Nephrotic syndrome
 - a. Know the etiology and understand the pathophysiology of nephrotic syndrome by age
 - b. Recognize signs and symptoms of nephrotic syndrome
 - c. Recognize and interpret relevant laboratory studies for nephrotic syndrome
 - d. Recognize life-threatening complications of nephrotic syndrome and its treatment
 - e. Plan management of acute nephrotic syndrome
 - f. Know management principles of chronic nephrotic syndrome
- 11. Hypertension
 - a. Know the etiology and understand the pathophysiology of hypertension by age
 - b. Recognize signs and symptoms of hypertension
 - c. Recognize and interpret relevant laboratory and monitoring studies for hypertension
 - d. Recognize life-threatening complications of hypertension
 - e. Plan management of acute hypertension
 - f. Know management principles of chronic hypertension
 - g. Know differences in pathophysiology, manifestations, and treatment between hypertensive urgencies and hypertensive emergencies
- 12. Renal failure, acute
 - a. Know the etiology and understand the pathophysiology of renal failure by age
 - b. Recognize signs and symptoms of renal failure
 - c. Recognize and interpret relevant laboratory studies for renal failure
 - d. Recognize life-threatening complications of renal failure and its treatment
 - e. Know management principles of acute renal failure
- 13. Glomerulonephritis, acute
 - a. Know the etiology and understand the pathophysiology of glomerulonephritis
 - b. Recognize signs and symptoms and differential diagnosis of glomerulonephritis
 - c. Recognize and interpret relevant laboratory studies for glomerulonephritis
 - d. Recognize life-threatening complications of glomerulonephritis and its treatment
 - e. Plan management of acute glomerulonephritis
- 14. Renal tubular acidosis
 - a. Know the etiology and understand the pathophysiology of renal tubular acidosis
 - b. Recognize signs and symptoms of renal tubular acidosis
 - c. Recognize and interpret relevant laboratory studies for renal tubular acidosis
 - d. Plan management of acute renal tubular acidosis
- 15. Hemolytic-uremic syndrome
 - a. Know the etiology and understand the pathophysiology of hemolytic-uremic syndrome

- b. Recognize signs and symptoms and differential diagnosis of hemolytic-uremic syndrome
 - c. Recognize and interpret relevant laboratory studies for hemolytic-uremic syndrome
 - d. Recognize life-threatening complications of hemolytic-uremic syndrome and its treatment
 - e. Plan management of acute hemolytic-uremic syndrome
16. Renal stones
- a. Recognize the signs and symptoms of renal stones
 - b. Plan the management of acute renal stones and their complications
 - c. Know the epidemiology and etiology of renal stones
17. Myoglobinuria
- a. Know the etiology and understand the pathophysiology of rhabdomyolysis/myoglobinuria
 - b. Recognize signs and symptoms of rhabdomyolysis/myoglobinuria
 - c. Recognize and interpret relevant laboratory studies for rhabdomyolysis/myoglobinuria
 - d. Recognize life-threatening complications of rhabdomyolysis/myoglobinuria and its treatment
 - e. Plan management of acute rhabdomyolysis/myoglobinuria
- M. Rheumatologic/immunologic
1. Juvenile rheumatoid arthritis
- a. Know the epidemiology and understand the pathophysiology of juvenile rheumatoid arthritis
 - b. Recognize and differentiate by age signs and symptoms of juvenile rheumatoid arthritis
 - c. Recognize and interpret relevant laboratory and imaging studies for juvenile rheumatoid arthritis
 - d. Plan management of complications of juvenile rheumatoid arthritis and its treatment
 - e. Know the management of juvenile rheumatoid arthritis
2. Systemic lupus erythematosus
- a. Know the epidemiology and understand the pathophysiology of systemic lupus erythematosus
 - b. Recognize signs and symptoms of systemic lupus erythematosus by age
 - c. Recognize and interpret relevant laboratory and imaging studies for systemic lupus erythematosus
 - d. Recognize life-threatening complications of systemic lupus erythematosus and its treatment
 - e. Plan management of complications of systemic lupus erythematosus
 - f. Know the management of chronic systemic lupus erythematosus
3. Dermatomyositis
- a. Plan the management of complications of dermatomyositis and its treatment
 - b. Know the epidemiology of dermatomyositis
 - c. Recognize the signs and symptoms of dermatomyositis and its complications
4. Scleroderma
- a. Plan the management of complications of scleroderma

- b. Know the epidemiology of scleroderma
 - c. Recognize signs and symptoms of scleroderma and its complications
- 5. Periarteritis nodosa
 - a. Plan the management of complications of periarteritis nodosa
 - b. Recognize signs and symptoms of periarteritis nodosa and its complications
- 6. Kawasaki syndrome
 - a. Understand the pathophysiology of Kawasaki syndrome
 - b. Recognize signs and symptoms and differential diagnosis of Kawasaki syndrome
 - c. Recognize and interpret relevant laboratory and imaging studies for Kawasaki syndrome
 - d. Recognize life-threatening complications of Kawasaki syndrome and its treatment
 - e. Plan management of Kawasaki syndrome
 - f. Know the epidemiology of Kawasaki syndrome
- 7. Anaphylactoid (Henoch-Schoenlein) purpura
 - a. Know the etiology and understand the pathophysiology of anaphylactoid (Henoch-Schoenlein) purpura
 - b. Recognize signs and symptoms of anaphylactoid (Henoch-Schoenlein) purpura
 - c. Recognize and interpret relevant laboratory and imaging studies for anaphylactoid (Henoch-Schoenlein) purpura
 - d. Recognize life-threatening complications of anaphylactoid (Henoch-Schoenlein) purpura and its treatment
 - e. Plan management of acute anaphylactoid (Henoch-Schoenlein) purpura
- N. Transplant Medicine (Solid Organ/Bone Marrow/Stem Cell)
 - 1. Recognize potentially life-threatening complications of organ transplantation in a child
 - 2. Plan the management of potentially life-threatening complications of organ transplantation in a child
 - 3. Recognize the signs of organ rejection in a pediatric transplant patient
 - 4. Plan the management of a child with rejection of a transplanted organ
 - 5. Know the causes of fever in a pediatric transplant patient
 - 6. Plan the management of a pediatric transplant patient with fever
- 4. **Emergencies Treated Surgically or Requiring Surgical Consultation**
 - A. Gastrointestinal
 - 1. Appendicitis
 - a. Recognize signs and symptoms of appendicitis in children of different ages
 - b. Know the indications for and interpret results of ancillary studies in patients with suspected acute appendicitis
 - c. Plan the management of acute appendicitis
 - 2. Meckel diverticulum
 - a. Recognize signs and symptoms of Meckel diverticulum
 - b. Know the indications for and interpret the results of ancillary studies in patients with Meckel diverticulum
 - c. Plan the management of Meckel diverticulum and potential complications of this condition
 - 3. Intussusception
 - a. Know the etiology and understand the pathophysiology of intussusception
 - b. Recognize signs and symptoms of intussusception

- c. Know the indications for and interpret results of ancillary studies in patients with intussusception
 - d. Plan the management of acute intussusception and the potential complications of the condition
 - 4. Inguinal hernia
 - a. Know the pathophysiology of inguinal hernia
 - b. Recognize signs and symptoms of inguinal hernia
 - c. Plan the acute management of inguinal hernia and potential complications of this condition
 - 5. Diaphragmatic hernia
 - a. Know the pathophysiology of diaphragmatic hernia
 - b. Recognize signs and symptoms of diaphragmatic hernia
 - c. Know the indications for and interpret results of ancillary studies in patients with diaphragmatic hernias
 - d. Plan the management of acute diaphragmatic hernia and the potential complications of this condition
 - 6. Volvulus
 - a. Know the etiology and understand the pathophysiology of malrotation of the gut and acute midgut volvulus
 - b. Recognize signs and symptoms and complications of acute midgut volvulus
 - c. Know the indications for and interpret results of ancillary studies in patients with acute midgut volvulus
 - d. Plan the management of acute midgut volvulus and potential complications associated with this condition
 - 7. Pyloric stenosis
 - a. Know the pathophysiology of pyloric stenosis
 - b. Recognize signs and symptoms of pyloric stenosis
 - c. Know the indications for and interpret results of ancillary studies in patients with pyloric stenosis
 - d. Plan the management of acute pyloric stenosis and potential complications associated with this condition
 - 8. Obstruction
 - a. Know the etiology and signs and symptoms of gastrointestinal obstruction
 - b. Recognize the signs and symptoms of gastrointestinal obstruction
 - c. Know the indications for and interpret results of ancillary studies in patients with gastrointestinal obstruction
 - d. Plan the management of acute gastrointestinal obstruction and potential complications of this condition
 - 9. Hirschsprung disease
 - a. Know the etiology and understand the pathophysiology of Hirschsprung disease
 - b. Recognize the signs and symptoms of Hirschsprung disease
 - c. Plan the management of acute Hirschsprung disease and potential complications of this condition (eg, acute ulcerative enterocolitis)
 - d. Know the indications for and interpret results of ancillary studies in suspected Hirschsprung disease
- B. Dental

1. Know how to evaluate and manage dental abscesses
- C. Ophthalmologic
 1. Iritis
 - a. Recognize the signs and symptoms of traumatic iritis
 - b. Provide appropriate management for a child with iritis
 2. Uveitis
 - a. Know the etiology and understand the pathophysiology of uveitis
 - b. Recognize the signs and symptoms of uveitis
 - c. Provide appropriate management for a child with uveitis
 - d. Be aware of the systemic illnesses associated with uveitis
 3. Conjunctivitis
 - a. Know the etiology of conjunctivitis
 - b. Recognize the signs and symptoms of conjunctivitis
 - c. Provide appropriate management for a child with conjunctivitis
 4. Hordeolum and chalazion
 - a. Know how to evaluate and manage hordeolum and chalazion
 5. Glaucoma
 - a. Know how to evaluate and manage glaucoma
- D. Urologic
 1. Priapism
 - a. Know how to evaluate and manage priapism
 2. Acute urinary retention
 - a. Know the etiology and understand the pathophysiology of acute urinary retention
 - b. Know how to evaluate and manage acute urinary retention
 3. Penile problems
 - a. Know presentation and management of phimosis
 - b. Recognize signs and symptoms of common penile problems (including penile swelling, phimosis, paraphimosis, balanoposthitis, etc)
 - c. Know how to evaluate and manage penile problems (penile swelling, phimosis, paraphimosis, balanoposthitis, etc)
 - d. Know the presentation and management of paraphimosis
 - e. Know the presentation and management of penile swelling
 - f. Know the presentation and management of balanoposthitis
 4. Torsion of the testis
 - a. Know how to evaluate testicular torsion
 - b. Know how to manage testicular torsion
 5. Epididymitis/Orchitis
 - a. Know how to evaluate and manage epididymitis/orchitis
 - b. Identify the etiologic cause or agent by age for epididymitis/orchitis
- E. Gynecologic
 1. Ectopic pregnancy
 - a. Understand the epidemiology and pathophysiology of ectopic pregnancy
 - b. Recognize the signs and symptoms and complications of ectopic pregnancy
 - c. Know the indications for and interpret results of ancillary studies in patients with ectopic pregnancies

- d. Provide management for a patient with an ectopic pregnancy and the potential complications of this condition
- e. Identify the risk factors for ectopic pregnancy
- 2. Dysmenorrhea
 - a. Know the etiology and understand the pathophysiology of dysmenorrhea
 - b. Recognize the signs and symptoms and complications of dysmenorrhea
 - c. Know the indications for and interpret results of ancillary studies in patients with dysmenorrhea
 - d. Plan the management of acute dysmenorrhea
- 3. Dysfunctional uterine bleeding
 - a. Know the etiology and understand the pathophysiology of dysfunctional uterine bleeding
 - b. Recognize the signs and symptoms and complications of dysfunctional uterine bleeding
 - c. Know the indications for and interpret results of ancillary studies dysfunctional uterine bleeding
 - d. Plan management of acute dysfunctional uterine bleeding
- 4. Imperforate hymen
 - a. Know how to evaluate and manage complications of imperforate hymen
- 5. Labial adhesions
 - a. Know how to evaluate and manage labial adhesions
- 6. Urethral prolapse
 - a. Know how to evaluate and manage urethral prolapse
- F. Orthopedic
 - 1. Slipped capital femoral epiphysis
 - a. Know the etiology and understand the pathophysiology of slipped capital femoral epiphysis
 - b. Recognize the signs and symptoms of slipped capital femoral epiphysis
 - c. Know the indications for and interpret results of ancillary studies in patients with slipped capital femoral epiphysis
 - d. Plan the acute management of slipped capital femoral epiphysis
 - 2. Avascular necrosis
 - a. Know the etiology and understand the pathophysiology of avascular necrosis
 - b. Recognize the signs and symptoms and complications of avascular necrosis
 - c. Know the indications for and interpret results of ancillary studies in patients with avascular necrosis
 - d. Plan management of avascular necrosis
 - e. Know the most likely anatomic sites for avascular necrosis
 - 3. Developmental dysplasia of the hip
 - a. Know how to evaluate and manage congenital dislocation of the hip
- G. Neurosurgical
 - 1. Hydrocephalus
 - a. Know the etiology and understand the pathophysiology of hydrocephalus
 - b. Recognize the signs and symptoms and complications of hydrocephalus
 - c. Know the indications for and interpret results of ancillary studies in patients with hydrocephalus

- d. Plan the management of acute hydrocephalus
- e. Plan the management of suspected hydrocephalus
- f. Recognize the signs and symptoms of ventricular shunt complications
- g. Know the indications for and interpret results of ancillary studies in suspected ventricular shunt complications
- 2. Arteriovenous malformation and aneurysm
 - a. Know the etiology and understand the pathophysiology of arteriovenous malformation and aneurysm
 - b. Recognize the signs and symptoms and complications of arteriovenous malformation and aneurysm
 - c. Know the indications for and interpret results of ancillary studies in patients with arteriovenous malformation and aneurysm
 - d. Plan the management of acute arteriovenous malformation and aneurysm

H. Cardiothoracic

- 1. Pericardial Effusion and tamponade
 - a. Know the etiology and understand the pathophysiology of pericardial effusion and tamponade
 - b. Recognize the signs and symptoms and complications of pericardial effusion and tamponade
 - c. Know the indications for and interpret results of ancillary studies in patients with pericardial effusion and tamponade
 - d. Plan management of acute pericardial effusion and tamponade
- 2. Pleural effusion
 - a. Know the etiology and understand the pathophysiology of pleural effusion
 - b. Recognize the signs and symptoms and complications of pleural effusion (including acute cardiorespiratory failure with large effusions)
 - c. Know the indications for and interpret results of ancillary studies in patients with pleural effusions
 - d. Plan management of acute pleural effusion (including emergent draining)

5. Toxicology

A. General principles

- 1. Epidemiology
 - a. Know the major types of ingestions by age
 - b. Know the epidemiology of fatal ingestions by children
- 2. Prevention of Absorption, Enhancement of Elimination
 - a. Know which chemicals require skin decontamination
 - b. Know which chemicals require immediate eye decontamination
 - c. Know the role of gastrointestinal tract decontamination
 - d. Know the role of enhanced elimination, including the use of multiple-dose activated charcoal
 - e. Know the role of enhanced elimination through alkalinization of the urine
 - f. Know the role of activated charcoal, including substances not adsorbed by charcoal
 - g. Know the role of enhanced elimination through hemodialysis
- 3. Clues to diagnosis
 - a. Know which ingestions commonly cause metabolic acidosis
 - b. Know which ingestions are rapidly lethal

- c. Know which ingestions are radiopaque
- d. Know which ingestions commonly cause seizures
- e. Know which ingestions commonly cause dysrhythmias
- 4. Treatment
 - a. Know indications for use of naloxone
 - b. Know indications for use of cyanide kit
 - c. Know the indications and contraindications of flumazenil
 - d. Know the indications and contraindications of fomepizole
- 5. Poisoning syndromes
 - a. Recognize the signs and symptoms of serotonin syndrome, including its differential diagnosis
 - b. Plan the management of serotonin syndrome
 - c. Recognize the signs and symptoms of neuroleptic malignant syndrome
 - d. Plan the management of neuroleptic malignant syndrome
 - e. Know which ingestions are associated with delayed toxicity (eg, oral hypoglycemic drugs)
 - f. Plan the management of ingestion of an agent associated with delayed toxicity
 - g. Recognize the signs and symptoms of methemoglobinemia
 - h. Recognize and interpret relevant laboratory and monitoring studies for methemoglobinemia
 - i. Plan the management of methemoglobinemia
- 6. Withdrawal
 - a. Recognize signs and symptoms of alcohol withdrawal
 - b. Recognize signs and symptoms of benzodiazepine withdrawal
 - c. Recognize signs and symptoms of opioid withdrawal
 - d. Plan management of alcohol withdrawal
 - e. Plan management of benzodiazepine withdrawal
 - f. Plan management of opioid withdrawal
- B. Household agents
 - 1. Alkalis and acids
 - a. Know specific decontamination techniques for alkali and acid exposures
 - b. Plan the management of ingested alkali and acids
 - c. Plan the management of button (disk) battery ingestion
 - d. Plan the management of hydrofluoric acid exposure
 - e. Plan the management of dermal hydrochloric acid exposure
 - f. Plan the management of inhaled alkali and acids
 - 2. Hydrocarbons
 - a. Understand the variability of toxicity in hydrocarbon exposures
 - b. Recognize the clinical findings in hydrocarbon exposures
 - c. Plan the management of hydrocarbon aspiration
 - 3. Organophosphates, including nerve agents
 - a. Recognize signs and symptoms of organophosphate or nerve agent exposure
 - b. Recognize and interpret relevant laboratory and monitoring studies for organophosphate exposure
 - c. Plan the management of acute organophosphate exposure
 - 4. Lead

- a. Recognize signs and symptoms of lead encephalopathy
 - b. Recognize and interpret relevant laboratory, imaging, and monitoring studies for lead exposure
 - c. Plan the management of acute lead exposure
 - d. Plan the management of acute lead encephalopathy
 - e. Know the epidemiology of childhood lead poisoning
- C. Medications
- 1. Acetaminophen
 - a. Recognize signs and symptoms of acetaminophen poisoning
 - b. Recognize and interpret relevant laboratory and monitoring studies for acetaminophen poisoning
 - c. Plan the management of acute acetaminophen toxicity, including special issues in the pregnant patient
 - 2. Anticholinergics
 - a. Recognize signs and symptoms of anticholinergic poisoning
 - b. Recognize and interpret relevant laboratory and monitoring studies for anticholinergic poisoning
 - c. Plan the management of acute anticholinergic toxicity
 - 3. Iron
 - a. Recognize signs and symptoms of iron poisoning
 - b. Recognize and interpret relevant laboratory and monitoring studies for iron poisoning
 - c. Plan the management of acute iron toxicity, including special issues in the pregnant patient
 - 4. Narcotics
 - a. Recognize signs and symptoms of narcotic poisoning
 - b. Plan the management of acute narcotic toxicity
 - 5. Phenthiazines, butyrophenones, & other neuroleptics
 - a. Recognize signs and symptoms of poisoning by phenthiazines, butyrophenone, and other neuroleptics
 - b. Plan the management of acute toxicity by phenthiazines and other neuroleptics
 - c. Recognize the complications of treatment with a phenthiazine or butyrophenone
 - 6. Salicylates
 - a. Recognize signs and symptoms of salicylate poisoning
 - b. Recognize and interpret relevant laboratory and monitoring studies for poisoning
 - c. Plan the management of acute salicylate toxicity
 - d. Know the epidemiology and understand the pathophysiology of aspirin toxicity in children
 - 7. Theophylline
 - a. Recognize signs and symptoms of theophylline poisoning
 - b. Recognize and interpret relevant laboratory and monitoring studies for theophylline poisoning
 - c. Plan the management of acute theophylline toxicity
 - 8. Antidepressants
 - a. Recognize signs and symptoms of tricyclic antidepressant poisoning (including cyclic antidepressants)

- b. Recognize and interpret relevant laboratory and monitoring studies for antidepressant poisoning
- c. Plan the management of acute tricyclic antidepressant toxicity
- d. Recognize the signs and symptoms of toxicity by selective serotonin reuptake inhibitors
- e. Plan the management of toxicity by selective serotonin reuptake inhibitors
- 9. Cardiovascular agents (eg, digoxin, beta-blockers)
 - a. Recognize the signs and symptoms of digoxin toxicity
 - b. Plan the management of digoxin toxicity
 - c. Recognize the signs and symptoms of clonidine toxicity
 - d. Know the uses and indication for glucagon therapy
 - e. Recognize the signs and symptoms of poisoning by beta-blockers or calcium channel blockers
 - f. Plan the management of poisoning by beta-blockers or calcium channel blockers
- 10. Drug-drug interactions
 - a. Know the principles of prevention in drug-drug interactions
- 11. Oral Hypoglycemic Drugs
 - a. Recognize signs and symptoms of oral hypoglycemic ingestion
 - b. Recognize and interpret relevant laboratory and monitoring studies for oral hypoglycemic ingestion
 - c. Plan the management of oral hypoglycemic ingestion
- D. Illicit agents
 - 1. General Principles
 - a. Plan acute medical management of patients who abuse substances
 - 2. Alcohols
 - a. Recognize signs and symptoms of ethanol ingestion
 - b. Recognize and interpret relevant laboratory and monitoring studies for ethanol ingestion
 - c. Plan the management of acute ethanol toxicity
 - d. Recognize signs and symptoms of isopropyl ingestion
 - e. Recognize and interpret relevant laboratory and monitoring studies for isopropyl ingestion
 - f. Plan the management of acute isopropyl toxicity
 - g. Recognize signs and symptoms of methanol ingestion
 - h. Recognize and interpret relevant laboratory and monitoring studies for methanol ingestion
 - i. Plan the management of acute methanol toxicity
 - j. Recognize signs and symptoms of ethylene glycol ingestion
 - k. Recognize and interpret relevant laboratory and monitoring studies for ethylene glycol ingestion
 - l. Plan the management of acute ethylene glycol toxicity
 - m. Plan the acute management of alcoholic pediatric patients
 - 3. Sympathomimetics (including cocaine, amphetamines, MDMA, and Ecstasy)
 - a. Recognize signs and symptoms of abuse of cocaine
 - b. Plan the management of acute toxicity of cocaine
 - c. Recognize signs and symptoms of abuse of amphetamines, including Ecstasy

- d. Plan the management of acute toxicity of amphetamines, including Ecstasy
- 4. Hallucinogens
 - a. Recognize signs and symptoms of hallucinogen abuse
 - b. Plan the management of acute hallucinogen toxicity
- 5. Other Substances of Abuse (ketamine, PCP, and GHB-like agents)
 - a. Recognize signs and symptoms of ketamine or PCP abuse
 - b. Plan the management of acute toxicity of ketamine or PCP
 - c. Recognize the signs and symptoms of abuse of GHB-like agents
 - d. Plan the management of acute toxicity of GHB-like agents
- E. Plants
 - 1. Common toxic plants
 - a. Recognize signs and symptoms of ingestion of common toxic plants
 - b. Recognize and interpret relevant laboratory and monitoring studies for the ingestion of toxic plants
 - c. Plan the management of acute toxicity of plants
 - 2. Mushrooms
 - a. Recognize signs and symptoms of toxic mushroom ingestion
 - b. Plan the management of acute mushroom toxicity
- F. Herbal/alternative remedies
 - 1. Plan the management of poisoning by herbal or alternative remedies
 - 2. Recognize signs and symptoms of poisoning by herbal or alternative remedies
- 6. **Environmental Emergencies**
 - A. Dysbarism
 - 1. Understand the pathophysiology of barotrauma and differentiate according to severity and type of exposure
 - 2. Recognize the signs and symptoms of each type of barotrauma in children
 - 3. Plan the management of barotrauma
 - B. High-Altitude Emergencies
 - 1. Recognize the signs and symptoms of each type of high-altitude illness
 - 2. Plan the management of each type of high-altitude illness
 - C. Animal and Human Bites
 - 1. Plan the management of bites of domestic and wild animals
 - 2. Know the etiology of causative pathogens that produce illness after bites from domestic and wild animals, and recognize the signs and symptoms of complications of bites
 - 3. Recognize the signs and symptoms of life-and limb-threatening complications of bites of domestic and wild animals
 - 4. Understand the pathophysiology and plan the management of human bites
 - 5. Know risk factors, indications for prophylaxis, and plan the management of potential rabies exposure
 - 6. Recognize the signs and symptoms of complications of human bites
 - D. Snake Envenomations
 - 1. Plan the management of snake envenomations by type and severity
 - 2. Know which snake envenomations are liable to produce significant illness or injury in children

3. Recognize the signs and symptoms of life- and limb-threatening complications of snake envenomations
 4. Plan the management of snake envenomations
- E. Arthropod Bites and Stings
1. Plan the management of bites/stings by type, including scorpions, spiders, ticks, and insects
 2. Know the bites/stings that produce significant illness or injury in children
 3. Recognize the signs and symptoms of complications of bites and stings
- F. Aquatic Envenomations
1. Know the aquatic punctures, bites, and envenomations likely to produce significant injury or illness, including those caused by stingrays, catfish, sharks, scorpionfish, and stonefish
 2. Recognize signs and symptoms of life-or-limb-threatening complications of aquatic envenomations
 3. Plan the management of acute marine bites, punctures, and envenomations
- G. Burns
1. Know the epidemiology of minor and life-threatening burns in the pediatric population
 2. Understand the pathophysiology of burn injuries
 3. Recognize the signs and symptoms of life-threatening burn injuries
 4. Plan the acute management of burns
 5. Recognize clinical presentations and differentiate among injuries caused by thermal, chemical, and electrical burns
 6. Know the methods for determining depth and extent (ie, percentage of body surface) of burn injury
 7. Know the criteria for admission and transfer to a burn center for children with burns
- H. Inhalation injuries/carbon monoxide poisoning
1. Understand the pathophysiology of inhalation injuries and carbon monoxide and cyanide poisoning in infants and young children
 2. Recognize and interpret relevant ancillary studies for the management of inhalation injuries and carbon monoxide and cyanide poisonings
 3. Recognize the signs and symptoms of life-threatening inhalation injuries and carbon monoxide and cyanide poisoning
 4. Plan the management of inhalation injuries and carbon monoxide and cyanide poisonings, and know the indications for hyperbaric oxygen therapy
 5. Know the common etiologies of fatal or disabling inhalation injuries and carbon monoxide and cyanide poisoning in children
 6. Know the most common life-threatening types of inhalation injuries and carbon monoxide and cyanide poisoning to children
- I. Drowning and Submersion Injuries
1. Know the common etiologies and complications of drowning/ submersion injuries and differentiate by age group
 2. Understand the pathophysiology of drowning/submersion injuries
 3. Recognize the injuries in drowning/submersion by anatomic location and clinical presentation
 4. Know the prognostic indicators in life-threatening drowning/submersion injuries

5. Plan the management of a pediatric drowning/submersion injury during the prehospital phase of care
 6. Plan the management of pediatric drowning/submersion injury in the emergency department
- J. Lightning and other Electrical injuries
1. Know the major types of significant electrical injuries
 2. Recognize the signs and symptoms of potentially life-threatening electrical injuries
 3. Plan the management of pediatric patients with electrical injuries
 4. Plan the management of acute lightning injury
- K. Hyperthermia
1. Know the common etiologies and risk factors for hyperthermia in children
 2. Differentiate the most common causes of fatal hyperthermia by age group
 3. Recognize the signs of life-threatening hyperthermia in children
 4. Recognize and interpret relevant ancillary studies used in the management of hyperthermia in children
 5. Plan the management of severe hyperthermia
- L. Hypothermia
1. Know the common etiologies of hypothermic injury in children
 2. Understand the pathophysiology of systemic and local hypothermia in children
 3. Recognize the signs and symptoms of life-threatening systemic hypothermia
 4. Recognize the signs and symptoms of local hypothermia and know the staging of severity of injury in hypothermic injury
 5. Plan the management of local and systemic injuries due to hypothermia
 6. Plan the management of local hypothermia
- M. Radiation
1. Plan the evaluation and management of acute radiation exposure
 2. Understand the pathophysiology and differentiate between the stages of acute radiation sickness/syndrome
 3. Plan ED preparation, healthcare worker protection, and patient decontamination in radiation exposure
- N. Biologic Exposures (Bioterrorism)
1. Recognize key clinical features and diagnostic methods for biological exposures, including those illnesses caused by anthrax, botulinum toxin, brucellosis, encephalitides, mycotoxins, plague, Q fever, smallpox, staphylococcal enterotoxins, tularemia, and ricin
 2. Recognize and differentiate between the clinical features of smallpox and other infections
 3. Plan triage, decontamination, and healthcare worker protection in biologic exposures
 4. Plan the management of biologic exposures (ie, chemoprophylaxis) and the treatment of acute illness due to biologic agents in children
- O. Chemical Exposures (Chemical Terrorism)
1. Recognize key clinical features and know diagnostic methods for nonaccidental chemical exposures, including blistering agents, cyanide, nerve agents, and phosgene
 2. Plan triage, decontamination, and healthcare worker protection in chemical exposures
 3. Plan the management of nonaccidental chemical exposures in children
7. **Psychosocial**

A. Child Maltreatment

1. Physical abuse

a. Etiology

1. Know the factors that contribute to physical abuse of children

b. Recognition

1. Recognize the common signs and symptoms of physical abuse in children
2. Recognize unusual or subtle signs of physical abuse in children
3. Recognize the signs of common illnesses or injuries that may mimic physical abuse
4. Recognize common fractures associated with bony injuries characteristic of physical abuse

c. Management

1. Know the need to report physical abuse cases to the proper authorities
2. Know indications for hospitalizing a physically abused child

2. Sexual abuse

a. Etiology

1. Know the factors that lead to sexual abuse of children

b. Pathophysiology

1. Understand the ways in which children reveal sexual abuse
2. Understand the differences between sexually abused children and adult rape victims
3. Understand the short-term and long-term consequences of sexual abuse in children

c. Recognition

1. Recognize the signs and symptoms of sexual abuse in children
2. Know the relationship between sexually transmitted diseases and sexual abuse of children
3. Know the significance of specific findings on physical examination and evaluation of a sexually abused child
4. Recognize the findings that may mimic sexual abuse of a child

d. Management

1. Know the principles of forensic medicine in victims of sexual abuse (eg, documentation, chain of evidence, court testimony)
2. Know the indications for hospitalization of a sexually abused child and describe indications for examination of such a patient under anesthesia
3. Recognize and interpret relevant laboratory studies for the evaluation of victims of sexual abuse
4. Plan the of evaluation of a sexually assaulted child
5. Plan the management of rape victims, including the indications for postexposure prophylaxis and emergency contraception
6. Know the principles of interviewing victims of sexual abuse (eg, avoiding repeated interviews, interviewing family and children individually)

3. Neglect

a. Etiology

1. Know the factors that lead to neglect of children

b. Recognition

1. Recognize the signs and symptoms of nonorganic failure to thrive as a manifestation of neglect
2. Recognize signs of neglect other than nonorganic failure to thrive
- c. Management
 1. Know the indications for hospitalizing a child who has failed to thrive
 2. Know the physician's role in reporting cases of child neglect
4. Psychological/emotional abuse
 - a. Recognize the signs and symptoms of emotional abuse
5. Munchausen Syndrome by Proxy
 - a. Recognize signs and symptoms of possible Munchausen syndrome by proxy
 - b. Plan the management of Munchausen syndrome by proxy
- B. Behavioral/emotional emergencies
 1. Depression
 - a. Etiology/pathophysiology
 - b. Recognition
 1. Recognize signs and symptoms of depression in pediatric patients
 - c. Management
 1. Know indications for hospitalization or referral of a depressed child or adolescent
 2. Suicide
 - a. Etiology
 1. Know the causes of suicide in children and adolescents
 - b. Pathophysiology
 1. Understand the concepts of lethality and intent in the pathophysiology of suicide attempts
 - c. Recognition
 1. Recognize subtle or hidden suicide attempts
 2. Recognize the potential for suicide
 - d. Management
 1. Plan the management of a child who has attempted suicide, eg, hospital options, family capability, psychiatric consultation
 3. Psychosis
 - a. Recognition
 1. Recognize features that differentiate organic psychosis from nonorganic psychosis
 - b. Management
 1. Plan the management of a psychotic patient
 4. School refusal
 - a. Recognize the features and plan management of school refusal
 5. Conduct disorder
 - a. Recognize the features and plan management of conduct disorder
 6. Minor behavioral complaints
 - a. Plan the evaluation and management of colic
 - b. Plan the evaluation and management of prolonged crying in infancy
 - c. Plan the evaluation and management of breath-holding
 - d. Plan the evaluation and management of hyperventilation

- e. Plan the evaluation and management of sleep disorders, including parasomnias (sleep walking, night terror, nightmares)
- 7. Anxiety disorders
 - a. Recognize signs and symptoms of acute anxiety, including hyperventilation
 - b. Plan management of acute anxiety, including hyperventilation
- C. Adolescent emergencies
 - 1. Eating disorders
 - a. Recognize the signs and symptoms of eating disorders
 - b. Plan the acute management of eating disorders
 - c. Recognize and interpret relevant laboratory, imaging, and monitoring findings in eating disorders
 - d. Recognize the complications of eating disorders
 - 2. Substance abuse
 - a. Recognize signs and symptoms of substance abuse
 - b. Plan the management of substance abuse
 - c. Plan the assessment of substance abuse, including use of toxicologic screening examination
 - d. Recognize the complications of substance abuse
 - e. Recognize the signs and symptoms of alcoholism
 - f. Recognize the complications of alcoholism in adolescents
 - 3. Runaways
 - a. Know risk factors associated with an adolescent runaway
 - b. Plan the management of a patient who is a runaway
 - 4. Somatoform disorders (conversion disorders, chronic pain syndrome)
 - a. Recognize signs and symptoms of somatoform disorders (conversion disorders, chronic pain syndrome)
 - b. Plan the management of somatoform disorders (conversion disorders, chronic pain syndrome)
- D. Death and dying
 - 1. Differentiate by age the etiologies of sudden unexplained death
 - 2. Differentiate by age grief reactions of the family members after the sudden death of a child
 - 3. Recognize features that differentiate deaths due to child abuse from deaths due to other causes
 - 4. Know relevant data gathering in the diagnosis of sudden unexplained infant death
 - 5. Know the principles of family management that should be implemented when a child dies
 - 6. Know the appropriate use of family member presence while caring for critically ill or injured children in the ED
- E. Pain management
 - 1. Know the need for pain alleviation in the pediatric patient
 - 2. Understand essential principles of pain management, including pharmacologic and nonpharmacologic agents
 - 3. Know the actions of and indications for various drugs appropriate in pain management and sedation
 - 4. Know contraindications for various drugs available for pain management and sedation

5. Plan the use of nonpharmacologic therapies for pain management
 6. Plan the use of topical agents for pain management
 7. Plan the use of infiltrative agents for pain management
 8. Know the effects of parental presence for lessening pain during invasive procedures
 9. Know the techniques for assessment of pain in pediatric patients
- F. Violence and children
1. Know the epidemiology of violence as it impacts children and adolescents
 2. Recognize the signs and symptoms of exposure to violence in children, adolescents, and adults
 3. Understand the dynamics of family violence as it impacts on children and adolescents
 4. Understand the dynamics of community violence as it impacts on children and adolescents
 5. Know the role of the physician as part of a multidisciplinary team concerned with the care of a child or adolescent witness to domestic or community violence
 6. Plan the intervention for a parent/caretaker who is a possible victim of domestic partner violence
8. **Signs and Symptoms**
- A. Abdominal Mass/Distension
1. Differentiate by age the etiology, location, and pathophysiology of abdominal masses
 2. Plan diagnostic evaluation and initial intervention for patients with abdominal masses
 3. Recognize serious and/or life-threatening causes of abdominal masses
- B. Apnea
1. Differentiate by age the etiology and the pathophysiology of apnea
 2. Plan diagnostic evaluation and initial intervention for patients with apnea
 3. Recognize serious and/or life-threatening causes of apnea
- C. Arthritis/Arthralgia
1. Differentiate by age the etiology and the pathophysiology of arthritis and arthralgia
 2. Plan diagnostic evaluation and initial intervention for patients with arthritis and arthralgia
 3. Recognize serious and/or life-threatening causes of arthritis and arthralgia
- D. Ataxia
1. Differentiate by age the etiology and understand the pathophysiology of ataxia
 2. Plan diagnostic evaluation and initial intervention for patients with ataxia
 3. Recognize serious and/or life-threatening causes of ataxia
- E. Breast Lesion
1. Differentiate by age the etiology and understand the pathophysiology of breast lesions
 2. Plan diagnostic evaluation and initial intervention for patients with a breast lesion
- F. Coma and Altered Level of Consciousness
1. Differentiate by age the etiology and understand the pathophysiology of altered mental status
 2. Plan diagnostic evaluation and initial intervention for patients with altered mental status
 3. Recognize serious and/or life-threatening causes of altered mental status
- G. Constipation
1. Differentiate by age the etiology and the pathophysiology of constipation
 2. Plan diagnostic evaluation and initial intervention for patients with constipation

3. Recognize serious and/or life-threatening causes of constipation
- H. Cough
1. Differentiate by age the etiology and the pathophysiology of cough
 2. Plan diagnostic evaluation and initial intervention for patients with coughs
 3. Recognize serious and/or life-threatening causes of cough
- I. Cyanosis
1. Know the etiology and understand the pathophysiology of cyanosis, eg, cardiac
 2. Recognize signs and symptoms of cyanosis
 3. Recognize and interpret relevant laboratory and imaging studies for cyanosis
 4. Recognize life-threatening complications of cyanosis
 5. Plan management of acute cyanosis
- J. Crying
1. Know the causes of intractable crying
 2. Plan diagnostic evaluation and initial management for patients with intractable crying
 3. Recognize serious and/or life-threatening causes of intractable crying
- K. Dehydration
1. Differentiate by age the etiology and understand the pathophysiology of dehydration
 2. Plan diagnostic evaluation and initial intervention for patients with dehydration
 3. Recognize serious and/or life-threatening causes of dehydration
- L. Diarrhea
1. Differentiate by age the etiology and the pathophysiology of diarrhea
 2. Plan diagnostic evaluation and initial intervention for patients with diarrhea
 3. Recognize serious and/or life-threatening causes of diarrhea
- M. Dizziness/Vertigo
1. Differentiate by age the etiology and the pathophysiology of vertigo
 2. Plan diagnostic evaluation and initial intervention for patients with vertigo
 3. Recognize serious and/or life-threatening causes of vertigo
- N. Edema
1. Differentiate by age the etiology and the pathophysiology of edema
 2. Plan diagnostic evaluation and initial intervention for patients with edema
 3. Recognize serious and/or life-threatening causes of edema
- O. Epistaxis
1. Differentiate by age the etiology and the pathophysiology of epistaxis
 2. Plan diagnostic evaluation and initial intervention for patients with epistaxis
 3. Recognize serious and/or life-threatening causes of epistaxis
- P. Eye
1. Redness
 - a. Differentiate by age the etiology and the pathophysiology of eye redness
 - b. Plan diagnostic evaluation and initial intervention for patients with eye redness
 - c. Recognize serious and/or vision-threatening causes of eye redness
 2. Visual Disturbances
 - a. Differentiate by age the etiology and the pathophysiology of visual disturbances
 - b. Plan diagnostic evaluation and initial intervention for patients with visual disturbances
 - c. Recognize serious and/or life-threatening causes of visual disturbances
- Q. Fever

1. Understand the pathophysiology of fever
 2. Plan diagnostic evaluation and initial intervention for febrile patients
 3. Recognize serious and/or life-threatening causes of fever
 4. Understand fever measurement
- R. Foreign Body
1. Ingestion
 - a. Know the types of foreign bodies that are typically ingested by children
 - b. Plan the diagnostic evaluation and initial intervention for patients with foreign body ingestion
 2. Nasal/Otic
 - a. Know the types of foreign bodies often lodged in the nose
 - b. Plan the management for nasal/otic foreign bodies
 3. Other
 - a. Recognize other presentations involving foreign bodies (tonsillar, vaginal, rectal, etc.) in children and adolescents
 - b. Plan the management for other types of foreign bodies
- S. Gastrointestinal Bleeding
1. Upper
 - a. Differentiate by age the etiology and the pathophysiology of upper gastrointestinal bleeding
 - b. Plan diagnostic evaluation and initial intervention for patients with upper gastrointestinal bleeding
 - c. Recognize serious and/or life-threatening causes of upper gastrointestinal bleeding
 2. Lower
 - a. Differentiate by age the etiology and the pathophysiology of lower gastrointestinal bleeding
 - b. Plan diagnostic evaluation and initial intervention for patients with lower gastrointestinal bleeding
 - c. Recognize serious and/or life-threatening causes of lower gastrointestinal bleeding
 - d. Differentiate by age the etiology and understand the pathophysiology of rectal bleeding
 - e. Plan diagnostic evaluation and initial intervention for patients with rectal bleeding
- T. Groin Masses
1. Differentiate by age the etiology and understand the pathophysiology of groin masses
 2. Plan diagnostic evaluation and initial intervention for patients with groin masses
 3. Recognize serious and/or life-threatening causes of groin masses
- U. Hearing Loss
1. Differentiate by age the etiology and understand the pathophysiology of sudden hearing loss
 2. Plan diagnostic evaluation and initial intervention for patients with sudden hearing loss
 3. Recognize serious and/or life-threatening causes of sudden hearing loss
- V. Heart Murmur
1. Differentiate by age the etiology and understand the pathophysiology of cardiac murmurs
 2. Plan diagnostic evaluation and initial intervention for patients with cardiac murmurs
 3. Recognize serious and/or life-threatening causes of cardiac murmurs

W. Hematuria

1. Differentiate by age the etiology and understand the pathophysiology of hematuria
2. Plan diagnostic evaluation and initial intervention for patients with hematuria
3. Recognize serious and/or life-threatening causes of hematuria

X. Hepatosplenomegaly

1. Differentiate by age the etiology and understand the pathophysiology of hepatosplenomegaly
2. Plan diagnostic evaluation and initial intervention for patients with hepatosplenomegaly
3. Recognize serious and/or life-threatening causes of hepatosplenomegaly

Y. Hypertension

1. Differentiate by age the etiology and understand the pathophysiology of hypertension
2. Plan diagnostic evaluation and initial intervention for patients with hypertension

Z. Jaundice

1. Differentiate by age the etiology and understand the pathophysiology of jaundice
2. Plan diagnostic evaluation and initial intervention for patients with jaundice
3. Recognize serious and/or life-threatening causes of jaundice

AA. Limp

1. Differentiate by age the etiology and understand the pathophysiology of limping
2. Plan diagnostic evaluation and initial intervention for patients who limp
3. Recognize serious and/or life-threatening causes of limping

BB. Lymphadenopathy

1. Differentiate by age the etiology and understand the pathophysiology of lymphadenopathy
2. Plan diagnostic evaluation and initial intervention for patients with lymphadenopathy
3. Recognize serious and/or life-threatening causes of lymphadenopathy

CC. Neck Mass

1. Differentiate by age the etiology and understand the pathophysiology of neck masses
2. Plan diagnostic evaluation and initial intervention for patients with neck masses
3. Recognize serious and/or life-threatening causes of neck masses
4. Know the differential diagnosis of neck mass by location

DD. Neck Pain/Stiffness

1. Differentiate by age the etiology and understand the pathophysiology of neck stiffness
2. Plan diagnostic evaluation and initial intervention for patients with neck stiffness
3. Recognize serious and/or life-threatening causes of neck stiffness

EE. Nasal Discharge

1. Differentiate by age the etiology and understand the pathophysiology of nasal discharge
2. Plan diagnostic evaluation and initial intervention for patients with nasal discharge

FF. Odor

1. Body Odor
 - a. Differentiate by age the etiology and understand the pathophysiology of body odors
 - b. Plan diagnostic evaluation and initial intervention for patients with body odors
2. Halitosis
 - a. Differentiate by age the etiology and understand the pathophysiology of halitosis

- b. Plan diagnostic evaluation and initial intervention for patients with halitosis
- GG. Oligomenorrhea
 - 1. Differentiate by age the etiology and understand the pathophysiology of oligomenorrhea
 - 2. Plan diagnostic evaluation and initial intervention for patients with oligomenorrhea
- HH. Oral Lesions
 - 1. Differentiate by age the etiology and understand the pathophysiology of oral lesions
 - 2. Plan diagnostic evaluation and initial intervention for patients with oral lesions
- II. Pain
 - 1. Abdomen
 - a. Differentiate by age the etiology and location and understand pathophysiology of abdominal pain
 - b. Plan diagnostic evaluation and initial intervention for patients with abdominal pain
 - c. Recognize serious and/or life-threatening causes of abdominal pain
 - 2. Back
 - a. Differentiate by age the etiology and understand the pathophysiology of back pain
 - b. Plan diagnostic evaluation and initial intervention for patients with back pain
 - c. Recognize serious and/or life-threatening causes of back pain
 - 3. Chest
 - a. Differentiate by age the etiology and understand the pathophysiology of chest pain
 - b. Plan diagnostic evaluation and initial intervention for patients with chest pain
 - c. Recognize serious and/or life-threatening causes of chest pain
 - 4. Dysphagia
 - a. Differentiate by age the etiology and understand the pathophysiology of sore throat
 - b. Plan diagnostic evaluation and initial intervention for patients with sore throats
 - c. Recognize serious and/or life-threatening causes of sore throat
 - 5. Dysuria
 - a. Differentiate by age the etiology and understand the pathophysiology of dysuria
 - b. Plan diagnostic evaluation and initial intervention for patients with dysuria
 - 6. Earache
 - a. Differentiate by age the etiology and understand the pathophysiology of earache
 - b. Plan diagnostic evaluation and initial intervention for patients with earaches
 - 7. Headache
 - a. Differentiate by age the etiology and understand the pathophysiology of headache
 - b. Plan diagnostic evaluation and initial intervention for patients with headaches
 - c. Recognize serious and/or life-threatening causes of headaches
 - 8. Toothache
 - a. Differentiate by age the etiology and understand the pathophysiology of toothache
 - b. Plan diagnostic evaluation and initial intervention for patients with toothache
- JJ. Pallor
 - 1. Differentiate by age the etiology and understand the pathophysiology of pallor
 - 2. Plan diagnostic evaluation and initial intervention for patients with pallor
 - 3. Recognize serious and/or life-threatening causes of pallor
- KK. Rash
 - 1. Eczematous

- a. Differentiate by age the etiology and understand the pathophysiology of eczematous rashes
- b. Plan initial management for patients with eczematous rashes
2. Macular/Papular/Maculopapular
 - a. Differentiate by age the etiology and understand the pathophysiology of maculopapular rashes
 - b. Plan diagnostic evaluation and initial intervention for patients with maculopapular rashes
 - c. Recognize serious and/or life-threatening causes of maculopapular rashes
 - d. Plan the diagnostic evaluation of life-threatening maculopapular rashes
 - e. Plan the management of life-threatening maculopapular rashes
 - f. Plan the management of maculopapular rashes treated on an ambulatory basis
 - g. Recognize and interpret relevant laboratory studies in the assessment of maculopapular rashes
3. Purpuric
 - a. Differentiate by age the etiology and understand the pathophysiology of purpuric rashes
 - b. Plan diagnostic evaluation and initial intervention for patients with purpuric rashes
 - c. Recognize serious and/or life-threatening causes of purpuric rashes
4. Urticarial
 - a. Differentiate by age the etiology and understand the pathophysiology of urticarial rashes
 - b. Plan diagnostic evaluation and initial intervention for patients with urticarial rashes
 - c. Recognize serious and/or life-threatening causes of urticarial rashes
5. Vesiculobullous
 - a. Differentiate by age the etiology and understand the pathophysiology of vesiculobullous rashes
 - b. Plan diagnostic evaluation and initial intervention for patients with vesiculobullous rashes
 - c. Recognize serious and/or life-threatening causes of vesiculobullous rashes
- LL. Respiratory Distress
 1. Differentiate by age the etiology and understand the pathophysiology of respiratory distress
 2. Plan diagnostic evaluation and initial intervention for patients with respiratory distress
 3. Recognize serious and/or life-threatening causes of respiratory distress
- MM. Scrotal Pain/Swelling
 1. Differentiate by age the etiology and understand the pathophysiology of scrotal pain/swelling
 2. Plan diagnostic evaluation and initial intervention for patients with scrotal pain/swelling
 3. Recognize serious and/or life-threatening causes of scrotal pain/swelling
- NN. Septic-Appearing Infant
 1. Differentiate by age the etiology and understand the pathophysiology of septic appearance in infants
 2. Plan diagnostic evaluation and initial intervention for a septic-appearing infant
 3. Recognize serious and/or life-threatening causes of septic appearance in infants

- OO. Seizure
1. Differentiate by age the etiology and understand the pathophysiology of seizures
 2. Plan diagnostic evaluation and initial intervention for patients with seizures
 3. Recognize serious and/or life-threatening causes of seizures
- PP. Stridor
1. Differentiate by age the etiology and understand the pathophysiology of stridor
 2. Plan diagnostic evaluation and initial intervention for patients with stridor
 3. Recognize serious and/or life-threatening causes of stridor
- QQ. Syncope
1. Differentiate by age the etiology and understand the pathophysiology of syncope
 2. Differentiate syncope from seizure
 3. Plan diagnostic evaluation and initial intervention for patients with syncope
 4. Recognize serious and/or life-threatening causes of syncope
- RR. Tachycardia/Palpitations
1. Differentiate by age the etiology and understand the pathophysiology of tachycardia/palpitations
 2. Plan diagnostic evaluation and initial intervention for patients with tachycardia/palpitations
 3. Recognize serious and/or life-threatening causes of tachycardia/palpitations
- SS. Urinary Frequency
1. Differentiate by age the etiology and understand the pathophysiology of urinary frequency
 2. Plan diagnostic evaluation and initial intervention for patients with urinary frequency
 3. Recognize serious and/or life-threatening causes of urinary frequency
- TT. Vaginal Bleeding
1. Differentiate by age the etiology and understand the pathophysiology of vaginal bleeding
 2. Plan diagnostic evaluation and initial intervention for patients with vaginal bleeding
 3. Recognize serious and/or life-threatening causes of vaginal bleeding
- UU. Vaginal Discharge
1. Differentiate by age the etiology and understand the pathophysiology of vaginal discharge
 2. Plan diagnostic evaluation and initial intervention for patients with vaginal discharge
- VV. Vomiting
1. Differentiate by age the etiology and understand the pathophysiology of vomiting
 2. Plan diagnostic evaluation and initial intervention for patients with vomiting
 3. Recognize serious and/or life-threatening causes of vomiting
- WW. Weakness/Flaccid Paralysis
1. Differentiate by age the etiology and understand the pathophysiology of sudden flaccid paralysis
 2. Plan diagnostic evaluation and initial intervention for patients with sudden flaccid paralysis
 3. Recognize serious and/or life-threatening causes of sudden flaccid paralysis
- XX. Wheezing
1. Differentiate by age the etiology and understand the pathophysiology of wheezing
 2. Plan diagnostic evaluation and initial intervention for patients with wheezing

3. Recognize serious and/or life-threatening causes of wheezing

YY. Weight Loss

1. Differentiate by age the etiology and understand the pathophysiology of weight loss
2. Plan diagnostic evaluation and initial intervention for patients with weight loss
3. Recognize serious and/or life-threatening causes of weight loss

9. EMS

A. EMS system organization and administration

1. Know the components of emergency medical service (EMS) systems
2. Know the legal authority of emergency medical services (EMS) agencies to plan and regulate EMS systems
3. Differentiate among basic life support (BLS), advanced life support (ALS), and two-tier (BLS and ALS) emergency medical service systems
4. Know the functioning of emergency medical services for children (EMSC) within the EMS system and the unique problems in delivering prehospital care to children
5. Recognize unique problems of rural emergency medical services for children

B. EMS personnel

1. Differentiate major levels of prehospital providers by training background and scope of practice, including first responders, EMT-B, EMT-I, EMT-D, and EMT-P

C. Out-of-hospital care

1. Know prehospital provider and ambulance dispatch through the 911 system
2. Know out-of-hospital basic life support procedures
3. Know pediatric out-of-hospital treatment protocols for basic life support and advanced life support personnel
4. Know the differences between 911 and enhanced 911 systems

D. Equipment and transportation

1. Know essential pediatric equipment in the ambulances equipped for basic versus advanced life support
2. Know the indications for ground versus air transport of ill/injured children
3. Know the essential advanced life support pediatric equipment for ambulances

E. Triage/receiving hospitals

1. Know the purpose of regionalization of specialty-care hospitals, including pediatric trauma, burn, and critical care
2. Know the principles of field triage for pediatric illness and injury

F. Medical direction

1. Differentiate between on-line (direct) and off-line (indirect) medical direction
2. Know the role of field policies in the prehospital care of children, including policies specific to intubation, interfacility transport, unexplained infant death, and physician-on-scene
3. Know the purpose of the base hospital
4. Know the physician's role in medical direction for pediatrics
5. Know the epidemiology of pediatric illness and injury requiring prehospital care

G. Disaster/mass gathering

1. Know principles in providing emergency care in disasters, multi-casualty events, and mass gatherings
2. Know the principles of field triage in a disaster

H. Legal considerations

1. Know the special medicolegal problems faced by prehospital personnel caring for the minor patient, including consent, treatment refusal, and do-not-resuscitate orders
2. Know the role of the prehospital care provider in handling suspected domestic violence, physical abuse, sexual abuse, or neglect

10. Epidemiology

A. Growth and development

1. Normal growth and development
 - a. Understand the significance of normal growth and development
 - b. Understand growth chart trends and how to interpret them
 - c. Know important developmental milestones used in screening
 - d. Understand the significance of appropriate dental development by age
 - e. Differentiate psychosocial development by age
2. Abnormalities of growth and development
 - a. Recognize and evaluate failure to thrive
 - b. Recognize and evaluate developmental delay
 - c. Plan the treatment of failure to thrive

B. Epidemiology of illness and injury

1. Illness
 - a. Differentiate the major causes of respiratory distress by age
 - b. Differentiate the major causes of shock by age
 - c. Differentiate the major causes of sepsis by age
 - d. Differentiate the major causes of meningitis by age
 - e. Differentiate the major causes of pneumonia by age
 - f. Differentiate the major causes of cardiac failure by age
 - g. Differentiate the major causes of renal failure by age
 - h. Differentiate the major causes of seizures by age
2. Injury
 - a. Differentiate the major causes of blunt trauma by age
 - b. Differentiate the major causes of head trauma by age
 - c. Differentiate the major causes of poisoning by age
 - d. Know the principles of "poison-proofing" the home
 - e. Know the principles of safety in the automobile, the home, and play areas
 - f. Know the principles of water safety in the home
 - g. Know the basic principles of injury control and prevention
 - h. Know how the Haddon matrix is used to analyze injury events
 - i. Know successful injury prevention interventions
3. Death
 - a. Know common causes of death in childhood
 - b. Plan the approach to dealing with the family of a child who has just died

C. Approach to child and family

1. Differentiate by age the techniques of appropriate clinical evaluation
2. Recognize the characteristics of an incompetent caretaker

D. Other

1. Know the current guidelines for immunization of children and recognize the most common side effects
2. Know the indications, contraindications, and methods for administration of antivenin

3. Know the principles of universal precautions

11. Administrative/Legal/Ethical

A. Quality assurance

1. Know quality assurance activities relevant to pediatric emergency medicine
2. Know JCAHO regulations regarding the performance of quality assurance activities in emergency medicine
3. Know the elements that define quality assurance in the emergency care of children

B. Legal issues in the care of children

1. Know the forms of consent related to emergency care of minors
2. Know the circumstances in which minors can consent to their own examination and treatment
3. Know the process by which parental refusal of treatment can be overruled
4. Know the in loco parentis concept in the setting of a minor in police custody
5. Know the requirements of the EMTALA legislation
6. Know the circumstances in which confidentiality must be upheld in the care of a minor
7. Know the circumstances in which confidentiality can be breached in the care of a minor
8. Know the ramifications of failing to comply with EMTALA
9. Know the requirements of the Health Insurance Portability and Accountability Act (HIPAA) regarding patient confidentiality

C. Medical/legal issues (risk management)

1. Know the concept of duty to treat
2. Know the concepts regarding medical malpractice: negligence, standard of care, harm
3. Know the ramifications of failure to uphold the principle of duty to treat

D. Regulatory requirements

1. Know the appropriate procedures for obtaining consent for the participation of a minor in research
2. Know the regulations concerning the reporting of child abuse, child neglect, and sexual abuse
3. Know conditions that require reporting (communicable diseases, assaults, death)
4. Know the appropriate procedure for obtaining authorization for an autopsy
5. Know the appropriate procedure for obtaining authorization of organ and tissue recovery for transplantation
6. Know the appropriate procedure for initiating a do not resuscitate order
7. Know the appropriate procedure for initiating a psychiatric commitment of a child
8. Know the application of ethical principles pertaining to the practice of emergency medicine
9. Know the procedure for reporting child abuse, child neglect, and sexual abuse
10. Know the conditions under which a child requires a psychiatric commitment
11. Know the terms of advance directive, living will, durable power of attorney for healthcare
12. Know which deaths require a medical examiner be contacted
13. Know when organ and tissue recovery must be requested

12. Procedures

A. General

1. Restraint Techniques

- a. Know the indications and contraindications for restraint techniques
 - b. Plan the key steps and know the potential pitfalls in performing restraint techniques
 - c. Recognize the complications associated with restraint techniques
 2. Aseptic Technique
 - a. Know the indications for aseptic technique
 - b. Know the anatomy and/or physiology relevant to aseptic technique
 - c. Plan the key steps and know potential pitfalls in performing aseptic technique
 3. Protecting Health Professionals Against Hazardous Exposures
 - a. Know the indications for protecting health professionals against hazardous exposures
 - b. Plan the key steps and know the potential pitfalls in protecting health professionals against hazardous exposures
- B. Cardiopulmonary Life-Support Procedures
1. Basic Life Support Procedures
 - a. Know the indications for basic life support procedures
 - b. Plan the key steps and know the potential pitfalls in performing basic life support procedures
 - c. Recognize the complications associated with basic life support procedures
 - d. Know the anatomy and/or pathophysiology relevant to basic life support procedures
 2. Airway Adjuncts, Oxygen Delivery, and Suctioning the Upper Airway
 - a. Know indications and contraindications for airway adjuncts, oxygen delivery, and suctioning the upper airway
 - b. Plan the key steps and know the potential pitfalls in performing airway adjuncts, oxygen delivery, and suctioning the upper airway
 - c. Know the complications associated with airway adjuncts, oxygen delivery, and suctioning the upper airway
 - d. Know the anatomy and/or pathophysiology relevant to airway adjuncts, oxygen delivery, and suctioning the upper airway
 3. Bag-Mask Ventilation
 - a. Know the indications and contraindications for bag-mask ventilation
 - b. Plan the key steps and know potential pitfalls in performing bag-mask ventilation
 - c. Know the complications associated with bag-mask ventilation
 - d. Know the anatomy and/or pathophysiology relevant to bag-mask ventilation
 4. Rapid Sequence Induction for Intubation
 - a. Know the anatomy and/or physiology relevant to rapid sequence induction for intubation
 - b. Know the indications and contraindications for rapid sequence induction for intubation
 - c. Plan the key steps and know the potential pitfalls in performing rapid sequence induction for intubation
 - d. Recognize the complications associated with rapid sequence induction for intubation
 5. Emergent Endotracheal Intubation
 - a. Know the indications and contraindications for emergent endotracheal intubation

- b. Plan the key steps and know the potential pitfalls in performing emergent endotracheal intubation
 - c. Recognize the complications associated with emergent endotracheal intubation
 - d. Know the anatomy and/or pathophysiology relevant to emergent endotracheal intubation
6. Managing the Difficult Airway
- a. Plan the key steps and know the potential pitfalls in managing the difficult airway
 - b. Know the anatomy and/or pathophysiology relevant to managing the difficult airway
 - c. Know the indications and contraindications for managing the difficult airway
 - d. Recognize the complications associated with managing the difficult airway
7. Percutaneous Transtracheal Ventilation
- a. Know the anatomy and/or pathophysiology relevant to percutaneous transtracheal ventilation
 - b. Know the indications and contraindications for percutaneous transtracheal ventilation
 - c. Plan the key steps and know the potential pitfalls in performing percutaneous transtracheal ventilation
 - d. Recognize the complications associated with percutaneous transtracheal ventilation
8. Central Venous Access
- a. Know the indications and contraindications for central venous access
 - b. Plan the key steps and know the potential pitfalls in performing central venous access
 - c. Recognize the complications associated with central venous access
 - d. Know the anatomy and/or pathophysiology relevant to central venous access
9. Venous Cutdown Catheterization
- a. Know the indications and contraindications for venous cutdown catheterization
 - b. Plan the key steps and know the potential pitfalls in performing venous cutdown catheterization
 - c. Recognize the complications associated with venous cutdown catheterization
 - d. Know the anatomy and pathophysiology relevant to venous cutdown catheterization
10. Intraosseous Infusion
- a. Know the indications and contraindications for intraosseous infusion
 - b. Plan the key steps and know the potential pitfalls in performing intraosseous infusion
 - c. Recognize the complications associated with intraosseous infusion
 - d. Know the anatomy and pathophysiology relevant to intraosseous infusion
11. Cardiac Pacing
- a. Know the anatomy and pathophysiology relevant to cardiac pacing
 - b. Know the indications and contraindications for cardiac pacing
 - c. Plan the key steps and know the potential pitfalls in performing cardiac pacing
 - d. Recognize the complications associated with cardiac pacing
12. Cardioversion and Defibrillation
- a. Know the indications and contraindications for cardioversion and defibrillation

- b. Plan the key steps and know the potential pitfalls in performing cardioversion and defibrillation
 - c. Recognize the complications associated with cardioversion and defibrillation
 - d. Know the anatomy and pathophysiology relevant to cardioversion and defibrillation
- C. Trauma Life Support Procedures
1. Cervical Spine Immobilization
 - a. Know the anatomy and pathophysiology relevant to cervical spine immobilization
 - b. Know the indications for cervical spine immobilization
 - c. Recognize the complications associated with cervical spine immobilization
 - d. Plan the key steps and know the potential pitfalls in performing cervical spine immobilization
 2. Surgical Cricothyrotomy
 - a. Know the indications and contraindications for surgical cricothyrotomy
 - b. Plan the key steps and know the potential pitfalls in performing surgical cricothyrotomy
 - c. Recognize the complications associated with surgical cricothyrotomy
 - d. Know the anatomy and pathophysiology relevant to surgical cricothyrotomy
 3. Diagnostic Peritoneal Lavage
 - a. Know the indications and contraindications for diagnostic peritoneal lavage
 - b. Plan the key steps and know the potential pitfalls in performing diagnostic peritoneal lavage
 - c. Recognize the complications associated with diagnostic peritoneal lavage
 - d. Recognize and interpret the findings from diagnostic peritoneal lavage
 - e. Know the anatomy and pathophysiology relevant to diagnostic peritoneal lavage
 4. Control of Exsanguinating External Hemorrhage
 - a. Know the anatomy and pathophysiology relevant to controlling exsanguinating external hemorrhage
 - b. Know the indications and contraindications for controlling exsanguinating external hemorrhage
 - c. Plan the key steps and know the potential pitfalls in controlling exsanguinating external hemorrhage
 - d. Recognize the complications associated with controlling exsanguinating external hemorrhage
 5. Tube Thoracostomy and Needle Decompression of the Chest
 - a. Know the indications and contraindications for tube thoracostomy and needle decompression of the chest
 - b. Plan the key steps and know the potential pitfalls in performing tube thoracostomy and needle decompression of the chest
 - c. Recognize the complications associated with tube thoracostomy and needle decompression of the chest
 - d. Know the anatomy and pathophysiology relevant to tube thoracostomy and needle decompression of the chest
 6. Autotransfusion
 - a. Know the anatomy and pathophysiology relevant to autotransfusion
 - b. Know the indications and contraindications for autotransfusion

- c. Plan the key steps and know the potential pitfalls in performing autotransfusion
 - d. Recognize the complications associated with autotransfusion
- 7. Emergency Thoracotomy
 - a. Know the indications and contraindications for emergency thoracotomy
 - b. Plan the key steps and know the potential pitfalls in performing emergency thoracotomy
 - c. Recognize the complications associated with emergency thoracotomy
 - d. Know the anatomy and pathophysiology relevant to emergency thoracotomy
- 8. Retrograde Urethrography
 - a. Know the anatomy and pathophysiology relevant to retrograde urethrography
 - b. Know the indications and contraindications for retrograde urethrography
 - c. Plan the key steps and know the potential pitfalls in performing retrograde urethrography
 - d. Recognize the complications associated with retrograde urethrography
- D. Anesthesia and Sedation Procedures
 - 1. Procedural Sedation and Pain Management Techniques
 - a. Know the anatomy and pathophysiology relevant to procedural sedation and pain management techniques
 - b. Know the indications and contraindications for procedural sedation and pain management techniques
 - c. Plan the key steps and know the potential pitfalls in performing procedural sedation and pain management techniques
 - d. Recognize the complications associated with procedural sedation and pain management techniques
 - 2. Nitrous Oxide Administration
 - a. Know the anatomy and pathophysiology relevant to nitrous oxide administration
 - b. Plan the key steps and know the potential pitfalls in nitrous oxide administration
 - c. Recognize the complications associated with nitrous oxide administration
 - 3. Local and Regional Anesthesia
 - a. Know the indications and contraindications for local and regional anesthesia
 - b. Recognize the complications associated with local and regional anesthesia
 - c. Plan the key steps and know the potential pitfalls in performing local and regional anesthesia
 - d. Know the anatomy and pathophysiology relevant to local and regional anesthesia
- E. Special Procedures for Neonates
 - 1. Neonatal Resuscitation Procedures
 - a. Know the anatomy and pathophysiology relevant to neonatal resuscitation procedures
 - b. Know the indications and contraindications for neonatal resuscitation procedures
 - c. Plan the key steps and know the potential pitfalls in performing neonatal resuscitation procedures
 - d. Recognize the complications associated with neonatal resuscitation procedures
 - 2. Prevention and Management of Meconium Aspiration
 - a. Know the anatomy and pathophysiology relevant to the prevention and management of meconium aspiration

- b. Know the indications and contraindications for prevention and management of meconium aspiration
 - c. Plan the key steps and know the potential pitfalls in the prevention and management of meconium aspiration
 - d. Recognize the complications associated with the prevention and management of meconium aspiration
 - 3. Umbilical Vessel Catheterization
 - a. Know the indications and contraindications for umbilical vessel catheterization
 - b. Plan the key steps and know the potential pitfalls in performing umbilical vessel catheterization
 - c. Recognize the complications associated with umbilical vessel catheterization
 - d. Know the anatomy and pathophysiology relevant to umbilical vessel catheterization
 - 4. Emergency Management of Congenital Anomalies
 - a. Know the anatomy and pathophysiology relevant to emergency management of congenital anomalies
 - b. Know the indications and contraindications for emergency management of congenital anomalies
 - c. Plan the key steps and know the potential pitfalls in the emergency management of congenital anomalies
 - d. Recognize the complications associated with the emergency management of congenital anomalies
- F. Neurologic and Neurosurgical Procedures
 - 1. Lumbar Puncture
 - a. Know the indications and contraindications for lumbar puncture
 - b. Plan the key steps and know the potential pitfalls in performing lumbar puncture
 - c. Recognize the complications associated with lumbar puncture
 - d. Know the anatomy and pathophysiology relevant to lumbar puncture
 - 2. Ventricular Shunt and Burr Hole Puncture
 - a. Know the indications and contraindications for ventricular shunt and burr hole puncture
 - b. Plan the key steps and know the potential pitfalls in performing ventricular shunt and burr hole puncture
 - c. Recognize the complications associated with ventricular shunt and burr hole puncture
 - d. Know the anatomy and pathophysiology relevant to ventricular shunt and burr hole puncture
 - 3. Ventricular Puncture
 - a. Know the anatomy and pathophysiology relevant to ventricular puncture
 - b. Know the indications and contraindications for ventricular puncture
 - c. Plan the key steps and know the potential pitfalls in performing ventricular puncture
 - d. Recognize the complications associated with ventricular puncture
- G. Ophthalmologic Procedures
 - 1. General (Lid Eversion, Fluorescein Installation, Etc.)

- a. Know the indications and contraindications for general pediatric ophthalmic procedures
 - b. Plan the key steps and know the potential pitfalls in performing general pediatric ophthalmic procedures
 - c. Recognize the complications associated with general pediatric ophthalmic procedures
 - d. Know the anatomy and pathophysiology relevant to general pediatric ophthalmic procedures
2. Slit Lamp Examination
 - a. Know the indications and contraindications for slit lamp examination
 - b. Plan the key steps and know the potential pitfalls in performing slit lamp examination
 - c. Know the anatomy and pathophysiology relevant to slit lamp examination
 3. Ocular Foreign Body Removal
 - a. Know the indications and contraindications for ocular foreign body removal
 - b. Plan the key steps and know the potential pitfalls in performing ocular foreign body removal
 - c. Recognize the complications associated with ocular foreign body removal
 - d. Know the anatomy and pathophysiology relevant to ocular foreign body removal
 4. Ocular Irrigation and Decontamination
 - a. Know the indications and contraindications for ocular irrigation and decontamination
 - b. Plan the key steps and know the potential pitfalls in performing ocular irrigation and decontamination
 - c. Recognize the complications associated with ocular irrigation and decontamination
 - d. Know the anatomy and pathophysiology relevant to ocular irrigation and decontamination
 5. Eye Patching and Eye Guard Application
 - a. Know the anatomy and pathophysiology relevant to eye patching and eye guard application
 - b. Know the indications and contraindications for eye patching and eye guard application
 - c. Plan the key steps and know the potential pitfalls in performing eye patching and eye guard application
 - d. Recognize the complications associated with eye patching and eye guard application
 6. Contact Lens Removal
 - a. Know the indications and contraindications for contact lens removal
 - b. Plan the key steps and know the potential pitfalls in performing contact lens removal
 - c. Recognize the complications associated with contact lens removal
 - d. Know the anatomy and pathophysiology relevant to contact lens removal
- H. Otolaryngologic Procedures
1. Acute Upper Airway Foreign Body Removal
 - a. Know the anatomy and pathophysiology relevant to acute upper airway foreign body removal

- b. Know the indications and contraindications for acute upper airway foreign body removal
 - c. Plan the key steps and know the potential pitfalls in performing acute upper airway foreign body removal
 - d. Recognize the complications associated with acute upper airway foreign body removal
2. Otoscopic Examination
- a. Know the anatomy and pathophysiology relevant to otoscopic examination
 - b. Know the indications for otoscopic examination
 - c. Plan the key steps and know the potential pitfalls in performing otoscopic examination
 - d. Recognize the complications associated with otoscopic examination
3. Removal of Impacted Cerumen
- a. Know the indications and contraindications for removal of impacted cerumen
 - b. Plan the key steps and know the potential pitfalls in performing removal of impacted cerumen
 - c. Recognize the complications associated with removal of impacted cerumen
 - d. Know the anatomy and pathophysiology relevant to removal of impacted cerumen
4. Foreign Body Removal from the External Auditory Canal
- a. Know the indications and contraindications for foreign body removal from the external auditory canal
 - b. Plan the key steps and know the potential pitfalls in performing foreign body removal from the external auditory canal
 - c. Recognize the complications associated with foreign body removal from the external auditory canal
 - d. Know the anatomy and pathophysiology relevant to foreign body removal from the external auditory canal
5. External Ear Procedures
- a. Know the indications and contraindications for external ear procedures
 - b. Plan the key steps and know the potential pitfalls in performing external ear procedures
 - c. Recognize the complications associated with external ear procedures
 - d. Know the anatomy and pathophysiology relevant to external ear procedures
6. Tympanocentesis
- a. Know the indications and contraindications for tympanocentesis
 - b. Plan the key steps and know the potential pitfalls in performing tympanocentesis
 - c. Recognize the complications associated with tympanocentesis
 - d. Know the anatomy and pathophysiology relevant to tympanocentesis
7. Management of Epistaxis
- a. Know the indications and contraindications for the management of epistaxis
 - b. Plan the key steps and know the potential pitfalls in managing epistaxis
 - c. Recognize the complications associated with the management of epistaxis
 - d. Know the anatomy and pathophysiology relevant to management of epistaxis
8. Drainage and Packing of a Nasal Septal Hematoma
- a. Know the indications and contraindications for drainage and packing of a nasal septal hematoma

- b. Plan the key steps and know the potential pitfalls of draining and packing a nasal septal hematoma
 - c. Recognize the complications associated with drainage and packing of a nasal septal hematoma
 - d. Know the anatomy and pathophysiology relevant to drainage and packing of a nasal septal hematoma
9. Nasal Foreign Body Removal
- a. Know the indications and contraindications for nasal foreign body removal
 - b. Know the anatomy and pathophysiology relevant to nasal foreign body removal
 - c. Recognize the complications associated with nasal foreign body removal
 - d. Plan the key steps and know the potential pitfalls in performing nasal foreign body removal
10. Pharyngeal Procedures (Removal of Tonsillar Foreign Body, Etc.)
- a. Know the indications and contraindications for pharyngeal procedures
 - b. Plan the key steps and know the potential pitfalls in performing pharyngeal procedures
 - c. Recognize the complications associated with pharyngeal procedures
 - d. Know the anatomy and pathophysiology relevant to pharyngeal procedures
11. Direct and Indirect Diagnostic Laryngoscopic Procedures
- a. Know the indications and contraindications for direct and indirect diagnostic laryngoscopic procedures
 - b. Know the anatomy and pathophysiology relevant to direct and indirect diagnostic laryngoscopic procedures
 - c. Plan the key steps and know the potential pitfalls in performing direct and indirect diagnostic laryngoscopic procedures
 - d. Recognize the complications associated with direct and indirect diagnostic laryngoscopic procedures
- I. Dental Procedures
1. Orofacial Anesthesia Techniques
- a. Know the anatomy and pathophysiology relevant to orofacial anesthesia techniques
 - b. Know the indications and contraindications for orofacial anesthesia techniques
 - c. Plan the key steps and know the potential pitfalls of orofacial anesthesia techniques
 - d. Recognize the complications associated with orofacial anesthesia techniques
2. Incision and Drainage of a Dental Abscess
- a. Know the anatomy and pathophysiology relevant to incision and drainage of a dental abscess
 - b. Know the indications and contraindications for incision and drainage of a dental abscess
 - c. Plan the key steps and know the potential pitfalls in performing incision and drainage of a dental abscess
 - d. Recognize the complications associated with incision and drainage of a dental abscess
3. Management of Dental Fractures
- a. Know the anatomy and pathophysiology relevant to management of dental fractures
 - b. Know the indications and contraindications for management of dental fractures

- c. Plan the key steps and know the potential pitfalls in managing dental fractures
 - d. Recognize the complications associated with the management of dental fractures
 - 4. Reimplanting an Avulsed Permanent Tooth
 - a. Know the indications and contraindications for reimplanting an avulsed permanent tooth
 - b. Plan the key steps and know the potential pitfalls in reimplanting an avulsed permanent tooth
 - c. Recognize the complications associated with reimplanting an avulsed permanent tooth
 - d. Know the anatomy and pathophysiology relevant to reimplanting an avulsed permanent tooth
 - 5. Application of a Dental Splint
 - a. Know the indications and contraindications for application of a dental splint
 - b. Plan the key steps and know the potential pitfalls in application of a dental splint
 - c. Recognize the complications associated with application of a dental splint
 - d. Know the anatomy and pathophysiology relevant to application of a dental splint
 - 6. Management of Soft Tissue Injuries of the Mouth
 - a. Know the anatomy and pathophysiology relevant to management of soft tissue injuries of the mouth
 - b. Know the indications and contraindications for management of soft tissue injuries of the mouth
 - c. Plan the key steps and know the potential pitfalls in performing management of soft tissue injuries of the mouth
 - d. Recognize the complications associated with management of soft tissue injuries of the mouth
 - 7. Reduction of Temporomandibular Joint Dislocation
 - a. Know the anatomy and pathophysiology relevant to reduction of temporomandibular joint dislocation
 - b. Know the indications and contraindications for reduction of temporomandibular joint dislocation
 - c. Plan the key steps and know the potential pitfalls in reducing temporomandibular joint dislocation
 - d. Recognize the complications associated with reduction of temporomandibular joint dislocation
- J. Cardiovascular Procedures
 - 1. Pediatric ECG Interpretation
 - a. Know the indications for performing a pediatric ECG
 - b. Know the anatomy and pathophysiology relevant to pediatric ECG interpretation
 - c. Plan the key steps and know the potential pitfalls in interpreting pediatric ECGs
 - d. Recognize and plan the management of ECG abnormalities in children
 - 2. Converting Stable Supraventricular Tachycardia Using Vagal Maneuvers
 - a. Know the anatomy and pathophysiology relevant to converting stable supraventricular tachycardia using vagal maneuvers
 - b. Know the indications and contraindications for converting stable supraventricular tachycardia using vagal maneuvers

- c. Plan the key steps and know the potential pitfalls in converting stable supraventricular tachycardia using vagal maneuvers
 - d. Recognize the complications associated with converting stable supraventricular tachycardia using vagal maneuvers
 - 3. Pericardiocentesis
 - a. Know the indications and contraindications for pericardiocentesis
 - b. Plan the key steps and know the potential pitfalls of pericardiocentesis
 - c. Recognize the complications associated with pericardiocentesis
 - d. Know the anatomy and pathophysiology relevant to pericardiocentesis
 - 4. Arterial Puncture and Catheterization
 - a. Know the indications and contraindications for arterial puncture and catheterization
 - b. Know the anatomy and pathophysiology relevant to arterial puncture and catheterization
 - c. Recognize the complications associated with arterial puncture and catheterization
 - d. Plan the key steps and know the potential pitfalls in performing arterial puncture and catheterization
 - 5. Venipuncture and Peripheral Venous Access
 - a. Know the indications and contraindications for venipuncture and peripheral venous access
 - b. Know the anatomy and pathophysiology relevant to venipuncture and peripheral venous access
 - c. Recognize the complications associated with venipuncture and peripheral venous access
 - d. Plan the key steps and know the potential pitfalls in performing venipuncture and peripheral venous access
 - 6. Accessing Indwelling Central Catheters
 - a. Know the anatomy and pathophysiology relevant to accessing indwelling central catheters
 - b. Know the indications and contraindications for accessing indwelling central catheters
 - c. Plan the key steps and know the potential pitfalls in accessing indwelling central catheters
 - d. Recognize the complications associated with accessing indwelling central catheters
- K. Pulmonary Procedures
 - 1. Pulse Oximetry
 - a. Know the indications for pulse oximetry
 - b. Know the anatomy and pathophysiology relevant to pulse oximetry
 - c. Plan the key steps and know the potential pitfalls in performing pulse oximetry
 - 2. End Tidal CO₂ Monitoring
 - a. Know the indications for end tidal CO₂ monitoring
 - b. Know the anatomy and pathophysiology relevant to end tidal CO₂ monitoring
 - c. Plan the key steps and know the potential pitfalls in performing end tidal CO₂ monitoring
 - 3. Peak Flow Rate Measurement
 - a. Know the indications for peak flow rate measurement
 - b. Know the anatomy and pathophysiology relevant to peak flow rate measurement

- c. Plan the key steps and know the potential pitfalls in performing peak flow rate measurement
 - 4. Use of Metered Dose Inhalers, Spacers, and Nebulizers
 - a. Know the anatomy and pathophysiology relevant to the use of metered dose inhalers, spacers, and nebulizers
 - b. Know the indications and contraindications for the use of metered dose inhalers, spacers, and nebulizers
 - c. Plan the key steps and know the potential pitfalls in the use of metered dose inhalers, spacers, and nebulizers
 - d. Recognize the complications associated with the use of metered dose inhalers, spacers, and nebulizers
 - 5. Suctioning the Trachea
 - a. Know the anatomy and pathophysiology relevant to suctioning the trachea
 - b. Know the indications and contraindications for suctioning the trachea
 - c. Plan the key steps and know the potential pitfalls in suctioning the trachea
 - d. Recognize the complications associated with suctioning the trachea
 - 6. Replacement of a Tracheostomy Cannula
 - a. Know the indications and contraindications for replacement of a tracheostomy cannula
 - b. Know the anatomy and pathophysiology relevant to replacement of a tracheostomy cannula
 - c. Recognize the complications associated with replacing a tracheostomy cannula
 - d. Plan the key steps and know the potential pitfalls in replacing a tracheostomy cannula
 - 7. Thoracentesis
 - a. Know the indications and contraindications for thoracentesis
 - b. Know the anatomy and pathophysiology relevant to thoracentesis
 - c. Recognize the complications associated with thoracentesis
 - d. Plan the key steps and know the potential pitfalls in performing thoracentesis
 - 8. Mechanical Ventilation
 - a. Know the anatomy and pathophysiology relevant to mechanical ventilation
 - b. Know the indications and contraindications for mechanical ventilation
 - c. Plan the key steps and know the potential pitfalls in performing mechanical ventilation
 - d. Recognize the complications associated with mechanical ventilation
- L. Gastrointestinal Procedures
 - 1. Oral Rehydration
 - a. Know the anatomy and pathophysiology relevant to oral rehydration
 - b. Know the indications and contraindications for oral rehydration
 - c. Plan the key steps and know the potential pitfalls in performing oral rehydration
 - d. Recognize the complications associated with oral rehydration
 - 2. Gastric Intubation
 - a. Know the indications and contraindications for gastric intubation
 - b. Know the anatomy and pathophysiology relevant to gastric intubation
 - c. Recognize the complications associated with gastric intubation
 - d. Plan the key steps and know the potential pitfalls of gastric intubation

3. Gastrostomy Tube Replacement
 - a. Know the indications and contraindications for gastrostomy tube replacement
 - b. Know the anatomy and pathophysiology relevant to gastrostomy tube replacement
 - c. Recognize the complications associated with gastrostomy tube replacement
 - d. Plan the key steps and know the potential pitfalls in performing gastrostomy tube replacement
 4. Paracentesis
 - a. Know the indications and contraindications for paracentesis
 - b. Know the anatomy and pathophysiology relevant to paracentesis
 - c. Recognize the complications associated with paracentesis
 - d. Plan the key steps and know the potential pitfalls of paracentesis
 5. Hernia Reduction
 - a. Know the indications and contraindications for hernia reduction
 - b. Know the anatomy and pathophysiology relevant to hernia reduction
 - c. Recognize the complications associated with hernia reduction
 - d. Plan the key steps and know the potential pitfalls in performing hernia reduction
 6. Treatment of Umbilical Granuloma
 - a. Know the anatomy and pathophysiology relevant to treatment of umbilical granuloma
 - b. Know the indications and contraindications for treatment of umbilical granuloma
 - c. Plan the key steps and know the potential pitfalls of treating umbilical granuloma
 - d. Recognize the complications associated with treatment of umbilical granuloma
 7. Reducing a Rectal Prolapse
 - a. Know the anatomy and pathophysiology relevant to reducing a rectal prolapse
 - b. Plan the key steps and know potential pitfalls in reducing a rectal prolapse
 - c. Recognize the complications associated with reducing a rectal prolapse
 8. Rectal Foreign Body Removal
 - a. Know the indications and contraindications for rectal foreign body removal
 - b. Know the anatomy and pathophysiology relevant to rectal foreign body removal
 - c. Recognize the complications associated with removing a rectal foreign body
 - d. Plan the key steps and know the potential pitfalls of removing a rectal foreign body
 9. Anoscopy
 - a. Know the indications and contraindications for anoscopy
 - b. Know the anatomy and pathophysiology relevant to anoscopy
 - c. Recognize the complications associated with anoscopy
 - d. Plan the key steps and know the potential pitfalls in anoscopy
- M. Genitourinary Procedures
1. Prepubertal Genital Examination
 - a. Know the anatomy and pathophysiology relevant to prepubertal genital examination
 - b. Know the indications and contraindications for prepubertal genital examination
 - c. Plan the key steps and know the potential pitfalls of prepubertal genital examination
 - d. Recognize the complications associated with prepubertal genital examination
 2. Vaginal Foreign Body Removal
 - a. Know the indications and contraindications for vaginal foreign body removal

- b. Know the anatomy and pathophysiology relevant to vaginal foreign body removal
 - c. Recognize the complications associated with removing a vaginal foreign body
 - d. Plan the key steps and know the potential pitfalls in removing a vaginal foreign body
3. Adolescent Pelvic Examination
 - a. Know the anatomy and pathophysiology relevant to adolescent pelvic examination
 - b. Know the indications and contraindications for adolescent pelvic examination
 - c. Plan the key steps and know the potential pitfalls in performing adolescent pelvic examination
 - d. Recognize the complications associated with adolescent pelvic examination
4. Forensic Examination of a Sexual Assault Victim
 - a. Know the anatomy and pathophysiology relevant to forensic examination of a sexual assault victim
 - b. Know the indications and contraindications for forensic examination of a sexual assault victim
 - c. Plan the key steps and know the potential pitfalls in forensic examination of a sexual assault victim
 - d. Recognize the complications associated with forensic examination of a sexual assault victim
5. Bladder Catheterization
 - a. Know the indications and contraindications for bladder catheterization
 - b. Know the anatomy and pathophysiology relevant to bladder catheterization
 - c. Recognize the complications associated with bladder catheterization
 - d. Plan the key steps and know the potential pitfalls in bladder catheterization
6. Suprapubic Bladder Aspiration
 - a. Know the indications and contraindications for suprapubic bladder aspiration
 - b. Know the anatomy and pathophysiology relevant to suprapubic bladder aspiration
 - c. Recognize complications associated with suprapubic bladder aspiration
 - d. Plan the key steps and know the potential pitfalls in performing suprapubic bladder aspiration
7. Manual Detorsion of the Testes
 - a. Know the anatomy and pathophysiology relevant to manual detorsion of the testes
 - b. Know the indications and contraindications for manual detorsion of the testes
 - c. Plan the key steps and know the potential pitfalls of manual detorsion of the testes
 - d. Recognize the complications associated with manual detorsion of the testes
8. Paraphimosis Reduction
 - a. Know the indications and contraindications for paraphimosis reduction
 - b. Know the anatomy and pathophysiology relevant to paraphimosis reduction
 - c. Recognize the complications associated with paraphimosis reduction
 - d. Plan the key steps and know the potential pitfalls of paraphimosis reduction
9. Management of Zipper Injuries
 - a. Know the indications and contraindications for management of zipper injuries
 - b. Plan the key steps and know the potential pitfalls in managing zipper injuries
 - c. Recognize the complications associated with management of zipper injuries
10. Obstetrical Procedures for Adolescents

- a. Know the anatomy and pathophysiology relevant to obstetrical procedures for adolescents
 - b. Recognize the complications associated with obstetrical procedures for adolescents
 - c. Plan the key steps and know the potential pitfalls in performing obstetrical procedures for adolescents
 - d. Know the indications and contraindications for obstetrical procedures for adolescents
11. Management of Priapism
- a. Know the anatomy and pathophysiology relevant to management of priapism
 - b. Know the indications and contraindications for management of priapism
 - c. Plan the key steps and know the potential pitfalls in managing priapism
 - d. Recognize the complications associated with management of priapism
- N. Orthopedic Procedures
1. Splinting Procedures
- a. Know the indications and contraindications for splinting procedures
 - b. Know the anatomy and pathophysiology relevant to splinting procedures
 - c. Recognize the complications associated with splinting procedures
 - d. Plan the key steps and know the potential pitfalls of splinting procedures
2. Short Arm and Short Leg Casts
- a. Know the anatomy and pathophysiology relevant to applying short arm and short leg casts
 - b. Know the indications and contraindications for applying short arm and short leg casts
 - c. Plan the key steps and know the potential pitfalls in applying short arm and short leg casts
 - d. Recognize the complications associated with applying short arm and short leg casts
3. Management of Hand and Finger Injuries
- a. Know the indications and contraindications for management of hand and finger injuries
 - b. Plan the key steps and know the potential pitfalls of managing hand and finger injuries
 - c. Know the anatomy and pathophysiology relevant to management of hand and finger injuries
 - d. Recognize the complications associated with managing hand and finger injuries
4. Arthrocentesis and Assessment of Joint Integrity
- a. Know the indications and contraindications for arthrocentesis and assessment of joint integrity
 - b. Know the anatomy and pathophysiology relevant to arthrocentesis and assessment of joint integrity
 - c. Recognize the complications associated with arthrocentesis and assessment of joint integrity
 - d. Plan the key steps and know the potential pitfalls in performing arthrocentesis and assessment of joint integrity
5. Reduction of Common Joint Dislocations and Subluxations
- a. Know the indications and contraindications for reduction of common joint dislocations and subluxations

- b. Know the anatomy and pathophysiology relevant to the reduction of common joint dislocations and subluxations
 - c. Recognize the complications associated with reduction of common joint dislocations and subluxations
 - d. Plan the key steps and know the potential pitfalls of reducing common joint dislocations and subluxations
6. Management of Fractures with Neurovascular Compromise
- a. Know the indications for management of fractures with neuro-vascular compromise
 - b. Know the anatomy and pathophysiology relevant to management of fractures with neurovascular compromise
 - c. Recognize the complications associated with managing fractures with neurovascular compromise
 - d. Plan the key steps and know the potential pitfalls in managing fractures with neurovascular compromise
- O. Minor Emergency Procedures
1. General Wound Management
- a. Know the anatomy and pathophysiology relevant to general wound management
 - b. Know the indications and contraindications for general wound management
 - c. Plan the key steps and know the potential pitfalls of general wound management
 - d. Recognize the complications associated with general wound management
2. Laceration Repair
- a. Know the anatomy and pathophysiology relevant to laceration repair
 - b. Know the indications and contraindications for laceration repair
 - c. Plan the key steps and know the potential pitfalls of laceration repair
 - d. Recognize the complications associated with laceration repair
3. Management of Plantar Puncture Wounds
- a. Know the anatomy and pathophysiology relevant to management of plantar puncture wounds
 - b. Know the indications and contraindications for management of plantar puncture wounds
 - c. Plan the key steps and know the potential pitfalls of managing plantar puncture wounds
 - d. Recognize the complications associated with managing plantar puncture wounds
4. Management of Subcutaneous Foreign Bodies
- a. Know the indications and contraindications for management of subcutaneous foreign bodies
 - b. Know the anatomy and pathophysiology relevant to management of subcutaneous foreign bodies
 - c. Recognize the complications associated with managing subcutaneous foreign bodies
 - d. Plan the key steps and know the potential pitfalls in managing subcutaneous foreign bodies
5. Hair Tourniquet Removal
- a. Plan the key steps and know the potential pitfalls in performing hair tourniquet removal

- b. Recognize the complications associated with hair tourniquet removal
- 6. Burn Management
 - a. Plan the key steps and know the potential pitfalls of burn management
 - b. Know the anatomy and pathophysiology relevant to burn management
 - c. Know the indications and contraindications for burn management
 - d. Recognize the complications associated with burn management
- 7. Incision and Drainage of a Cutaneous Abscess
 - a. Know the anatomy and pathophysiology relevant to incision and drainage of cutaneous abscess
 - b. Recognize the complications associated with incision and drainage of cutaneous abscess
 - c. Know the indications and contraindications for incision and drainage of cutaneous abscess
 - d. Plan the key steps and know the potential pitfalls of incision and drainage of cutaneous abscess
- 8. Incision and Drainage of a Paronychia
 - a. Know the indications and contraindications for incision and drainage of a paronychia
 - b. Know the anatomy and pathophysiology relevant to incision and drainage of a paronychia
 - c. Recognize the complications associated with incision and drainage of a paronychia
 - d. Plan the key steps and know the potential pitfalls of incision and drainage of a paronychia
- 9. Incision and Drainage of a Felon
 - a. Know the anatomy and pathophysiology relevant to incision and drainage of a felon
 - b. Know the indications and contraindications for incision and drainage of a felon
 - c. Plan the key steps and know the potential pitfalls of incision and drainage of a felon
 - d. Recognize the complications associated with incision and drainage of a felon
- 10. Ingrown Toenail Repair
 - a. Know the indications and contraindications for ingrown toenail repair
 - b. Know the anatomy and pathophysiology relevant to ingrown toenail repair
 - c. Recognize the complications associated with ingrown toenail repair
 - d. Plan the key steps and know the potential pitfalls of ingrown toenail repair
- 11. Fishhook Removal
 - a. Know the anatomy and pathophysiology relevant to fishhook removal
 - b. Know the indications and contraindications for fishhook removal
 - c. Plan the key steps and know the potential pitfalls of removing a fishhook
 - d. Recognize the complications associated with removing a fishhook
- 12. Ring Removal
 - a. Know the anatomy and pathophysiology relevant to ring removal
 - b. Know the indications and contraindications for ring removal
 - c. Plan the key steps and know the potential pitfalls of removing a ring
 - d. Recognize the complications associated with removing a ring
- 13. Intramuscular Injections, Subcutaneous Injections, and Autoinjectors

- a. Know the indications and contraindications for intramuscular injections, subcutaneous injections, and autoinjectors
 - b. Know the anatomy and pathophysiology relevant to intramuscular injections, subcutaneous injections, and autoinjectors
 - c. Recognize the complications associated with intramuscular injections, subcutaneous injections, and autoinjectors
 - d. Plan the key steps and know the potential pitfalls of intramuscular injections, subcutaneous injections, and autoinjectors
- P. Laboratory Skills
- 1. Obtaining Biologic Specimens
 - a. Know the anatomy and pathophysiology relevant to obtaining biologic specimens
 - b. Know the indications and contraindications for obtaining biologic specimens
 - c. Plan the key steps and know the potential pitfalls in obtaining biologic specimens
 - 2. Clinical Laboratory Procedures
 - a. Know the anatomy and pathophysiology relevant to clinical laboratory procedures
 - b. Know the indications for clinical laboratory procedures
- Q. Toxicologic and Environmental Procedures
- 1. Gastric Emptying
 - a. Plan the key steps and know the potential pitfalls in performing gastric emptying
 - b. Know the indications and contraindications for gastric emptying
 - c. Recognize the complications associated with gastric emptying
 - 2. Activated Charcoal Administration
 - a. Know the anatomy and pathophysiology relevant to activated charcoal administration
 - b. Know the indications and contraindications for activated charcoal administration
 - c. Plan the key steps and know the potential pitfalls in administering activated charcoal
 - d. Recognize the complications associated with administering activated charcoal
 - 3. Whole-Bowel Irrigation
 - a. Know the anatomy and pathophysiology relevant to whole-bowel irrigation
 - b. Know the indications and contraindications for whole-bowel irrigation
 - c. Plan the key steps and know the potential pitfalls in performing whole-bowel irrigation
 - d. Recognize the complications associated with whole-bowel irrigation
 - 4. Skin Decontamination
 - a. Know the indications and contraindications for skin decontamination
 - b. Plan the key steps and know the potential pitfalls in skin decontamination
 - 5. Envenomation Management and Tick Removal
 - a. Know the anatomy and pathophysiology relevant to envenomation management and tick removal
 - b. Know the indications and contraindications for envenomation management and tick removal
 - c. Plan the key steps and know the potential pitfalls in envenomation management and tick removal
 - d. Recognize the complications associated with envenomation management and tick removal

6. Cooling Procedures
 - a. Know the anatomy and pathophysiology relevant to cooling procedures
 - b. Know the indications and contraindications for cooling procedures
 - c. Plan the key steps and know the potential pitfalls in performing cooling procedures
 - d. Recognize the complications associated with cooling procedures
7. Warming Procedures
 - a. Know the anatomy and pathophysiology relevant to warming procedures
 - b. Know the indications and contraindications for warming procedures
 - c. Plan the key steps and know the potential pitfalls in performing warming procedures
 - d. Recognize the complications associated with warming procedures
- R. Ultrasonographic Techniques
 1. Focused Assessment with Sonography for Trauma (FAST)
 - a. Know the indications and contraindications for focused access with sonography for trauma (FAST)
 - b. Know the anatomy and pathophysiology relevant to focused access with sonography for trauma (FAST)
 - c. Plan the key steps and know the potential pitfalls in performing focused access with sonography for trauma (FAST)
 - d. Recognize the complications associated with focused access with sonography for trauma (FAST)
 2. Emergency Cardiac Ultrasonography
 - a. Know the anatomy and pathophysiology relevant to emergency cardiac ultrasonography
 - b. Know the indications and contraindications for emergency cardiac ultrasonography
 - c. Plan the key steps and know the potential pitfalls in performing emergency cardiac ultrasonography
 - d. Recognize the complications associated with emergency cardiac ultrasonography
 3. Ultrasound Evaluation of Potential Ectopic Pregnancy
 - a. Know the anatomy and pathophysiology relevant to ultrasound evaluation of potential ectopic pregnancy
 - b. Know the indications and contraindications for ultrasound evaluation of potential ectopic pregnancy
 - c. Plan the key steps and know the potential pitfalls in performing ultrasound evaluation of potential ectopic pregnancy
 - d. Recognize the complications associated with ultrasound evaluation of potential ectopic pregnancy
 4. Ultrasonographic Foreign Body Localization and Removal
 - a. Know the anatomy and pathophysiology relevant to ultrasonographic foreign body localization and removal
 - b. Know the indications and contraindications for ultrasonographic foreign body localization and removal
 - c. Plan the key steps and know the potential pitfalls in performing ultrasonographic foreign body localization and removal
 - d. Recognize the complications associated with ultrasonographic foreign body localization and removal

13. Core Knowledge in Scholarly Activities

A. Principles of Use of Biostatistics in Research

1. Types of variables
 - a. Distinguish types of variables (eg, continuous, categorical, ordinal, nominal)
 - b. Understand how the type of variable (eg, continuous, categorical, nominal) affects the choice of statistical test
2. Distribution of data
 - a. Understand how distribution of data affects the choice of statistical test
 - b. Differentiate normal from skewed distribution of data
 - c. Understand the appropriate use of the mean, median, and mode
 - d. Understand the appropriate use of standard deviation
 - e. Understand the appropriate use of standard error of the mean
3. Hypothesis testing
 - a. Distinguish the null hypothesis from an alternative hypothesis
 - b. Interpret the results of hypothesis testing
4. Statistical tests
 - a. Understand when to use and how to interpret the chi square test
 - b. Understand when to use and how to interpret tests comparing continuous variables between two groups (eg, t test, Mann Whitney U)
 - c. Understand when to use and how to interpret tests comparing continuous variables between three or more groups (eg, ANOVA, Kruskal-Wallis)
 - d. Understand when to use paired tests
 - e. Understand the appropriate use of parametric versus nonparametric tests
 - f. Interpret a p value
 - g. Interpret a p value when multiple comparisons have been made
 - h. Interpret a confidence interval
 - i. Identify a type I error
 - j. Identify a type II error
5. Measurement of association and effect
 - a. Understand how to interpret relative risk and absolute risk
 - b. Understand how to interpret odds ratio
 - c. Understand how to interpret number needed to treat or harm
 - d. Understand how to interpret hazard ratio
 - e. Understand when to use and how to interpret correlation coefficient
6. Regression
 - a. Understand when to use and how to interpret regression analysis (eg, linear, logistic)
 - b. Understand when to use and how to interpret survival analysis (eg, Kaplan Meier)
7. Diagnostic tests
 - a. Recognize the importance of an independent "gold standard" in evaluating a diagnostic test
 - b. Interpret sensitivity and specificity
 - c. Interpret positive and negative predictive values
 - d. Understand how disease prevalence affects the positive and negative predictive value of a test
 - e. Interpret a receiver operating characteristic curve

8. Systematic reviews and meta-analysis
 - a. Understand the purpose of a systematic review
 - b. Understand the advantages of adding a meta-analysis to a systematic review
 - c. Interpret the results of a meta-analysis
- B. Principles of Epidemiology and Clinical Research Design
 1. Assessment of study design, performance and analysis (internal validity)
 - a. Recognize and understand the strengths and limitations of a cohort study, case control study, and randomized controlled clinical trial
 - b. Recognize the use and limitations of surrogate endpoints
 - c. Understand the use of intent-to-treat analysis
 - d. Understand how sample size affects the power of a study
 2. Assessment of generalizability (external validity)
 - a. Understand how nonrepresentative samples can bias results
 - b. Assess how the data source (eg, diaries, billing data, discharge diagnostic code) may affect study results
 3. Bias and confounding
 - a. Identify common strategies in study design to avoid or reduce bias
 - b. Identify common strategies in study design to avoid or reduce confounding
 4. Causation
 - a. Understand the difference between association and causation
 5. Incidence and prevalence
 - a. Distinguish disease incidence from disease prevalence
 6. Screening
 - a. Understand factors that affect the rationale for screening for a condition or disease (eg, prevalence, test accuracy, risk benefit, disease burden, presence of a presymptomatic state)
 7. Cost benefit, cost effectiveness, and outcomes
 - a. Interpret cost-effectiveness ratios
 - b. Distinguish costs from charges
 - c. Understand quality-adjusted life years
 8. Measurement
 - a. Understand the types of validity that relate to measurement (eg, face, construct, criterion, predictive, content)
 - b. Distinguish accuracy from precision
 - c. Understand when to use and how to interpret a kappa coefficient
- C. Ethics in Research
 1. Professionalism and misconduct in research
 - a. Identify and manage potential conflicts of interest in the funding, design, and/or execution of a research study
 - b. Identify various forms of research misconduct (eg, plagiarism, fabrication, falsification)
 - c. Know how, and to whom, to report concerns of research misconduct
 2. Principles of research with human subjects
 - a. Understand and contrast the functions of an Institutional Review Board and a Data Safety Monitoring Board

- b. Recognize the types of protections in designing research that might be afforded to children and other vulnerable populations
 - c. Understand the federal regulatory definitions regarding which activities are considered research and what constitutes human subjects research
 - d. Understand the federal regulatory definition of minimal risk and apply this to research involving children
 - e. Understand the ethical considerations of study design (eg, placebo, harm of intervention, deception, flawed design)
3. Principles of consent and assent
- a. Understand what constitutes informed consent in research
 - b. Distinguish between consent and assent in research involving children
- D. Quality Improvement
1. Design of a Project
- a. Understand various models of quality improvement and recognize that all utilize a data-informed, iterative process using tests of change to achieve a stated aim
 - b. Understand that the aim of any quality improvement project should be specific, measurable, achievable, realistic, and time-limited
 - c. Understand strategies to optimize identification of key drivers and interventions to achieve a specific aim
 - d. Understand tools to facilitate completion of quality improvement work, including key driver diagrams and process maps
 - e. Understand each phase of a Plan-Do-Study-Act (PDSA) cycle
2. Data and Measurement
- a. Differentiate between process, outcome, and balancing measures
 - b. Interpret a run chart and identify shifts, trends, and outliers in data
 - c. Differentiate between a run chart and a control chart
 - d. Differentiate between common cause and special cause variation