**Subspecialty Rotation: Orthopedics**

**All Goals and Objectives for this rotation are identical across all PL years**

<table>
<thead>
<tr>
<th>Primary Goals for this Rotation</th>
<th>Competencies</th>
</tr>
</thead>
</table>

**GOAL I: Prevention and Screening (Orthopedics). Understand the pediatrician's role in preventing and screening for orthopedic injury, disease and dysfunction.**

1. Screen for developmental dysplasia of the hip in the newborn nursery and at appropriate health maintenance visits:
   - Use competent physical examination techniques.
   - Use radiographs and ultrasonography appropriately.
   - Educate parents about the rationale for screening and referral.
   - Refer when indicated.
   - Introduce parents to the management options that the orthopedist may offer.

2. Screen for scoliosis on routine examinations (by exam and scoliometer) and refer as needed.

3. Describe school-based scoliosis screening programs and the benefits and inherent limitations of such strategies.

4. Screen for occult dysraphism.

5. Counsel families regarding risks and prevention of orthopedic injuries sustained from play near motor vehicles, lawn mowers, snow blowers, bicycles, snowmobiles, motorbikes and all-terrain vehicles.

6. Advise families about optimal weight and style of backpacks in order to prevent back injury.

**GOAL II: Normal vs. Abnormal (Orthopedics). Differentiate normal variants from pathologic orthopedic conditions.**

1. Distinguish normal variations in foot, knee and leg development.

2. Distinguish normal variations in gait and posture.

3. Order and interpret (with the assistance of the radiologist) common diagnostic imaging procedures when evaluating and managing patients with orthopedic conditions: plain radiographs, body MRI, CT scan, radionuclide bone scans.

**GOAL III: Undifferentiated Signs and Symptoms (Orthopedics). Evaluate and appropriately treat or refer presenting orthopedic signs and symptoms.**
1. Create a strategy to determine if the following presenting signs and symptoms are caused by an orthopedic condition, and if so, treat or refer appropriately:

   a) Limp  
   b) Musculoskeletal pain  
   c) Refusal to walk or gait disturbance  
   d) Refusal to use a limb  
   e) Swollen or painful joint  
   f) Bowed legs or knock-knees  
   g) In-toeing or out-toeing

GOAL IV: Common Conditions Not Referred (Orthopedics). Diagnose and manage common orthopedic conditions that generally do not require referral to an orthopedist.

1. Recognize and manage the following conditions, with appropriate referral for physical therapy services for rehabilitation when indicated:

   a) Calcaneal apophysitis  
   b) Clavicular fracture  
   c) Annular ligament subluxation/nursemaid's elbow  
   d) Elbow medial epicondyle apophysitis/little league elbow  
   e) Erb's palsy or Klumpke's palsy  
   f) Femoral anteversion and retroversion  
   g) Pes planus (flat feet)  
   h) Internal and external tibial torsion  
   i) Low back strain  
   j) Metatarsus adductus  
   k) Muscle strains  
   l) Non-displaced finger and toe fractures  
   m) Tibial tuberosity apophysitis (Osgood-Schlatter disease)  
   n) Overuse syndromes  
   o) Patellofemoral syndrome  
   p) Inversion/eversion ankle sprains  
   q) Thrower's shoulder/epiphysiolysis  
   r) Soft tissue contusion  
   s) Subluxation of the patella or shoulder  
   t) Rotator cuff injury/tendonitis

GOAL V: Conditions Generally Referred (Orthopedics). Recognize, provide initial management, and refer appropriately conditions that usually require orthopedic referral.

1. Recognize, provide initial management of and refer appropriately the following conditions:

   a) Avascular necrosis of the femoral head/Legg-Calve-Perthes disease  
   b) Signs of child abuse  
   c) Cervical spine injury
2. Identify the role and general scope of practice of pediatric orthopedists; recognize situations where children benefit from the skills of specialists training in care of children; and work effectively with these professionals in the care of children with orthopedic conditions.

GOAL VI: Therapeutic Procedures (Orthopedics). Acquire recommended proficiencies in orthopedic therapeutic procedures.

1. Develop the expected level of proficiency in the following procedures:

   a) Immobilization techniques for common fractures and Sprains
   b) Reduction of nursemaid’s elbow
   c) Cervical spine immobilization
   d) Reduction of phalangeal dislocation

GOAL VII: Diagnostic and screening procedures. Describe the following tests or procedures, including how they work and when they should be used; competently perform those commonly used by the pediatrician in practice.

<table>
<thead>
<tr>
<th>Test/Procedure</th>
<th>Core Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiologic interpretation: cervical spine X-ray</td>
<td>K, PC</td>
</tr>
<tr>
<td>Radiologic interpretation: extremity X-ray</td>
<td>K, PC</td>
</tr>
<tr>
<td>Radiologic interpretation: skeletal X-ray (incl. abuse)</td>
<td>K, PC</td>
</tr>
<tr>
<td>Scoliosis, scoliometer</td>
<td>K, PC</td>
</tr>
</tbody>
</table>

Core Competencies:  

- **K** - Medical Knowledge  
- **PC** - Patient Care and Procedural Skills  
- **IPC** - Interpersonal and Communication Skills  
- **P** - Professionalism  
- **PBLI** - Practice-Based Learning and Improvement  
- **SBP** - Systems-Based Practice
### Performance Expectations by Level of Training

<table>
<thead>
<tr>
<th></th>
<th>Beginning</th>
<th>Developing</th>
<th>Accomplished</th>
<th>Competent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical Knowledge</strong></td>
<td>Description of identifiable performance characteristics reflecting a <em>beginning level</em> of performance.</td>
<td>Description of identifiable performance characteristics reflecting <em>development and movement toward mastery</em> of performance.</td>
<td>Description of identifiable performance characteristics reflecting <em>near mastery</em> of performance.</td>
<td>Description of identifiable performance characteristics reflecting the <em>highest level</em> of performance.</td>
</tr>
<tr>
<td><strong>Patient Care and Procedural Skills</strong></td>
<td>PL1</td>
<td>PL1, PL2</td>
<td>PL2, PL3</td>
<td>PL3</td>
</tr>
<tr>
<td><strong>Interpersonal and Communication Skills</strong></td>
<td>PL1</td>
<td>PL1, PL2</td>
<td>PL2, PL3</td>
<td>PL3</td>
</tr>
<tr>
<td><strong>Professionalism</strong></td>
<td></td>
<td></td>
<td></td>
<td>PL1</td>
</tr>
<tr>
<td><strong>Practice-Based Learning and Improvement</strong></td>
<td>PL1</td>
<td>PL1, PL2</td>
<td>PL2, PL3</td>
<td>PL3</td>
</tr>
<tr>
<td><strong>Systems-Based Practice</strong></td>
<td>PL1</td>
<td>PL1, PL2</td>
<td>PL2, PL3</td>
<td>PL3</td>
</tr>
</tbody>
</table>

Milestones assessed on this rotation are:

### Patient Care 1: History

<table>
<thead>
<tr>
<th><strong>Level</strong></th>
<th><strong>Gathers information strictly following a template</strong></th>
<th><strong>Level 2</strong></th>
<th><strong>Level 3</strong></th>
<th><strong>Level 4</strong></th>
<th><strong>Level 5</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Gathers information strictly following a template</td>
<td>Adapts template to filter and prioritize pertinent positives and negatives based on broad diagnostic categories or possible diagnoses</td>
<td>Filters, prioritizes, and synthesizes the history to develop a differential diagnosis in real-time for uncomplicated or typical presentations</td>
<td>Filters, prioritizes, and synthesizes the history to develop a differential diagnosis in real-time for complicated or atypical presentations</td>
<td>Recognizes and probes subtle clues from patients and families; distinguishes nuances among diagnoses to efficiently drive further information gathering</td>
</tr>
</tbody>
</table>

### Patient Care 2: Physical Exam

<table>
<thead>
<tr>
<th><strong>Level</strong></th>
<th><strong>Performs fundamental physical examination</strong></th>
<th><strong>Level 2</strong></th>
<th><strong>Level 3</strong></th>
<th><strong>Level 4</strong></th>
<th><strong>Level 5</strong></th>
</tr>
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<tbody>
<tr>
<td>Level 1</td>
<td>Performs physical examination and identifies variants and abnormal findings</td>
<td>Performs complete or focused physical examination, as indicated, and interprets normal variants and abnormal findings</td>
<td>Performs a physical examination with consistent use of a developmentally appropriate approach</td>
<td>Performs a physical examination using strategies to maximize patient</td>
<td>Performs a physical examination that consistently and</td>
</tr>
<tr>
<td>Strict head-to-toe approach</td>
<td>Adaptation for age and development</td>
<td>Cooperation and comfort</td>
<td>Positively engages the patient</td>
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### Medical Knowledge 1: Clinical Knowledge

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
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<tbody>
<tr>
<td>Demonstrates basic medical knowledge</td>
<td>Links basic medical knowledge to clinical scenarios</td>
<td>Applies medical knowledge to common and typical scenarios to guide patient care</td>
<td>Integrates a breadth of medical knowledge that includes complicated and atypical conditions to guide patient care</td>
<td>Teaches at multiple levels, drawing from a breadth of medical knowledge that spans the continuum of simple to complex problems</td>
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