## CLINICAL PROBLEM SOLVING SKILLS (MS III) (Clinic)

### General Competencies

1. Demonstrate sensitivity to confidentiality, privacy, and modesty, during the medical interview and physical examination.

2. Demonstrate an ability to perform an age-appropriate history and physical examination in children of all ages.

### Specific Skills

#### A. Interviewing Skills

1. Demonstrate an ability to obtain the following information in an age-appropriate and sensitive manner from a child or the accompanying adult:
   - **Past History**
     i. Neonatal history, including:
     ii. Birth weight and approximate gestational age
     iii. Maternal complications, such as extent of prenatal care, infections, exposure to drugs, alcohol, and/or medications
     iv. Problems in the newborn period, such as prematurity, respiratory distress, jaundice, and infections
     v. Immunizations
     vi. Previous hospitalizations
     vii. Surgeries
     viii. Medications and medication allergies
     ix. Chronic medical conditions
     x. Growth and development
     xi. Nutrition
   - **Family History**
     i. Age and health of family members to include acute and chronic medical conditions
     ii. Drug and alcohol abuse
     iii. Construct a family pedigree
   - **Social History**
     i. Household composition and socioeconomic status
     ii. School, caregiver, and peer relationships
     iii. HEADSS assessment
     iv. Environmental and Personal Safety Assessment:
       1. Seat belts and car seats
       2. Bicycle helmets
       3. Firearms in the house
       4. Smoking
       5. Lead exposure
       6. 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**
     i. Interpret the general appearance of the child, including size, morphologic features, development, behaviors, and interaction of the child with the parent and examiner.
     ii. 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.
b. Vital signs  
   i. 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)  
   ii. 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).  

c. Growth (Note: 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 gestational age). This can be in the context of a well child examination or a child with a known disorder.)  
   i. Accurately graph and interpret height (length), weight, and head circumference  
   ii. Calculate, plot, and interpret BMI  
   iii. Describe the usefulness of longitudinal data in assessing growth  

d. Development (Note: All students on the Pediatric Clerkship should see a patient with real or possible (e.g. parental concerns) issues related to development (e.g. delayed or possible delayed language, motor, fine motor, or social adaptive skills.)  
   i. Demonstrate an ability to assess psychosocial, language, physical maturation, and motor development in pediatric patients using appropriate resources (e.g. Bright Futures, the Denver Developmental Standard Test, and HEADSS) Key feature might include the following:  
      1. Newborn/Infant – Disappearance of primitive reflexes; changes in tone and posture; cephalocaudal progression of motor milestones during the first year; stranger anxiety  
      2. Toddler/Child – Separation and autonomy in two- to three-year-olds; sequence of language development; concept of school readiness  
      3. Adolescent – Sequence of physical maturation (e.g. Tanner scales); cognitive development; and assessment of psychosocial and emotional development (e.g. HEADSS)  

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

g. Neck  
   i. Palpate the lymph nodes and describe what anatomic areas they drain  
   ii. Demonstrate maneuvers that test for nuchal rigidity  
   iii. Palpate the thyroid and any neck masses  

h. Chest  
   i. Observe, measure, and interpret the rate, pattern, and effort of breathing  
   ii. Identify normal variations of respiration and signs of respiratory distress (e.g. grunting, flaring, and retraction)  
   iii. Identify normal breath sounds and findings consistent with respiratory pathology such as stridor, wheezing, and asymmetric breath sounds  
   iv. Identify transmitted upper airway sounds  
   v. Observe and describe breast tissue according to developmental stage  

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

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<th>i. Abdomen</th>
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<td>i. Palpate the liver, spleen, and kidneys, and interpret the finding based on the age of the patient</td>
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<td>ii. Assess the abdomen for distention, tenderness, and masses through observation, auscultation, and palpation</td>
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<td>iii. Determine the need for a rectal examination</td>
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<th>j. Genitalia</th>
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<td>i. Describe the difference in appearance of male and female genitalia at different ages and developmental stages</td>
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<td>ii. Palpate the testes and identify genital abnormalities in males, including cryptorchidism</td>
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<td>iii. Recognize genital abnormalities in females including signs of virilization</td>
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<th>k. Extremities</th>
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<td>i. Examine the hips of a newborn for developmental dysplasia of the hip using the Ortolani and Barlow</td>
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<td>ii. Observe and describe the gait of children at different ages</td>
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<td>iii. Recognize pathology, such as joint effusions, signs of trauma, and inflammation</td>
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<th>l. Back</th>
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<tr>
<td>i. Elicit the primitive reflexes that are present at birth and describe how they change as the child develops</td>
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<td>ii. Assess the major developmental milestones of newborns, infants, toddlers, school aged, children, and adolescents</td>
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<th>m. Skin</th>
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<td>i. Describe and assess turgor, perfusion, color, hypo and hyperpigmented lesions, and rashes through observation and palpation</td>
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<td>ii. Identify jaundice, petechiae, purpura, bruising, vesicles, and urticaria</td>
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### c. Therapeutic Skills
1. Calculate a drug dose for a child based on body weight
2. Write a prescription for a common medication (e.g. antibiotics)

### D. Patient Communication Skills
1. Conduct an effective interview by adapting the interview to the visit or chief complaint
3. Demonstrate effective verbal and non-verbal communication skills with children and their parents or families that include:
   i. Establishment of rapport taking into account the patient's age and development stage
   ii. Use of communication techniques that enable the development of a therapeutic alliance being sensitive to the unique social condition and cultural background of the family
   iii. Identification of the primary concerns of the patient and/or family
   iv. Discussion of medical information in terms understandable to patients and families (e.g. avoidance of medical jargon)
4. Correctly identify the need for an interpreter in specific patient-physician interactions

### E. Peer Communication Skills
1. Demonstrate effective oral and written communication with the health care team avoiding jargon and vague terms
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)
### A. 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. Generate an age-appropriate differential diagnosis and initial diagnostic and therapeutic plan for each patient presenting with one of the following symptoms, physical findings, or laboratory findings:
   a. Symptoms
      i. Abdominal pain
      ii. Cough and/or wheeze
      iii. Diarrhea
      iv. Fever and rash
      v. Fever without source
      vi. Headache
      vii. Lethargy or irritability
      viii. Limb or extremity pain
      ix. Otalgia
      x. Rash
      xi. Rhinorrhea
      xii. Seizures
      xiii. Sore throat
      xiv. Vomiting
   b. Physical examination findings
      i. Abdominal mass
      ii. Bruising
      iii. Heart murmur
      iv. Hepatomegaly
      v. Lymphadenopathy
      vi. Petechiae and/or purpura
      vii. Splenomegaly
      viii. Red or wandering eye
      ix. White papillary reflex
   c. Laboratory tests
      i. Anemia
      ii. Hematuria
      iii. Proteinuria
      iv. Positive Mantoux skin test (PPD)

### Processes

1. 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 localized findings

2. 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)

3. Search for relevant information using electronic (or other) data bases and critically appraise the information obtained to make evidence-based decisions.