Rotation-Specific Objectives for Resident Education

<table>
<thead>
<tr>
<th>Rotation:</th>
<th>Trauma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident Year-In-Training:</td>
<td>PGY1, PGY2, PGY5</td>
</tr>
</tbody>
</table>

Attending Physicians

1. Darin Friess, M.D.
   Orthopedic Surgeon, ABOS Board Certified
   Fellowship: Trauma

2. Adam Mirarchi, M.D.
   Orthopaedic Surgeon, ABOS Board Certified
   Fellowship: Hand & Upper Extremity Surgery
   Certificate of Added Qualification (CAQ) Hand

3. James Meeker, M.D.
   Orthopaedic Surgeon, ABOS Board Eligible
   Fellowship: Foot and Ankle Surgery, Trauma

Primary Objective

Surgical and medical training related to orthopedic trauma. This is to include, but not be limited to, the initial work-up and triage of patients with acute injuries from trauma and post trauma sequelae. At the end of the rotation, the trainee will be able to conduct a history and physical in the initial evaluation of urgent orthopaedic trauma and manage these patients on the ward in the peri-operative period. In addition, the trainee will understand post trauma and post operative sequelae including nonunion and malunion of fractures.

Educational Philosophy

The principal goal of the orthopaedic trauma service at OHSU is to familiarize orthopaedic residents with the management of orthopaedic injuries from acute trauma. Most often this trauma is secondary to motor vehicle crashes and gunshot wounds. An understanding of which injuries need surgical management and an understanding of appropriate nonoperative management of other injuries is mandatory. Furthermore, the resident should understand varying methods of failure (infection, nonunion, malunion, loosening, etc) and appropriate algorithms of management.
Rotation Expectations and Opportunities

The Orthopaedic Residents will work primarily with a Traumatologist. They will also spend time with an upper extremity surgeon and a foot and ankle surgeon. The PGY1 is primarily responsible for ED and floor consults from 6:30am to 6pm, going to the OR if time allows. One PGY2 is on night float, Sunday night through Thursday night 6pm-6:30am. The other PGY2 and the PGY5 will be primarily in the OR or in clinic. On average, there will be 3-4 OR days per week, 1 day of clinic per week, and ½ day of educational activity / self study (preparing for conferences, review of upcoming cases, independent study).

PGY2 and PGY5
Monday: OR with Dr. Friess
Tuesday: OR with Dr. Friess
Wednesday: OR with Dr. Mirarchi
Thursday: OR with Dr. Friess
Friday: Clinic with Dr. Friess or OR with Dr. Meeker

Every morning at 6am, there is a fracture rounds conference. The consults from the day before are presented followed by a discussion of appropriate treatment plan. Furthermore, there is a weekly topic conference at 7am on Thursdays. This conference focuses on diagnosis and treatment plans of common fracture patterns which are also listed in the section regarding medical knowledge.

Generalized Rotation Goals & Mechanisms

Didactic
- A weekly conference on Thursday mornings involving the residents / attendings.
- Pre-, mid- and post-rotation meetings to assess expectations and progress of residents.
- Journal Club 2-3x / year to discuss important literature on trauma. This journal club is combined with the Legacy Emanuel orthopaedic trauma group.

Patient Care
- Manage all aspects of acute trauma seen in patients of all ages. This includes appropriate non-operative treatment modalities along with varying surgical treatment options. The resident is responsible for learning and understanding indications of operative fixation for fractures.
- Attain competence in performing a comprehensive evaluation and examination of new patients seen through the ED. Comprehensive and concise history, physical examination, and diagnostic test ordering and interpretation are emphasized.
- Thorough and concise management of post-operative patients during their inpatient stay.

Medical Knowledge
- For each location discussed (list below), the resident should understand the relevant fracture pattern, mechanism of injury, anatomy, and appropriate history and physical exam. Discussion from staff will focus on a case – based learning approach as patients
are treated. Questions and answers will most often be covered by simple review
textbooks supplemented by the reading list below.

- Clavicle
- Proximal humerus
- Humeral shaft
- Distal humerus
- Fractures about the elbow (terrible triad, radial head, olecranon)
- Forearm shaft
- Distal radius
- Scaphoid, carpal instability, phalangeal, metacarpal
- Pelvic ring
- Acetabulum
- Proximal femur
- Femoral shaft
- Distal femur
- Tibial plateau
- Tibial shaft
- Distal tibia/ pilon
- Ankle
- Calcaneus, talus
- Lisfranc, Metatarsal

- For each location discussed, the resident will list the relevant radiographic classification
  scheme for the fracture.

**Practice-Based Learning and Improvement**

- By the end of the rotation, each PGY1, PGY2 and PGY5 resident should be comfortable
  and confident with the following non-operative skills:
  1. clinical assessment
  2. Upper Extremity Exam
  3. Lower Extremity Exam
  4. Evaluation and comprehension of x-rays for each fracture pattern
  5. An understanding of the psychosocial issues that are relative to trauma
  6. Basic procedures performed in the ED with direct supervision:
     - closed reductions of fractures and dislocations: distal radius, ankle, shoulder
     and elbow dislocations
     - arthograms and injections of knee, ankle, wrist, elbow, shoulder
     - traction pin placement in femur and tibia
  7. In addition, the PGY2 resident should be comfortable without direct supervision
     performing the procedures listed above. They should also be familiar with closed
     reductions of hip dislocations and fracture-dislocations
  8. In addition, the PGY5 resident should be comfortable with evaluation and
     comprehension of CT and MRI for each fracture pattern. The PGY5 resident should
     also be comfortable in the counseling of nonoperative management of various
     fracture patterns.
- Participate as an assistant in surgical procedures and as primary surgeon where level of skill makes this appropriate. Develop the planning and technical skills to the level that participation as primary surgeon is appropriate on most surgical cases.
- Demonstrate ability to effectively perform preoperative planning for surgical procedures, even complex cases.
- Set up an operating room for surgery, including surgical instruments, implants, patient positioning, need for fluoroscopy, etc.
- Understand and direct the role/limitations of Operating personnel: Scrubs, Nurses, Charge nurse, Company representatives, Schedulers, and Surgeons.
- Identify and clearly communicate the indication for every operation prior to scrubbing, to the attending and students as indicated.
- Know the algorithm for several techniques for each indication:
  - Be prepared in advance to complete the operation
  - Understand the choices for anesthesia and indications
  - Be ready to describe how to change course mid-operation, if needed
- Direct and perform the following procedures at the PGY2 level:
  1. safe positioning of the patient in surgery
  2. identification and initial management of postoperative complications
  3. approach and fixation of basic fracture patterns including hip, ankle, and long bone shaft, and distal radius.
  4. Placement of external fixation
- Direct and perform the following procedures at the PGY5 level (in addition to those listed above):
  5. analysis and management of postoperative complications
  6. approach and fixation of periarticular fractures
  7. approach to acetabulum and pelvic ring

**Professionalism**

- Learn to organize patient clinic practice while participating in more advance patient evaluation and management activities.
- Actively and competently participate in supervising the educational and clinical activities of the junior level residents (for PGY5s) or medical students (for PGY3s and 5s).
- Model appropriate professional values and behaviors for peers, faculty, and staff.
- Mature in the development of patient care, considering the cost, quality, outcomes, and impact on patient and healthcare system as essential variables in the equation.
- Demonstrate ability to engage in supportive, clear, and compassionate communication with patients and family members.
- Answer requests in a timely, cordial manner.

**Interpersonal and Communication Skills**

- The resident is expected on this rotation and all others to interact as a professional and team member with all the other staff and services within the hospital.
- The demeanor and tone of the resident in both verbal and nonverbal communication is expected to be exemplary.
• The same communication skills above are expected to be used with the patients and families.

**Systems Based Practice**

• Develop methods of analyzing complex data and prioritizing principles and issues to solve complex and ill-defined problems related to orthopaedic patient care.
• Demonstrate appropriate judgment, particularly as related to indications for surgical treatment of patients, non-operative treatment options and algorithms.
• Understand the daily business of Medicine/Orthopedic Surgery.
• Become facile with billing and coding issues.
• Manage the patient and health system to manage a disease/injury in the context of the biopsychosocial model.

**Literature Resources**

**Pelvic ring injury**


**Acetabular fracture**


**Hip dislocation**


**Femoral head fracture**


**Hip fracture-low energy**


**Hip fracture-high energy**


**Femoral neck fracture biomechanics**


**Femur fracture**


Distal femur fracture


Patella fracture


Knee dislocation


**Tibial plateau fracture**


**Tibial shaft fracture**


**Limb salvage**


**Tibial plafond fracture**


**Ankle fracture**


**Talus fracture**


**Lisfranc fracture**


**Calcaneus fracture**


Shoulder injuries


Proximal humerus fracture


Humerus shaft fracture


**Distal humerus fracture**


**Fractures and injuries about the elbow**


**Forearm fractures**


**Wrist fractures**


Open fracture management

