

**Pediatric Emergency Medicine**  
Competency Based Goals and Objectives

**COMPETENCY 1. Patient Care.** Provide family centered patient care that is developmentally and age appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

1. Obtain effectively a problem-oriented history.
2. Perform effectively a focused physical examination
3. Utilize effectively laboratory tests.
  - ◆ CBC with differential count, platelets, RBC indices.
  - ◆ Bacterial, viral, and fungal cultures and rapid screens.
  - ◆ Serologic tests for infection (e.g., monospot, VDRL, hepatitis).
  - ◆ Blood chemistries: electrolytes, calcium, magnesium, phosphate, and glucose.
  - ◆ Arterial, venous, and capillary blood gases.
  - ◆ Renal function tests.
  - ◆ Tests of hepatic function and damage.
  - ◆ Drug levels and toxic screens.
  - ◆ Gram stain.
  - ◆ Wet mount .
  - ◆ Urinalysis.
  - ◆ CSF studies.
  - ◆ Stool studies.
  - ◆ Coagulation studies.
  - ◆ Pregnancy test (urine, blood).
  - ◆ Other fluid studies (e.g., pleural fluid, joint aspiration fluid).
4. Utilize effective radiologic imaging.
  - ◆ Plain radiographs of chest, skull, extremity bones, abdomen, cervical spine.
  - ◆ Other imaging techniques, such as CT, MRI, ultrasound, and nuclear scans. (Interpretation not expected).
  - ◆ Contrast or air enema for suspected intussusception or upper GI series for suspected malrotation.
5. Integrate effectively data obtained from the history, physical examination and laboratory tests in developing a pertinent differential diagnosis for problems commonly seen in the emergency department.
6. Develop effectively a therapeutic and patient education plan based on the patients' clinical condition and diagnosis.
7. Develop effectively a referral and follow-up plan.
8. Assess, resuscitate, and stabilize critically ill or injured children in a timely fashion.
  - ◆ Rapidly recognize and assess emergent patients, such as those in respiratory failure or shock.
    - Perform the primary survey (ABCs) for all patients in an efficient manner.
    - Formulate a differential diagnosis quickly, especially with respect to conditions which may need respiratory or cardiovascular support or an immediate intervention (e.g. tension pneumothorax, increased intracranial pressure, cardiac tamponade, tracheostomy care, poisoning/toxicants).
    - Differentiate between cardiogenic, distributive, and hypovolemic shock.

- Differentiate between respiratory distress and failure.
- Assist in evaluating and stabilizing a child with multiple trauma.
- ◆ Establish and manage the airways of infants, children, and teens, recognizing the need for assistance with ventilation and/or oxygenation
- ◆ Establish vascular access in the critically ill child in a timely fashion.

10. Manage fluid therapy in the initial resuscitation of patients in shock.

11. Utilize effectively psychological monitoring

**COMPETENCY 2. Medical Knowledge.** Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge needed by a pediatrician; demonstrate the ability to acquire, critically interpret and apply this knowledge in patient care.

1. Evaluate and manage effectively common signs and symptoms in patients presenting to the Emergency Department.

- ◆ **General:** acute life threatening event (ALTE), agitated/disturbed child, alleged or suspected child abuse or neglect, dehydration, exercise intolerance, failure to thrive, fatigue, fever, hypothermia, malaise, septic or ill-appearing infant/child, sudden death, weight loss, unexplained crying.
- ◆ **Allergy/immunology:** Acute allergic reactions, anaphylaxis.
- ◆ **Cardiorespiratory:** Apnea, bradycardia, chest pain, cough, cyanosis, hypertension, hypotension (including orthostatic), palpitations, respiratory distress, respiratory failure, stridor, syncope tachycardia, tachypnea or shortness or breath, wheezing.
- ◆ **Dental:** Pain or trauma of mouth, jaw or tooth; tooth injury or loss
- ◆ **Dermatologic:** Hair loss, itching, skin rash.
- ◆ **EENT:** Abnormal pupils or eye movement, dizziness, earache, ear discharge, eye pain, hearing loss, nosebleed, painful swallowing, sore throat, sudden red eye, visual disturbances.
- ◆ **Endocrine:** Heat/cold intolerance, polyphagia, polydipsia.
- ◆ **GI:** Abdominal pain, constipation, diarrhea, difficulty swallowing, distension, GI bleeding, jaundice, vomiting (bilious and non-bilious).
- ◆ **GU/Renal:** Bloody or discolored urine, edema, decreased or increased urination, dysuria, groin or scrotal mass or pain, urinary frequency or urgency.
- ◆ **GYN:** Menstrual problems, vaginal bleeding, vaginal discharge.
- ◆ **Hematologic/Oncologic:** Abnormal bleeding, acute illness or fever in a neutropenic child/cancer patient, bruising, hepatosplenomegaly, lymphadenopathy, masses, pallor, petechiae.
- ◆ **Musculoskeletal:** arthralgia, back pain, inability to move an extremity, joint swelling, limb pain, limp, trauma.
- ◆ **Neurologic:** Abnormal movements, ataxia, bulging fontanel, coma, confusion, dizziness, fainting spells, headache, head injury, lethargy, paralysis, seizures, spasticity, stiff neck, weakness.
- ◆ **Psychiatric:** Anxiety, depression, hallucinations, hysteria, suicidal ideation, violent behavior.
- ◆ **Surgery/trauma:** Acute abdomen, burns, lacerations, trauma (Note: for major trauma, work with surgical trauma team).

2. Evaluate and manage effectively common illnesses and injuries that present emergency.

- ◆ **Allergy/immunology:** Acute illness in an immunocompromised child, anaphylaxis, angioedema, asthma, serum sickness, urticaria.
- ◆ **Cardiovascular:** Acute illness in a patient with congenital heart disease, congestive heart failure, cardiomyopathy, dysrhythmias (asystole, atrial fibrillation and flutter, bradycardia, electromechanical dissociation, SVT, ventricular fibrillation and tachycardia,), endocarditis, Kawasaki's disease, myocarditis, shock (hypovolemic, cardiogenic, distributive), pericarditis, rheumatic fever.
- ◆ **Dermatology:** Acute drug reactions, bite and sting injuries, contact dermatitis, cutaneous manifestation of systemic and/or contagious diseases, infections of skin and hair (bacterial, fungal, and viral), pediculosis, scabies, warts.
- ◆ **Endocrine/Metabolic:** Acute adrenal insufficiency, acute illness in a child with underlying endocrine/metabolic disease, diabetes insipidus, diabetes mellitus and ketoacidosis, hypocalcemia, hypoglycemia, hypo- and hypernatremia, inborn error of metabolism, syndrome of inappropriate secretion of antidiuretic hormone (SIADH), thyroid disease.
- ◆ **GI/surgical:** Acute abdomen, appendicitis, biliary tract disease, bowel obstruction, caustic ingestion, constipation, dehydration, foreign body in GI tract, gastroenteritis, gastroesophageal reflux, hepatitis, hepatosplenomegaly, ileus, incarcerated hernia, inflammatory bowel disease, intussusception, malrotation, pancreatitis, peptic ulcer disease, peritonitis, pyloric stenosis, upper and lower GI tract bleeding.
- ◆ **GU/renal:** Acute hypertension, acute illness in a child on chronic dialysis or with transplanted kidney, acute renal failure, balanitis, edema, epididymitis, hematuria, labial adhesions, paraphimosis, phimosis, proteinuria, STD, renal lithiasis, testicular torsion, urinary tract infection.
- ◆ **GYN:** Cervicitis, dysfunctional vaginal bleeding, ovarian torsion, pelvic inflammatory disease (PID), pregnancy (intrauterine, ectopic, abortion), ruptured ovarian cyst, sexually transmitted diseases.
- ◆ **Hematologic/Oncologic:** Anemia, fever in a child with sickle cell disease or leukemia, coagulopathy, hemophilia with acute trauma, Henoch Schönlein purpura, possible tumor (masses), sickle cell pain crisis, sequestration and chest syndrome, thrombocytopenia.
- ◆ **Infectious disease:** adenitis, cervical cellulitis (especially facial/orbital), dental abscess, encephalitis, fever without source, HIV/AIDS, infected wounds and bites, meningitis, otitis media/externa, pelvic inflammatory disease, pharyngitis, stomatitis, sinusitis, sepsis/bacteremia, [see also infections in other categories].
- ◆ **Neurologic:** Afebrile seizures, altered mental status, ataxia, brain tumor, febrile seizures, increased intracranial pressure, migraine, muscle contraction headache, paresis/paralysis, shunt malfunction/infection, status epilepticus.
- ◆ **Ophthalmologic:** Corneal abrasion, conjunctivitis, infection, ocular foreign body, hyphema, trauma.
- ◆ **Orthopedic:** Arthritis, common dislocations, discitis, fractures, gait disturbance, Osgood Schlatter's Disease, overuse syndromes, osteomyelitis, septic arthritis, sprains, strains.
- ◆ **Otolaryngologic:** Epistaxis, foreign body aspiration, peritonsillar or retropharyngeal abscess.
- ◆ **Pulmonary:** Acute illness in a child with cystic fibrosis, asthma (including status), bacterial tracheitis, bronchiolitis, bronchopulmonary dysplasia (BPD), croup, epiglottitis, foreign body aspiration, pleural effusion, pneumonia, pneumothorax, respiratory failure, smoke inhalation.
- ◆ **Trauma/surgical:** Burns, closed head injury, dental injuries, intracranial hemorrhages (subdural, epidural, subarachnoid), skull fractures, soft tissue injury (including

- lacerations, abrasions, and contusions), major trauma to head or face, neck or spine, chest, abdomen, urogenital tract, major vessels or organs (with surgeon/trauma team).
- ◆ **Toxicants/environmental injuries:** Electrical injury, heat and cold injury, ingestion/poisoning (unknown substance or common poisons: acetaminophen, antidepressants, benzodiazepines, carbon monoxide, cocaine, cough and cold medicines, digitoxin, drugs of abuse, hydrocarbons, iron, narcotics, neuroleptics), smoke inhalation, submersion injury/near drowning, weapons of mass destruction or biological/chemical weapons.
  - ◆ **Psychiatric:** Combative patient, conversion reaction, depression, suicide attempt/ideation, panic attacks.
  - ◆ **Rheumatologic:** Arthritis, dermatomyositis, lupus, joint or soft tissue pain,
  - ◆ **Social:** Child abuse or neglect, intimate partner violence, rape, sexual abuse, substance abuse.
3. Demonstrate a fund of basic science knowledge and applies it to patients seen in the emergency department.
  4. Demonstrate understanding of common diagnostic tests and imaging studies used in the ED
    - ◆ Explain the indications for and limitations of the study
    - ◆ Understand the benefits and disadvantages of family presence during procedures
    - ◆ Know or be able to locate readily age-appropriate normal values for lab studies.
    - ◆ Apply knowledge of diagnostic test properties, including the use of sensitivity, specificity, positive predictive value, negative predictive value, likelihood ratios, and receiver operating characteristic curves, to assess the utility of tests in various clinical settings
    - ◆ Interpret test results in the context of the care of the specific patient
    - ◆ Discuss therapeutic options for correction of abnormalities
  5. Develop fundamental methods of problem solving.

**COMPETENCY 3. Communication Skills.** Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

1. Obtain effectively pertinent medical history from patients and families.
2. Explain effectively the diagnostic and therapeutic plans to the patient and family members.
3. Demonstrate sensitivity in communicating with patients and family members.
4. Show understanding how age, culture, religion and personal beliefs can influence physician – patient interactions.
5. Communicate effectively with other health care professionals in developing diagnostic and therapeutic plans
6. Obtain effectively consultations from other services when indicated.
7. Maintain accurate, timely, and legally appropriate medical records in the ED

**COMPETENCY 4. Practice-based Learning and Improvement.** Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

1. Develop knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate and improve one's patient care practice.
2. Identify and use resources to obtain up-to-date information about evaluation and management of common illnesses and injuries presenting to the Emergency Department.

3. Use information technology to obtain clinical information and perform online searches about specific topics.
4. Use a logical and appropriate clinical approach to the care of emergency patients, applying principles of evidence-based decision-making and problem solving, and demonstrating the ability to prioritize.
  - ◆ Perform accurate ED triage.
  - ◆ Demonstrate the ability to multi-task by providing simultaneous care to multiple patients, with varying levels of acuity and severity of illness.
  - ◆ Use appropriate timing of diagnostic/therapeutic interventions.
  - ◆ Adjust pace to ED patient acuity, volume, and flow.
5. Identify standardized guidelines for diagnosis and management of common illnesses and know the rationale behind these recommendations
6. Identify personal learning needs and develop an educational plan to address them.

**COMPETENCY 5. Professionalism.** Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.

1. Display appropriate honesty, motivation, punctuality, dress and grooming.
2. Respect patients' confidentiality and privacy
3. Behave with personal integrity in all activities and interactions with other medical personnel.
4. Effectively advocate for patients regardless of personal beliefs.
5. Participate effectively as part of an interdisciplinary team in the ED.
6. Practice ethically and within medical-legal constraints in the care of children presenting to the ED.
7. Discuss key principles and identify resources for information about legal issues of importance to practice in the ED.

**COMPETENCY 6. Systems-Based Practice.** Understand how to practice quality health care and advocate for patients within the context of the health care system.

1. Understand the basic principles and utilization of Emergency Medical Services for children.
2. Understand the structure and resources available in pre-hospital care.
3. Interact effectively with other services and non-medical personnel in order to develop an effective therapeutic and follow-up plan for the patient.
4. Discuss cost and utilization issues for services provided in the emergency department.
5. Understand key aspects of health care systems, cost control, billing, and reimbursement in the ED setting