### Detailed List of Learning Objectives for “Trauma and Paediatric Orthopaedics” Week

#### Hands-on Skills in Physical Examination

<table>
<thead>
<tr>
<th>General Clinical Skills</th>
<th>Minimum requirement</th>
<th>Advanced requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a) History</strong></td>
<td>take a good history with relevance to musculoskeletal complaints &amp; functional impairment in activities of daily living.</td>
<td></td>
</tr>
<tr>
<td><strong>b) General examination</strong></td>
<td>M recognize dwarfism (ricket in particular), and describe trunkal deformity in the frontal plane (scoliosis) and sagittal plane (hyper or hypo-lordosis or kyphosis) recognize Leg Length Discrepancy. test for ligamentous laxity</td>
<td>features of achondroplasia &amp; acromegaly</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper Limb</th>
<th>Minimum requirement</th>
<th>Advanced requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a) Neurological Examination</strong></td>
<td>assess axillary, radial, ulnar and median nerve – motor and sensory.</td>
<td>demonstrate Froment’s sign, intrinsic muscle action, thumb opposition, Horner’s syndrome,</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lower Limb</th>
<th>Minimum requirement</th>
<th>Advanced requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a) Hip Joint</strong></td>
<td>square the pelvis, assess leg length discrepancy, (true and apparent length), tibial Vs femoral shortening. Must be able to palpate the bony landmarks around the hip (anterior and posterior superior iliac spines, pubic tubercle, the greater trochanter and ischial tuberosity). locate femoral pulse. demonstrate Flexion deformity ( Thomas’ test ), psoas stretch test, the FABERE test demonstrate Range of Hip Motion. perform the Trendelenburg’s test.</td>
<td>Bryant's triangle &amp; Nelaton’s line. Ortolani's and Barlow’s tests.</td>
</tr>
<tr>
<td><strong>b) Lower Limb Neurology</strong></td>
<td>test the function of femoral, sciatic, common peroneal and posterior tibial nerve. gait:- normal gait pattern Trendelenburg’s gait antalgic gait foot drop gait recognize hammer toes, claw toes.</td>
<td>identify compensatory muscle action/postural adaptation following paralysis of muscle groups</td>
</tr>
</tbody>
</table>
### a) Cervical Spine & Neck
- Identify deviation in the spine – torticollis, scoliosis, kyphosis, lordosis.
- Palpate spinous processes and check for muscle spasm - Posterior spinal muscles, trapezius, rhomboids, sternomastoid and muscles around the shoulder girdle.
- Demonstrate cervical spinal motion.
- Hoffmann's test, radial reflex, 10 seconds test, myelopathic hand.
- Palpate occipital nerve, cervical roots for tenderness, cervical plexus and brachial plexus for tender spots.

### b) Dorso-lumbar spine
- Identify scoliosis, kyphosis, lordosis and gibbus.
- Demonstrate motion at the lumbar spine.
- Demonstrate the straight leg raising test, femoral stretch test, psoas stretch test.
- Adam’s forward bending test.
- Localize vertebral level – C7-T1, T12-L1, lumbo-sacral junction.

### c) Sacrum and Pelvis
- Demonstrate tests for sacro-iliac joint strain – pelvic compression.
- Localize SI joint and palpate for tenderness.

### d) Spinal Neurological Examination
- Recognize and demonstrate signs of upper and lower motor neuron lesion, cord compression at any level.
- Correlate root values with functional motor segments (e.g. C5 - Shoulder abduction, T-1 small muscles of the hand etc) – both for upper and lower limbs.
- Must be able to perform motor and sensory neurological assessment.

### Common Orthopaedic Complaints

The differential diagnoses and approach to the following musculoskeletal complaints:

1. Musculoskeletal Pain (Acute and chronic)
   a. Neck pain
   b. Shoulder pain
   c. Elbow pain
   d. Wrist pain
   e. Painful small joints of the hand
   f. Back pain
   g. Hip pain
   h. Knee pain
   i. Ankle pain
j. Heel pain

2 Musculoskeletal deformity
   a. Torticollis
   b. Scoliosis
   c. Elbow deformity
   d. Fingers and hand deformity
   e. Knee deformity
   f. Ankle and foot deformity

3 Limping gait

4 “My child is not walking right”

5 “numbness / paraesthesia”

6 motor neurological symptom

7 Skin ulcer

8 a patient admitted with trauma

9 “Lumps and bumps”

Specific Topics under each Subspecialties

Orthopaedic Traumatology

1 To have a more in-depth knowledge of common musculoskeletal injuries including geriatric fractures, multiple trauma and open fractures.

2 Classification and clinical features of fracture including:
   a. Open fractures: the importance of soft tissue vascularity;
   b. Stress fracture
   c. Pathological fracture

3 Fracture healing

4 Principles of definitive management including reduction, immobilization (hold) and rehabilitation

5 Complications of fracture

6 Common fractures and dislocations:
   a. Long bone fractures- femoral /tibial fractures-functional/minimally invasive treatment;
   b. Geriatric fractures- femoral neck or trochanteric fractures
   c. Intra-articular fractures- principles of treatment
   d. Distal radius fracture, Colles’ fracture
   e. Dislocations of shoulder, elbow and hip joints
   f. Monteggia fracture dislocation
   g. Galeazzi fracture dislocation

7 Comprehensive management of patients with fractures
   a. Initial assessment and resuscitation procedures
   b. Initial treatment like pain control, splintage
   c. Investigations
d. Principles and choices of different treatment modalities,
e. Medico-social aspect
f. Rehabilitation :- multi-disciplinary approach with physiotherapist, occupational therapist, orthotist
g. Prevention of complications

8 Compartment syndrome and Volkmann’s contracture

Paediatric Orthopaedics

1 Adolescent Idiopathic Scoliosis
2 DDH
3 Slipped capital femoral epiphysis
4 Transient synovitis of hip
5 Idiopathic clubfoot
6 Chronic juvenile arthritis
7 Children’s injury and fracture
   a. Epiphyseal injury
   b. Non-accidental injury
   c. Supracondylar fracture of distal humerus
   d. Pull elbow
8 evaluation of the complaint: “my child is not walking right”
   a. Intoeing
   b. Outtoeing
   c. Genu valgus
   d. Genu varus
9 Neuromuscular disorder
   a. Cerebral palsy
   b. Spina bifida

Miscellaneous

Metabolic bone disease
1. Osteoporosis
2. Ricket and osteomalacia
3. Hyperparathyroidism
4. Renal osteodystrophy
5. Paget’s disease
6. Neurofibromatosis
7. Marfan’s syndrome
8. Achondroplasia
9. Osteogenesis imperfecta