

**Loyola University, Stritch School of Medicine**  
**Pediatrics Clerkship: Goals and Objectives – Revised 7/15**  
**Adapted from the COMSEP curriculum -**  
**<http://comsep.org/educationalresources/currobjectives.cfm>**

**HISTORY AND PHYSICAL EXAM SKILLS**

**A. Interviewing Skills**

1. Demonstrate an ability to obtain the following information in an age-appropriate and sensitive manner from a child and/or the accompanying adult:

*Past History*

- Neonatal history, including: birth weight and approximate gestational age, maternal complications (such as extent of prenatal care, infections, exposure to drugs, alcohol or medications), and problems in the newborn period (such as prematurity, respiratory distress, jaundice and infections)
- Immunizations
- Chronic medical conditions
- Previous hospitalizations
- Surgeries
- Medications
- Allergies (medication, food, environmental)
- Growth and development
- Nutrition

*Family History*

- Age and health of family members to include acute and chronic medical conditions
- Drug and alcohol abuse
- Construct a family pedigree

*Social History*

- Household composition and socioeconomic status
- School, caregiver, and peer relationships
- HEADSS assessment
- Environmental and personal safety assessment
- Seat belts and car seats
- Bicycle helmets
- Firearms in the home
- Smoking
- Lead exposure
- Home safety for infants and toddlers

**B. Physical Examination Skills**

1. Demonstrate the role of patient observation in determining the nature of a child's illness and developmental stage.

2. Conduct a pediatric physical examination appropriate to the nature of the visit or complaint (complete vs. focused) and the age of the patient.

3. Demonstrate an ability to perform the following examination skills.

### *Appearance*

- Interpret the general appearance of the child, including size, morphologic features, development, behaviors and interaction of the child with the parent and examiner.
- Identify signs of acute and chronic illness in a neonate, infant, toddler, school aged child, and adolescents as evidenced by skin color, respiration, hydration, mental status, cry and social interaction.

### *Vital signs*

- Measure vital signs, demonstrating knowledge of the appropriate blood pressure cuff size and normal variation in temperature depending on the route of measurement (oral, rectal, axillary or tympanic).
- Identify variations in vital signs based on age of the patient, the presence or absence of disease, and testing modalities (e.g. blood pressure cuff size).

### *Growth (See section on Growth)*

- Accurately graph and interpret height (length), weight, and head circumference.
- Calculate, plot, and interpret BMI.
- Describe the usefulness of longitudinal data in assessing growth.

### *Development (See section on Development)*

- Accurately identify and interpret major developmental milestones of the neonate, infant, toddler, school-aged child, and adolescent.

### *HEENT*

- Observe, measure, and describe head size and shape, symmetry, facial features, and ear position as part of the examination for dysmorphic features.
- Identify sutures and fontanels in neonates and interpret the findings.
- Identify the red reflex and discuss how it is used to detect corneal opacities and intraocular masses.
- Detect the corneal light reflection and discuss how it is used to identify strabismus.
- Assess hydration of the mucous membranes.
- Assess dentition.
- Observe the tympanic membrane using an otoscope and an insufflator.
- Identify the structures of the oropharynx (e.g. uvula, tonsils, palate, tongue) and recognize signs of pathology.

### *Neck*

- Palpate lymph nodes and describe what anatomic areas they drain.
- Demonstrate maneuvers that test for nuchal rigidity.
- Palpate the thyroid and any neck masses.

### *Chest*

- Observe, measure and interpret the rate, pattern and effort of breathing.
- Identify normal variations of respiration and signs of respiratory distress e.g. grunting, flaring, and retractions.
- Identify normal breath sounds and findings consistent with respiratory pathology such as stridor, wheezing, crackles and asymmetric breath sounds.
- Identify transmitted upper airway sounds.
- Observe and describe breast tissue according to developmental stage (e.g. Tanner scale or Sexual Maturity Rating).

### *Cardiovascular*

- Identify the pulses in the upper and lower extremities through palpation.
- Observe and palpate precordial activity.
- Describe cardiac rhythm, rate, and quality (such as intensity, pitch, and location) of the heart sounds and murmurs and variation with maneuvers through auscultation.
- Assess peripheral perfusion, using a test for capillary refill.
- Identify central versus peripheral cyanosis.

### *Abdomen*

- Palpate the liver, spleen and kidneys, and interpret the finding based on the age of the patient.
- Assess the abdomen for distention, tenderness, and masses through observation, auscultation, and palpation.
- Determine the need for a rectal examination.

### *Genitalia*

- Describe the difference in appearance of male and female genitalia at different ages and developmental (e.g. Tanner) stages.
- Palpate the testes and identify genital abnormalities in males, including cryptorchidism, hypospadias, phimosis, hernia, and hydrocele.
- Recognize genital abnormalities in females including signs of virilization, imperforate hymen, and labial adhesions.

### *Extremities*

- Examine the hips of a newborn for developmental dysplasia of the hip using the Ortolani and Barlow maneuvers
- Observe and describe the gait of children at different ages.
- Recognize pathology, such as joint effusions, signs of trauma, and inflammation.

### *Back*

- Perform and interpret a screening test for scoliosis.
- Examine the back for midline tufts of hair, pits, sacral dimples, or masses.

### *Neurologic examination*

- Elicit the primitive reflexes that are present at birth and describe how they change as the child develops.
- Assess the quality and symmetry of tone, strength and reflexes, using age-appropriate techniques.
- Assess the major developmental milestones of newborns, infants, toddlers, school aged children, and adolescents.

### *Skin*

- Describe and assess turgor, perfusion, color, hypo and hyperpigmented lesions, and rashes through observation and palpation.
- Identify jaundice, petechiae, purpura, bruising, vesicles, and urticaria.

## C. Patient Communication Skills

1. Conduct an effective interview by adapting the interview to the visit (e.g., first visit, acute care, health supervision), or chief complaint.

2. Demonstrate effective verbal and non-verbal communications skills with children and their parents or families that include:
  - Establishment of rapport taking into account the patient's age and development stage.
  - Use of communication techniques that enable development of a therapeutic alliance being sensitive to the unique social condition and cultural background of the family.
  - Identification of the primary concerns of the patient and/or family.
  - Discussion of medical information in terms understandable to patients and families avoidance of medical jargon.
3. Correctly identify the need for an interpreter in specific patient-physician interactions.

#### D. Peer Communication Skills

1. Demonstrate effective oral and written communication with the health care team avoiding jargon and vague terms (e.g. clear and normal).
2. Present a complete, well-organized verbal summary of the patient's history and physical examination findings, including an assessment and plan modifying the presentation to fit the time constraints and educational goals of the situation.
3. Document the history, physical examination, and assessment and plan using a format appropriate to the clinical situation (e.g. inpatient admission, progress note, office or clinic visit, acute illness, health supervision visit, and interval care visits).
4. Write admission and daily orders for a hospitalized patient.
5. Write a prescription (see Therapeutics section) specific for a child's weight.

#### E. Problem Solving Skills

1. Demonstrate an ability to generate an age-appropriate differential diagnosis and problem list based on the interview and physical examination.
2. Outline a diagnostic plan based on the differential diagnosis.
3. Interpret the results of diagnostic tests or procedures, recognizing the age-appropriate values for commonly used laboratory tests, such as the CBC, urinalysis, and serum electrolytes.
4. Formulate a therapeutic plan appropriate to the working diagnosis.
5. Formulate an educational plan to inform the health care team and family of your thought process and decisions.
6. Search for relevant information using electronic (or other) data bases and critically appraise the information obtained to make evidence based decisions.

## HEALTH SUPERVISION

### ***Knowledge***

1. List the most common preventable morbidities in childhood and describe strategies for prevention.

2. Describe the components of a health supervision visit including health promotion and disease and injury prevention, the appropriate use of screening tools, and immunizations for newborns, infants, toddlers, school aged children, and adolescents.
3. Describe the rationale for childhood immunizations. (See also Prevention).
4. Discuss the rationale for screening tests (such as environmental lead questionnaire, domestic violence screening, CBC, urinalysis, blood lead level, and PPD placement).
5. Describe the indications, and appropriate use of the following screening tests: neonatal screening, developmental screening, hearing and vision screening, lead screening, anemia screening, and tuberculosis testing.
6. Define anticipatory guidance and describe how it changes based on the age of the child.

***Skills.***

Demonstrate an ability to provide age-appropriate anticipatory guidance about nutrition, behavior, immunizations, injury prevention, pubertal development, sexuality, and substance use and abuse.

***Processes***

All students during the course of the Pediatric Clerkship should see an infant, toddler, school aged, and adolescent child for a health care supervision visit.

## **GROWTH**

***Knowledge***

1. Describe variants of normal growth in healthy children, (e.g. familial short stature and constitutional delay).
2. Identify and describe abnormal growth patterns based on the family growth history and the child's previous growth e.g. microcephaly, macrocephaly, short stature, obesity, growth abnormalities related to specific physical findings.
3. Identify failure to thrive and overweight/obesity in a child or adolescent using BMI and other growth measures and outline the differential diagnosis and initial evaluation.

***Skills***

Demonstrate ability to measure and assess growth including height/length, weight, and head circumference and body mass index in patient encounters using standard growth charts.

***Processes***

All students on the Pediatric Clerkship should see a patient with real or possible (e.g. parental concern) issues related to growth (e.g. failure to thrive, obesity, short stature, macrocephaly, microcephaly, constitutional delay, small for gestation age). This can be in the context of a well child examination or a child with a known disorder.

## **DEVELOPMENT**

***Knowledge***

1. Describe the developmental domains of childhood (e.g. gross motor, fine motor, language, cognitive, and social development.)

2. Describe how abnormal findings on the development screening tools would suggest a diagnosis of developmental delay or autism.
3. Describe the initial evaluation and need to refer a patient with evidence of developmental delay or abnormality.

### ***Skills***

Demonstrate an ability to assess psychosocial, language, physical maturation, and motor development in pediatric patients using appropriate resources (e.g. Bright Futures, the Ages and Stage Questionnaire, The Modified Checklist of Autism in Toddlers, Denver Developmental Standard Test 2, and HEADSS).

Key features might include the following:

- Newborn/Infant - Disappearance of primitive reflexes; changes in tone and posture; cephalocaudal progression of motor milestones during the first year; stranger anxiety.
- Toddler/child - Separation and autonomy in two to three-year olds; sequence of language development; concept of school readiness
- Adolescent - Sequence of physical maturation (e.g. Tanner scales or Sexual Maturity Rating), cognitive development, and assessment of psychosocial and emotional development (e.g. HEADSS).

### ***Processes***

All students on the Pediatric Clerkship should see a patient with a patient with real or possible (e.g. parental concerns) issues related to development (e.g. delayed or possibly delayed language, motor, fine motor, or social adaptive skills).

## **BEHAVIOR**

### ***Knowledge***

1. Identify normal pattern of behaviors in the developing child such as:
  - newborn infants: development and evolution of social skills
  - toddler: autonomy
  - school age: independence
  - adolescence: abstract thinking
2. Describe the typical presentation of common behavioral problems and issues indifferent age groups such as:
  - Newborn/infants: sleep problems, colic
  - toddler: temper tantrums, toilet training, feeding problems
  - school age: enuresis, attention deficit, autism
  - adolescence: eating disorders, risk-taking behavior.
3. Describe the emotional disturbances or medical conditions that may manifest as alterations in school performance and peer or family relationships.
4. Distinguish between age-appropriate behavior, inappropriate or abnormal behavior, and those that suggest severe psychiatric or development illness in children of different ages (for example head banging, threatening gestures, suicidal).
5. Describe how somatic complaints may represent psychosocial problems (e.g. recurrent abdominal pain, headache, fatigue, and neurologic complaints).

6. Describe the types of situations where pathology in the family (e.g. alcoholism, domestic violence, depression) contributes to childhood behavior problems.

### **Skills**

1. Identify behavioral and psychosocial problems of childhood using the medical history and physical examination.
2. Counsel parents and children about the management of common behavioral concerns, such as discipline and toilet training.

### **Processes**

All students on the Pediatric Clerkship should see a patient or patients with an individual or parental concern over a specified behavior or group of behaviors (e.g. sleep problems, colic, temper tantrums, toilet training, feeding problems, enuresis, attention deficit, encopresis, autism, eating disorders, conduct disorders, head banging, poor school performance).

## **NUTRITION**

### **Knowledge**

1. Describe the advantages of breastfeeding and describe common difficulties experienced by breastfeeding mothers.
2. Describe the signs and symptoms of common nutritional deficiencies in infants and children (e.g. iron, vitamin D, fluoride, and inappropriate caloric volume) and how to prevent them.
3. Identify children with specific or special nutritional needs (e.g. patients with chronic illness, prematurity, abnormal growth patterns, failure to thrive, obesity, or when family risk factors suggest the possibility that nutritional modification will be needed).
4. Describe nutritional factors that contribute to the development of childhood obesity and to failure to thrive.
5. Discuss risk factors for the development of cardiac disease and diabetes with families.
6. Describe the endocrine, cardiovascular, and orthopedic consequences of childhood obesity.

### **Skills**

1. Obtain a dietary history in children of different ages that includes the following:
  - Infants: type, amount and frequency of breast or formula feeding, solid foods, and dietary supplements (vitamins, iron, fluoride).
  - Toddler/school age child: milk, juice, soda, fast foods, and meal patterns
  - Adolescents: meal patterns, nutritional supplements, milk, juice, soda, alcohol, snacking, and fad diets
2. Determine the caloric adequacy of an infant's diet.
3. Provide nutritional advice to families regarding the following:
  - Breastfeeding vs. formula feeding
  - Addition of solids to an infant's diet
  - Introduction of cow's milk to an infant's diet
  - Healthy food choices for children and adolescents
  - Exercise and TV or video viewing and their effect on obesity

### **Processes**

All students on the Pediatric Clerkship should see a patient or patients with self or parental concerns or questions about appropriate nutrition (e.g. failure to thrive, questions about breast vs. bottlefeeding, questions about switching to formula, when to add solids). This can be in the context of a routine health care supervision visit or in the inpatient setting.

## **PREVENTION**

### ***Knowledge***

1. Describe how risk of illness and injury change during growth and development and give examples of the age-and development-related illnesses and injuries.
2. List the immunizations currently recommended from birth through adolescence and identify patients whose immunizations are delayed.
3. Describe the rationale, and general indications and contraindications of immunizations.
4. Explain how screening for family violence may serve as an important preventive health practice.
4. Describe the key components of a preparticipation sports physical.
5. Describe infection control precautions that help limit the spread of infectious diseases in patients and health care providers (e.g. handwashing, masks).

### ***Skills***

Provide age-appropriate anticipatory guidance for the following: motor vehicle safety, infant sleeping position, falls, burns, poisoning, fire safety, choking, water safety, bike safety, sexually transmitted diseases, firearms and weapons.

## **ISSUES UNIQUE TO ADOLESCENCE**

### ***Knowledge***

1. Describe the unique features of the physician-patient relationship during adolescence including confidentiality and consent.
2. Identify and describe the sequence of the physical changes of puberty (e.g. Tanner scale or Sexual Maturity Rating).
3. List the components of health supervision for an adolescent, such as personal habits, pubertal development, immunizations, acne, scoliosis, sports participation, and indications for pelvic exam.
4. Describe the common risk-taking behaviors of adolescents, such as alcohol and other drug use, sexual activity and violence.
5. Describe the contributions of unintentional injuries, homicide, and suicide to the morbidity and mortality of adolescents.
6. Describe the features of common mental health problems in adolescence, including school failure, attention deficit, body image, eating disorders, depression and suicide.
7. Describe an approach to counseling an adolescent regarding sexual activity, substance abuse, and personal safety.
8. Describe the unique difficulties encountered by adolescents with chronic diseases, including adherence and issues of autonomy vs. dependence.



**Skills**

1. Interview an adolescent patient, using the HEADSS method, to ask sensitive questions about lifestyle choices that affect health and safety (e.g. sexuality, drug, tobacco and alcohol use) and give appropriate counseling.
2. Conduct a physical examination of an adolescent that demonstrates respect for privacy and modesty, employing a chaperone when appropriate.
3. Conduct a pre-participation sports examination and demonstrate the key components of that examination necessary to clear an individual for participation in strenuous exercise (special senses, cardiac, pulmonary, neurological, and musculoskeletal).
4. Conduct a health supervision visit for a healthy adolescent, incorporating a psychosocial interview, developmental assessment and appropriate screening and preventive measures.

**Processes**

All students on the Pediatric Clerkship should see an adolescent patient or patients.

**ISSUES UNIQUE TO THE NEWBORN****Knowledge**

1. Describe the transition from the intrauterine to the extrauterine environment, including temperature regulation, cardiovascular/respiratory adjustment, glucose regulation, and initiation of feeding.
2. List the information from the history of pregnancy, labor, and delivery obtained from the parents or medical record that has implications for the health of the newborn.
3. Describe how gestational age can be assessed with an instrument such as the Ballard scale and identify key indications of gestational maturity.
4. Describe the challenges for parents adjusting to a new infant in the home.
5. List the differential diagnosis and complications for the following common problems that may occur in the newborn
  - jaundice
  - respiratory distress
  - poor feeding
  - large and small for gestation infants
  - "state" abnormalities which includes tremulousness, irritability, lethargy from causes such as drug withdrawal, hypoglycemia, sepsis
  - prematurity
6. Describe how gestational age affects risks of morbidity or mortality in the newborn period (for example lung disease, hypothermia, and glucose homeostasis).

**Skills**

1. Perform a complete physical examination of the newborn infant.
2. Give parents of a newborn anticipatory guidance for the following issues:
  - the benefits of breast-feeding vs. formula for the newborn and mother
  - normal bowel and urinary elimination patterns
  - normal neonatal sleep patterns

- newborn screening tests to include screens for metabolic and infectious conditions and hearing loss
- appropriate car seat use
- prevention of SIDS (“back to sleep”):
- immunizations (e.g. HBV)
- medications (e.g. eye prophylaxis, vitamin K, and vitamin D)
- the role of circumcision

**Processes**

All students on the Pediatric Clerkship should see one or more newborns.

**MEDICAL GENETICS AND DYSMORPHOLOGY**

**Knowledge**

1. Describe the genetic basis and clinical manifestations of the following syndromes, malformations, and associations:
  - Common chromosomal abnormalities, (e.g. Trisomy 21, Turner syndrome, Klinefelter syndrome)
  - Syndromes due to teratogens (e.g. fetal alcohol syndrome)
  - Other common genetic disorders (e.g. cystic fibrosis, sickle cell disease, hemophilia)
  - Single malformations with multifactorial etiology (e.g. spina bifida, congenital heart disease, cleft lip and palate)
2. List common medical and metabolic disorders (e.g. hearing loss, hypothyroidism, PKU, hemoglobinopathies) detected through newborn screening programs.
3. Discuss the effects of maternal health and potentially teratogenic agents on the fetus and child, including maternal diabetes and age, alcohol use, and illicit drug use.
4. List common prenatal diagnostic assessments (e.g. maternal serum screening, amniocentesis, and ultrasonography) and understand their use.
5. Discuss the role of genetics in common multifactorial conditions (e.g. inflammatory bowel disease, pyloric stenosis, congenital heart disease, cleft lip, diabetes and cancer).

**Skills**

1. Use a family history to construct a pedigree (e.g., for the evaluation of a possible genetic disorder).

**COMMON ACUTE PEDIATRIC ILLNESSES**

**Knowledge**

1. List the age appropriate differential diagnosis for pediatric patients presenting with each of the following symptoms.
  - Abdominal pain
  - Cough and/or wheeze
  - Diarrhea
  - Fever and rash
  - Fever without a source
  - Headache
  - Lethargy or irritability
  - Limp or extremity pain
  - Otagia

- Rash
- Rhinorrhea
- Seizures
- Sore throat
- Vomiting

2. List the age appropriate differential diagnosis for pediatric patients presenting with each of the following physical findings.

- Abdominal mass
- Bruising
- Heart murmur
- Hepatomegaly
- Lymphadenopathy
- Splenomegaly
- Petechiae and/or purpura
- Red eye
- White pupillary reflex

3. List the age appropriate differential diagnosis for pediatric patients presenting with each of the following laboratory findings.

- Anemia
- Hematuria
- Proteinuria
- Positive Mantoux skin test (PPD)

4. Describe the epidemiology, clinical, laboratory, and radiographic findings for each of the core pediatric level conditions listed for each presenting complaint.

5. Explain how the physical manifestations of disease and the evaluation and management may vary with the age of the patient. Be able to give specific examples.

6. Discuss the characteristics of the patient and the illness that must be considered when making the decision to manage the patient in the hospital or in the outpatient setting. (M)

### **Skills**

1. Perform an age-appropriate history and physical examination pertinent to the presenting complaint of the child.

2. Generate an initial diagnostic and therapeutic plan for each patient presenting with one of the following symptoms, physical examination findings, or laboratory findings.

#### Symptoms

- Abdominal pain
- Cough and/or wheeze
- Diarrhea
- Fever and rash
- Fever without a source
- Headache
- Lethargy or irritability
- Limp or extremity pain
- Otagia
- Rash
- Rhinorrhea

- Seizures
- Sore throat
- Vomiting

Physical examination findings

- Abdominal mass
- Bruising
- Heart murmur
- Hepatomegaly
- Lymphadenopathy
- Petechiae and/or purpura
- Splenomegaly
- Red eye
- White pupillary reflex

Laboratory tests

- Anemia
- Hematuria
- Proteinuria
- Positive Mantoux skin test (PPD)

**Processes:**

All students on the Pediatric Clerkship should see a patient or patients with the following system or symptom based complaints:

- Upper respiratory tract complaint e.g. sore throat, difficulty swallowing, otalgia
- Lower respiratory tract complaint e.g. cough, wheeze, shortness of breath
- Gastrointestinal tract complaint e.g. nausea, vomiting, diarrhea, abdominal pain
- Skin or mucous membrane complaint e.g. rash, pallor
- Central nervous system complaint e.g. headache, lethargy, irritability, fussiness
- Fever without localizing findings

## **COMMON CHRONIC ILLNESS AND DISABILITY**

**Knowledge**

1. Describe the clinical features of chronic medical conditions seen in children such as: asthma, atopic dermatitis, cerebral palsy, cystic fibrosis, diabetes mellitus, epilepsy, malignancy (e.g. acute lymphocytic leukemia and Wilms tumor), obesity, seasonal allergies, and sickle cell disease.
2. Describe how chronic illness can influence a child's growth and development, educational achievement, and psychosocial functioning.
3. Describe the impact that chronic illness has on the family's emotional, economic and psychosocial functioning.
4. Describe the impact of a patient's culture on the understanding, reaction to, and management of a chronic illness.
5. Explain the management strategies for common chronic illnesses seen in children such as asthma, seasonal allergies, diabetes, and atopic dermatitis.

**Skills**

1. Perform a medical interview and a physical examination in a child with a chronic illness that includes the
  - effects of the chronic illness on growth and development,
  - emotional, economic and psychosocial functioning of the patient and family, the
  - treatments used, including “complementary and alternative therapies.”

### **Processes**

Students on the clerkship should see one or more patients with one of the chronic medical conditions listed above. This can be in the context of an acute or routine visit.

## **THERAPEUTICS**

### **Knowledge:**

1. Describe how to assess whether a drug is excreted in the breast milk and safe to use by a breast-feeding mother.
2. List medications such as aspirin, tetracycline, and oral retinoic acid that are contraindicated or must be used with extreme caution in specific pediatric populations.
3. Describe the appropriate use of the following common medications in the outpatient setting, including when it is NOT appropriate to treat with a medication:
  - Analgesics / antipyretics
  - Antibiotics
  - Bronchodilators
  - Corticosteroids
  - Cough and cold preparations
  - Ophthalmic preparations
  - Otic preparations
  - Vitamin / mineral supplements
4. Select generally accepted pharmacologic therapy for common or life-threatening conditions in pediatric patients. These conditions could include:
  - Common conditions seen in ambulatory settings: acne, acute otitis media, allergic rhinitis, asthma, atopic dermatitis, candida dermatitis, fever, impetigo, pneumonia, streptococcal pharyngitis
  - Common conditions seen in hospitalized patients: Bronchiolitis, asthma, pneumonia
5. Describe the ways medication errors are systemically prevented.

### **Skills:**

1. Calculate a drug dose for a child based on body weight.
2. Write a prescription e.g. for a common medication such as an antibiotic.

## **FLUID AND ELECTROLYTE MANAGEMENT**

### **Knowledge:**

1. Describe the conditions in which fluid administration may need to be restricted (such as the syndrome of inappropriate ADH secretion, congestive heart failure, or renal failure) or increased (e.g. fever).

2. Describe the physical findings in hypovolemic shock and the approach to restoration of circulating fluid volume (i.e. “rescue” fluid infusion).

3. Describe the causes and consequences of fluid imbalances and electrolyte disturbances leading to dehydration and such conditions as hypernatremia, hyponatremia, hyperkalemia, hypokalemia, and severe acidosis.

**Skills:**

1. Obtain historical and physical finding information necessary to assess the hydration status of a child.

2. Calculate and write orders for intravenous maintenance fluids for a child considering daily water and electrolyte requirements.

3. Calculate and write orders for the fluid therapy for a child with severe dehydration caused by gastroenteritis to include “rescue” fluid to replenish circulating volume, deficit fluid, and ongoing maintenance.

4. Explain to parents how to use oral rehydration therapy for mild to moderate dehydration.

## **POISONING**

**Knowledge**

1. Describe the developmental vulnerability for poisoning and accidental ingestions in infants, toddlers, children, and adolescents.

2. List the ages at which prevalence of unintentional and intentional poisonings is highest and the passive and active interventions that decrease the incidence of childhood ingestions (e.g. locks or safety caps).

3. Describe the environmental sources of lead, the clinical and social importance of lead poisoning, and screening tools to identify children at risk for lead poisoning.

4. Describe the acute signs and symptoms of accidental or intentional ingestion of acetaminophen, iron, alcohol, and narcotics.

5. Describe the immediate emergency management of children with toxic ingestions (e.g. acetaminophen, and iron).

6. Describe the role of the Poison Control Center (1-800-222-1222) and other information resources in the management of the patient with an accidental or intentional ingestion.

**Skills:**

1. Provide anticipatory guidance regarding home safety and appropriate techniques to prevent accidental ingestions (see also Prevention).

2. Elicit a complete history when evaluating an unintentional ingestion or exposure to a toxic substance (including the substance, the route of exposure, the quantity, timing, and general preventive measures in the household).

3. Elicit a complete history surrounding the intentional ingestion of a toxic substance (including the substance, route of exposure, amount, timing, antecedent events, and stressors).

## **PEDIATRIC EMERGENCIES**

**Knowledge**

1. List the symptoms of and describe the initial emergency management of shock, respiratory distress, lethargy, apnea, and status epilepticus in pediatric patients.
2. Describe the age-appropriate differential diagnosis and the key clinical findings that would suggest a diagnosis for each of the emergent clinical problems in the table below.
3. Describe the clinical findings for each of the diagnosis to consider in the table below.

<b>Pediatric Emergencies Table</b>		
<b>Emergent Clinical Problem</b>	<b>Diagnoses to Consider (core pediatric level)</b>	<b>Diagnoses to Consider (mastery pediatric level)</b>
Airway Obstruction / Respiratory distress	Croup, bronchiolitis, asthma, pneumonia, foreign body aspiration, anaphylaxis	peritonsillar or retropharyngeal abscess
Altered mental status (Delirium/lethargy)	Head injury, increased ICP, substance abuse, infection (encephalitis, meningitis), diabetic ketoacidosis, hypoglycemia, abuse, shock, hypoxemia.	intussusception
Apnea	acute life-threatening event (ALTE), seizures, and respiratory infections (RSV and pertussis), GERD, sepsis	cardiac dysrhythmias, breath holding spells
Ataxia	ingestion, infection, and tumor	
Gastrointestinal bleeding	Meckel's diverticulum, fissure, intussusception	inflammatory bowel disease, allergic colitis, peptic ulcer disease
Injuries and accidents	Animal bites, minor head injury, nursemaids elbow	sprains and fractures, burns, near drowning, lacerations
Proptosis	tumor and orbital cellulitis	
Seizures	Infection (i.e., meningitis or encephalitis), status epilepticus, febrile, ingestion, hypoxemia, shock, electrolyte disturbances	tumor
Shock	Sepsis, severe dehydration, diabetic ketoacidoses, anaphylaxis, congestive heart failure and ingestion.	Burns, neurogenic shock, ductal dependent heart lesions, and adrenal insufficiency
Suicidal Ideation	Depression (U)	

## **CHILD ABUSE**

### **Knowledge**

1. List characteristics of the history and physical examination that should trigger concern for possible physical, sexual, and psychological abuse and neglect (e.g. such as inconsistency in the history, unexplained delays in seeking care, injuries with specific patterns or distributions on the body, or injuries incompatible with the child's development).
2. Describe the medical-legal importance of a full, detailed, carefully documented history and physical examination in the evaluation of child abuse.
3. Discuss the concurrence of domestic violence and child abuse and describe markers that suggest the occurrence of family violence.

4. Summarize the responsibilities of the “mandatory reporter” to identify and report suspected child abuse. Know to whom such a report should be made.

### **CHILD ADVOCACY**

#### ***Knowledge***

1. Describe barriers that prevent children from gaining access to health care, including financial, cultural and geographic barriers.
2. Identify opportunities for advocacy during a health supervision visit.
3. Identify a specific pediatric healthcare issue and outline a potential approach to advocacy.