

Department of Orthopaedics and Rehabilitation

Rotation-Specific Objectives for Resident Education	
Rotation:	Upper Extremity & Hand
Resident Year-In-Training:	PGY3 & PGY5

Attending Physicians

1. Robert Orfaly, M.D., FRCS(C)

Orthopaedic Surgeon, ABOS Board Certified

Fellowships:

Hand & Upper Extremity Surgery

Shoulder Surgery

2. Adam Mirarchi, M.D.

Orthopaedic Surgeon, ABOS Board Certified

Fellowship: Hand & Upper Extremity Surgery

Certificate of Added Qualification (CAQ) Hand

Primary Objective

This rotation is focused on the comprehensive orthopaedic care of upper extremity (U/E) disorders. This includes didactic and clinical learning of upper extremity trauma management, arthritis, post-traumatic deformity and soft tissue disorders.

Educational Philosophy

The principal goal of the upper extremity service is to familiarize orthopaedic residents with the management of upper extremity trauma, development, and degenerative conditions.

The junior resident rotation should focus on ensuring expertise in U/E anatomy, pathological conditions and patient evaluation, including special testing for all common U/E diagnoses. The appropriate use and interpretation of ancillary tests should also be understood. The resident should be able to present a comprehensive list of reasonable treatment options for common U/E conditions and a systematic approach to the evaluation of complex cases. The inherent risks and benefits of both nonoperative and operative treatment options should be well understood and the resident should be able to communicate these effectively to patients.

At the PGY-5 level, this process builds on the skills gained during the prior PGY-3 rotation. Not only will the PGY-5 accurately identify upper extremity pathology, but they also will be expected to weigh the potential risks and benefits of various treatment options and make a

recommendation of a treatment plan. This recommendation should include a cost effective approach to investigative procedures, including laboratory and radiographic studies, as well as identification of the most beneficial and cost effective treatment for each patient. Treatment modalities should include the use, where appropriate, of medications/injections, physical therapy, rehabilitation and surgery. The goal is to educate the PGY-5 resident to where he/she is able to synthesize information about a patient's symptoms, examination findings, and diagnostic study results (either in the emergency room or outpatient clinic) to identify the treatment alternatives and relevant risks and benefits of each option. The PGY-5 resident should be able to either assist in or perform the surgical treatment of the patient, and manage the patient through the peri-operative period.

The experience on this rotation is supplemented by several other experiences in the residency program. Specifically these experiences include a rotation on Physical Medicine & Rehabilitation in the PGY1 year. This includes education in the indications and interpretation of nerve conduction studies as they relate to upper extremity disorders. The PGY2 and PGY4 rotate through the pediatric services at the Shriner's hospital and OHSU. During this time, they will be exposed to pediatric hand conditions. The rotation at Legacy Emanuel hospital, during PGY2 and PGY4 years, includes experience in hand trauma, including microsurgical techniques, with Dr. Steven Madey. Also included is upper extremity trauma exposure gained throughout the residency program, including rotations on the Trauma service and during trauma call.

Rotational Expectations and Opportunities

The Orthopaedic Residents will work primarily with two full-time University based Upper Extremity surgeons. Two residents, a pgy3 and pgy5, will spend 10 weeks dedicated to the service.

PGY5 Schedule

Monday: Clinic Dr. Orfaly

Tuesday: OR with Dr. Orfaly-CHH or Clinic with Dr. Mirarchi (alternates each week)

Wednesday: OR with Dr. Orfaly-South

Thursday: Independent Study or Clinic with Dr. Orfaly

Friday: OR with Dr. Orfaly-South or OR with Dr. Mirarchi-CHH (one week with Dr. Mirarchi on Tuesday/Friday and the next week with Dr. Orfaly on Tuesday/Friday)

PGY3 Schedule

Monday: Microvascular lab with Dr. Mirarchi

Tuesday: Clinic with Dr. Mirarchi or OR with Dr. Orfaly-CHH (alternates each week)

Wednesday: OR with Dr. Mirarchi-South trauma room

Thursday: Clinic with Dr. Orfaly

Friday: OR with Dr. Orfaly-South or OR with Dr. Mirarchi-CHH (one week with Dr. Mirarchi on Tuesday/Friday and the next week with Dr. Orfaly on Tuesday/Friday)

Every Thursday, at 6:45am, there is a hand conference. This is a topic based conference held jointly with the plastic surgery department.

Residents participate as 1st assist with Dr. Orfaly. They are 1st assist with Dr. Mirarchi most of the time, except for Friday when the fellow is present. For the cases that are PGY3 appropriate, they are the 1st assist. For the more complex cases, the PGY3 is the second assist while the fellow is 1st assist.

Residents are expected to prepare for each case. This includes having knowledge of the patient's history and exam specific to their upper extremity condition, pertinent medical information, knowledge of imaging modalities, and other information as pertinent.

Residents are expected to direct and supervise learners including medical students, PA students, surgical staff and clinical staff.

Generalized Rotation Goals & Mechanisms

Didactic

- A weekly conference on Thursday mornings.
- Pre-, mid- and post-rotation meetings to assess expectations and progress of residents.
- Journal Club 2-3x / year to discuss important literature on hand, elbow, and shoulder.

Patient Care

- The resident is also expected to understand the role of various modalities of nonoperative and postoperative rehabilitation. This includes physician-directed prescriptions of home exercise and activity-modification. The use of casts, splints and braces should be understood. Residents should also develop an in-depth understanding of the roles of physical and certified hand therapists as part of the treatment team. Time will be allowed for the resident to shadow the therapists to observe the treatment modalities they provide. The resident will also acquire skill in clinic injection techniques for the shoulder, elbow, and hand.
- Attain competence in performing a comprehensive evaluation and examination of new and return patients in clinic. Comprehensive and concise history, physical examination, and diagnostic test ordering and interpretation are emphasized.
- Thorough and concise management of post-operative patients both inpatient and outpatient.

Medical Knowledge

At the conclusion of a rotation, each resident is expected to have a basic understanding of:

- Case based learning, focusing on topically driven reading.
- A basic understanding of the following conditions: nerve entrapment syndromes (including median, ulnar, radial nerves), rotator cuff injury, hand, elbow, and shoulder arthritis, cuff arthropathy, traumatic finger and hand amputations and replants, tendon injuries, nerve injuries, tendon and nerve transfers, contractures, instability of wrist, elbow, and shoulder, fractures in the upper extremity including phalangeal, metacarpal, scaphoid, distal radius, olecranon, radial head, proximal humerus.
- Medical management of shoulder, elbow, and hand arthritis prior to surgical intervention.

- Management, from the acute inpatient setting to the outpatient setting, of common upper extremity trauma including fractures and dislocations.
- Preparation for surgical care by learning surgical approaches, implant options, and reconstruction in the setting of bone loss or fracture.
- Prepare patients for operative and non-operative management and empathetically guide them through the recovery process of each.
- Familiarize oneself with current standards of care by reading Orthopedic Knowledge Update, Green's Hand Surgery, current literature, weekly case presentations, and the below listed literature resources.
- Be thoroughly knowledgeable of basic textbook information and current journal articles on orthopaedic specialties pertinent to this rotation.
- Read and understand the key orthopaedic literature on the orthopaedic specialties pertinent to this rotation.
- Understand the role of Upper Extremity Surgeon as part of the health care team and our relationship to the working environment with; Nurses, PA's, PT's, OT's, Orthotists, Patients & Families.

Practice-Based Learning and Improvement

- By the end of the rotation, each PGY3 and PGY5 resident should be comfortable and confident with the following non-operative skills:
 1. Clinical assessment of various disorders including nerve entrapment syndromes (including median, ulnar, radial nerves), rotator cuff injury, hand, elbow, and shoulder arthritis, cuff arthropathy, upper extremity trauma, traumatic finger and hand amputations and replants, tendon injuries, nerve injuries, tendon and nerve transfers, contractures, instability of wrist, elbow, and shoulder.
 2. Evaluation and comprehension of x-rays, CT scans, and MRI studies
- 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 PGY3 level:
 1. Safe positioning of the patient in surgery
 2. Identification and initial management of postoperative complications
 3. Carpal tunnel release
 4. Trigger finger release

5. Reduction and fixation of upper extremity trauma including olecranon, distal radius, finger, and thumb fractures.
6. Wrist arthroscopy
- Direct and perform the following procedures at the PGY5 level (including those listed above):
 1. Reduction and fixation of upper extremity trauma including proximal humerus, elbow terrible triad.
 2. Total shoulder arthroplasty and reverse total shoulder arthroplasty
 3. Shoulder arthroscopy including subacromial decompression
 4. Flexor and extensor tendon repair
 5. CMC joint arthroplasty
 6. Familiarity with advance arthroscopic techniques, such as Bankart or rotator cuff repairs, triangular fibrocartilage complex tears or elbow arthroscopy, should be obtained though mastery of these skills is not expected.
 7. Familiarity with advanced concepts such as surgical management of Dupuytren's disease, finger joint arthroplasty, nerve repair, and carpal fusions is expected and performance of these procedures with faculty assistance can be expected.

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

Orthopaedic Knowledge Update (OKU)

Shoulder and Elbow and Hand Surgery Update

The Shoulder by Charles A. Rockwood and Frederick Matsen

Green's Operative Hand Surgery

Journal of the American Academy of Orthopedic Surgeons