Clerkship Learning Activity Objectives

**Inpatient Rotation**
1. Conduct a pediatric history and physical examination appropriate to the nature of the visit (initial vs follow up) or complaint (complete vs focused) and age of the patient.
2. Identify signs of acute and chronic illness in a neonate, infant, toddler, school aged child, and adolescent as evidenced by skin color, respiration, hydration, mental status, cry and social interaction.
3. Identify variations in vital signs based on the age of the patient, the presence or absence of disease, and testing modalities (e.g. rectal vs axillary temperature).
4. Discuss medical information in terms understandable to patients and families while avoiding medical jargon.
5. Observe the communication of life altering news to parents, children and adolescents.
6. Document the history, physical examination, and assessment and plan in a format appropriate to the clinical situation (e.g. admission note vs progress note)
7. Propose appropriate admission and daily orders for a hospitalized patient.
8. 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 clinical situation (e.g. admission vs progress vs family centered rounds).
9. Outline a stepwise diagnostic plan based on the presentation of the patient and the severity of the presenting conditions.
10. Justify diagnostic tests and procedures taking into account their invasiveness, risks, benefits, limitations, and costs.
11. Interpret the results of commonly used laboratory tests including the CBC, urinalysis, CSF analysis, and serum electrolytes.
12. Describe the appropriate use of the following common medications in the inpatient setting, including when it is NOT appropriate to treat with these medications:
   - Analgesics
   - Antipyretics
   - Antibiotics
   - Bronchodilators
   - Corticosteroids
   - Intravenous Fluids
13. Select generally accepted pharmacologic therapy for common conditions seen in the hospitalized patient including:
   - Asthma
   - Sepsis
   - Meningitis
   - Pneumonia
   - Urinary Tract Infections
Status epilepticus
14. Describe the conditions in which fluid administration may need to be restricted or increased and choose an appropriate intravenous fluid for a given condition.
15. 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.
16. Calculate the fluid therapy for a child with severe dehydration to include "rescue" fluid to replenish circulating volume and ongoing maintenance needs.
17. Describe “red flags” for non accidental trauma and the inpatient work up of child abuse.
18. Identify members of the health care team and describe how they contribute to the hospitalized child’s care (e.g. pharmacist, respiratory therapist, child life, etc).

Outpatient Rotation
1. Conduct a pediatric history and physical examination appropriate to the nature of the visit or complaint and age of the patient.
2. Accurately interpret height (length), weight and head circumference on age appropriate growth curves.
3. Identify major developmental milestones of the neonate, infant, toddler, school-aged child, and adolescent, recognize when there is a delay in reaching these milestones, and describe the initial evaluation and need to refer a patient with evidence of delay.
4. Write a prescription specific for a child’s weight.
5. 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.
6. Describe the indications and interpretation of the following screening tests:
   - developmental screening
   - hearing and vision screening
   - lead screening
   - anemia screening
   - Tuberculosis screening
   - cholesterol screening
7. Define anticipatory guidance and describe how it changes based on the age of the child.
8. Demonstrate an ability to provide age-appropriate anticipatory guidance about nutrition, behavior, immunizations, injury prevention, pubertal development, sexuality, and substance use and abuse.
9. 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.
10. List normal patterns of behaviors in the developing child and the typical presentation of common behavioral problems and issues in different age groups.
11. Counsel parents and children about the management of common behavioral concerns such as discipline, toilet training, and eating disorders.
12. Obtain a dietary history and provide nutritional advice to families and children.
13. List the immunizations currently recommended from birth through adolescence and identify patients whose immunizations are delayed.
14. Conduct a health supervision visit for a healthy adolescent, incorporating a psychosocial interview, developmental assessment and appropriate screening and preventive measures.
15. 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.
16. Explain the management strategies for common stable chronic illnesses seen in children such as asthma, seasonal allergies, diabetes, atopic dermatitis and ADHD.
17. Select generally accepted pharmacologic therapy for the following common conditions in pediatric patients:
   - acne
   - acute otitis media
   - allergic rhinitis
   - asthma
   - atopic dermatitis
   - candida dermatitis
   - impetigo
   - streptococcal pharyngitis

**Emergency Department**
1. Describe the acute signs and symptoms and emergency management of the accidental or intentional ingestion of acetaminophen, aspirin, alcohol, narcotics, hallucinogens, antidepressants, volatile hydrocarbons and caustics.
2. Elicit a complete history when evaluating an intentional or unintentional ingestion or exposure to a substance including the route of exposure, the timing, the quantity and antecedent events.
3. List the symptoms of and describe the emergency management of shock, respiratory distress, lethargy, apnea, and status epilepticus in pediatric patients.
4. Describe the age-appropriate differential diagnoses and clinical findings of each of the below emergent clinical problems:
   - Airway obstruction/respiratory distress
   - Altered mental status
   - Apnea
   - Ataxia
   - GI bleeding
   - Proptosis
   - Seizures
   - Shock
5. Demonstrate the “ABC” assessment as a means for identifying who requires immediate attention and intervention.
6. Discuss the characteristics of a patient that would necessitate admission to the hospital from the Emergency Department.

**Normal Newborn Nursery**
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. 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
   - abnormalities such as tremulousness, irritability, lethargy, hypoglycemia
   - prematurity
5. Describe how gestational age affects risks of morbidity or mortality in the newborn period.
6. Perform a complete physical exam of a newborn infant within 24 hours of birth.
7. Give parents of a newborn anticipatory guidance for the following issues:
   - benefits of breastfeeding vs formula for the newborn and mother
   - normal bowel and urinary elimination patterns
   - normal neonatal sleep and feeding patterns
   - appropriate car seat use
   - prevention of SIDS
8. Create a discharge and follow-up plan for the newborn based on gestational age, weight, bilirubin level, method of delivery and parental comfort.

**Urgent Care**
1. Perform a focused history and physical examination pertinent to the chief complaint of the patient.
2. Describe the key clinical findings and management of the following conditions:
   - animal bites
   - minor head injury
   - nursemaids elbow
   - sprains and fractures
   - burns
   - lacerations
3. Construct a follow-up plan for the patient upon discharge from the Urgent Care that includes communication with the patient’s primary care physician.
4. Recognize when a patient needs an increase in their level of care to either the Emergency Department or hospital admission.

**Ethics Module**
1. Describe the practical applications of the major ethical principles in the context of medical practice.
2. Identify the core issues involved in an ethical case scenario.
3. Develop a framework in which to analyze ethical issues.
4. List ways to effectively manage an ethical issue encountered in clinical practice.

**Developmental Rounds**
1. Describe the four developmental domains of childhood as defined by the Denver Developmental exam.
2. Describe how abnormal findings on the development screening tools would suggest a diagnosis of developmental delay, autism, pervasive developmental delay, and cognitive disability.
3. Distinguish between age-appropriate behavior, inappropriate or abnormal behavior, and those that suggest severe psychiatric or development illness in children of different ages.
4. Describe the genetic basis and clinical manifestations of the following syndromes, malformations, and associations:
   - common chromosomal abnormalities (e.g. Trisomy 21, Turner syndrome)
   - syndromes due to teratogens (e.g. fetal alcohol syndrome)
   - other common genetic disorders (e.g. cystic fibrosis, sickle cell disease)
   - single malformations with multifactorial etiology (e.g. spina bifida, cleft lip and palate)
5. Describe the use of chromosome studies in the diagnosis of genetic disorders.
6. Discuss the role of genetics in common multifactorial conditions.
7. Use a family history to construct a pedigree.

**Evidence Based Medicine project**
1. Describe the evidence cycle using the 5 A’s.
2. Formulate a clinical question in PICO format from a patient scenario.
3. List types of clinical questions and match the appropriate study design to the type of question.
4. Locate clinical evidence using Pubmed clinical query database
5. Critically appraise available evidence and synthesize into a conclusion that is relevant to the patient scenario
6. Construct a Critically-Appraised Topic (CAT) Handout summarizing the pertinent evidence and your conclusion.

**Required Conferences** (Morning Report, Grand Rounds, Chief Rounds, Problem Conference)
1. Demonstrate a positive attitude and regard for education by demonstrating intellectual curiosity, initiative, dedication to being prepared, flexibility when differences of opinion arise, and reliability.
2. Identify and explore personal strengths, weaknesses (including knowledge gaps) and goals, in general and within specific patient encounters.
3. Describe the impact of stress, fatigue, and personality differences on learning and performance.
4. Demonstrate behaviors that enhance the experience of the entire group of learners.
5. Using individual patient cases as a starting point, list systems issues that occur and potential improvement strategies to improve patient care.
6. Develop an internally motivated process of inquiry and reflection that drives learning with some external guidance.

**Otoscopy Skills Workshop**
1. Correctly use an otoscope and insufflator to examine the tympanic membrane.
2. Describe and locate anatomic components of the middle ear.
3. Describe abnormalities in the appearance of the acutely infected tympanic membrane.
4. Demonstrate correct examination technique while examining the ear of an infant, toddler and older child.
5. List techniques that a practitioner can use to help examine the ear of an uncooperative child.

**Humanism Reflection and Rounds**
1. Create a safe space where positive and negative role modeling, patient care experiences, morally distressing events and students’ reactions can be reflected on and translated into an effective learning experience.
2. Construct an environment that promotes understanding of the chaotic and challenging circumstances of medical school and how a student may overcome this to become compassionate, effective physicians.
3. Define and strive to model humanistic qualities defined as empathy, compassion, altruism, responsibility and respect.

**Required CLIPP Cases**

1. **Case 8-6 day old with jaundice**
   - Recognize a newborn with jaundice
   - Describe bilirubin physiology, including metabolism and toxicity
   - Identify important history items, physical exam findings and laboratory data helpful in evaluating a newborn with jaundice
• Identify treatment options for hyperbilirubinemia in accordance with the American Academy of Pediatrics’ practice guideline “Management of Hyperbilirubinemia in the Healthy Term Newborn”

2. Case 10-Infant with a fever
• List the differential diagnosis of an infant with a fever, specifically conditions that are life threatening
• Describe the work up of a febrile infant based on presentation
• Distinguish the reliability of various methods of collecting a urine sample to diagnose a urinary tract infection
• Choose an empiric antibiotic and route of administration for an infant suspected of having a urinary tract infection
• Recommend appropriate diagnostic imaging of the urinary tract

3. Case 15-4 week old with vomiting
• List the important historical and review of systems questions relevant to an infant with vomiting
• List signs and symptoms of clinical dehydration and be able to calculate an approximate percentage of dehydration
• List the most common causes of vomiting in a young infant
• Recommend tests to determine the cause of vomiting and to ascertain the degree and type of dehydration
• Describe the indications for oral versus parenteral fluid replacement therapy

4. Case 18-2 week old with poor feeding
• Identify the characteristics of a heart murmur that would warrant further evaluation
• Recognize the signs and symptoms of congestive heart failure in an infant
• Understand the anatomy and pathophysiology of a ventricular septal defect

5. Case 19-16 month old with a first seizure
• Identify the causes of acute seizures in children
• Review the diagnostic studies needed in the evaluation of the child with seizures and fever
• Differentiate a simple febrile seizure from a complex febrile seizure
• List the principles of managing a child with a febrile seizure

6. Case 20-7 year old with headaches
• List key features in the history of the child with headaches
• List the elements of a thorough neurologic exam and interpret abnormalities
• Discuss the age appropriate differential diagnosis of headaches in children
• Discuss the differential diagnosis of ataxia in children
• Identify signs and symptoms of increased intracranial pressure
7. Case 22-16 year old with abdominal pain
   • Review the physical examination findings suggestive of an acute abdomen
   • Construct a differential diagnosis for acute abdominal pain in an adolescent
   • Review the presentation of and risk factors for pelvic inflammatory disease

8. Case 23-15 year old with lethargy and fever
   • Describe the different types of shock
   • List the differential diagnosis of a lethargic child
   • Describe the principles of effectively breaking bad news to a patient and a patient’s parents

9. Case 24-2 year old with altered mental status
   • Describe the manifestations, toxicity and basic management of ingestions of lead
   • Identify the environmental sources of lead and discuss the clinical and social importance of lead poisoning

10. Case 25-2 month old with sleep apnea
    • Formulate a differential diagnosis for an infant with apnea or apparent life-threatening event (ALTE)
    • Describe the physical signs and symptoms of shaken baby syndrome
    • List the recommended lab and radiologic studies to order for an infant with suspected physical abuse
    • Describe the ethical and legal responsibility of health care workers to report suspected child abuse

11. Case 26-9 week old with failure to thrive
    • Define failure to thrive in infancy and discuss its causes
    • Explain the mechanism whereby cystic fibrosis causes malnutrition
    • List the most common clinical characteristics of infants who have cystic fibrosis
    • Discuss the basic genetics of cystic fibrosis

12. Case 31-5 year old with puffy eyes
    • Compare and contrast the differential diagnosis for periorbital edema and generalized edema
    • Discuss the differential diagnosis of proteinuria in a child
    • State the laboratory characteristics seen with nephrotic syndrome
    • Discuss the appropriate evaluation and initial management of a child who presents with the first episode of nephrotic syndrome
    • Discuss the prognosis of a child who presents with the first episode of nephrotic syndrome