

**HAND & UPPER EXTREMITY ROTATION
PGY 4
ROTATION SPECIFIC OBJECTIVES (RSO)
DEPARTMENT OF ORTHOPAEDICS AND REHABILITATION
UNIVERSITY OF MASSACHUSETTS**

This RSO has been developed to outline the overall objectives of the Hand & Upper Extremity Rotation at UMass. This document delineates what the resident is expected to experience during the rotation and what skills are to be mastered. It also serves as a guide to the Faculty, specifying what the resident is expected to be exposed to while on the rotation. The resident should review this RSO before the start of the rotation to set the tone and clarify expectations of the rotation. It is imperative that the resident meet with the faculty mid rotation to go over the RSO. Deficiencies in what has been experienced up to that point can be addressed and the remainder of the rotation maximized. Readings and a bibliography are included to aid in the overall education while on the rotation as well as specific preparation for surgery, clinic and conferences.

It is important that the educational experience of the resident while on the Hand Service incorporates the concepts of the 6 Core Competencies as outlined by the ACGME. The end of rotation evaluation will assess the resident's performance within these competencies. During this rotation the resident will:

INTERPERSONAL AND COMMUNICATION SKILLS

The resident will at all times demonstrate behavior that is beyond reproach. Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families and professional associates. Residents are expected to:

- Demonstrates honest, open, civil, and effective communication with patients, staff and colleagues (medical students, residents attendings and allied health personnel)
- Create and sustain a therapeutic and ethically sound relationship with patients
- Use effective listening skills
- Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
- Work effectively with others as a member or leader of a health care team or other professional group

PRACTICE-BASED LEARNING AND IMPROVEMENT

Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices. Residents are expected to:

- Analyze practice experience and perform practice based improvement activities using a systematic methodology.

- Locate, appraise, and assimilate evidence from scientific studies related to their patients health problems.
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
- Use information technology to manage information, access on-line medical information, and support their own education.
- Facilitate the learning of students and other health care professionals.

PROFESSIONALISM

Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Residents are expected to:

- Demonstrate respect, compassion, and integrity.
- A responsiveness to the needs of patients and society that supersedes self interest.
- Accountability to patients, society, and the profession.
- Commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to:
 - Provision or withholding of clinical care
 - Confidentiality of patient information as outlined by HIPPA
 - Informed consent
 - Business practices
- Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities.

SYSTEM-BASED PRACTICE

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Residents are expected to:

- Understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice.
- Know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources.
- Practice cost effective health care and resource allocation that does not compromise quality of care.
- Advocate for quality patient care and assist patients in dealing with system complexities.
- Know how to partner with health care managers and providers to assess, coordinate, and improve health care and know how these activities can affect system performance.

MEDICAL KNOWLEDGE

Residents must demonstrate knowledge about established and evolving biomedical, clinical and cognate (e.g. epidemiological) sciences and the application of this knowledge to patient care. Residents are expected to:

- Demonstrate an investigatory and analytical thinking approach to clinical situations.
- Know and apply the basic and clinically supportive sciences which are appropriate to hand and upper extremity surgery.

PATIENT CARE

Residents must be able to provide patient care that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health. Residents are expected to:

- Communicate effectively and demonstrate care and respectful behavior when interacting with patients and their families.
- Gather essential and accurate information about the patient.
- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up to date scientific evidence and clinical judgment.
- Develop and carry out patient management plans, counsel and educate patients and their families.
- Use information technology to support patient care decisions and patient education.
- Perform competently all invasive procedures considered essential in hand and upper extremity surgery.
- Provide health care services aimed at preventing health problems or maintaining health work with health care professionals, including those from other disciplines, to provide patient focused care.

GENERAL PATIENT ASSESSMENT SKILLS

In a patient presenting with a hand/upper extremity problem the resident will demonstrate competency in the following skills:

- 1) Obtaining a focused patient history
- 2) Perform an appropriate physical examination
- 3) Demonstrate an understanding of the examination of the hand, wrist, forearm and elbow
- 4) Order and interpret relevant x-rays
 - a) A-P/Lat. Hand
 - b) A-P/Lat. Wrist
 - c) A-P/Lat. Elbow

- d) measurement of intercarpal on the lat. wrist x-ray
- e) interpret the scaphoid view of the wrist
- f) interpret the carpal tunnel view
- 5) Know the indications and basic interpretation of the following imaging studies:
 - a) CT Scan
 - b) MRI
 - c) Bone Scan
 - d) Arthrography

For the following Hand & Upper Extremity conditions and procedures, the resident will be able to:

- arrive at an accurate diagnosis
- perform a relevant examination
- order appropriate imaging studies
- outline etiologies for the condition
- outline the natural history of the condition
- describe non-operative treatments available
- describe operative treatment options
- describe complications of the treatments
- describe the prognosis

For the surgical/psychomotor portion of this list the resident will demonstrate:

- radiographic analysis
- outline the operative procedure
- identify the surgical approach
- identify required equipment
- describe potential pitfalls/complications
- demonstrate competence in performing the task
- perform the procedure

Also the resident will demonstrate:

- proper use of the tourniquet
- precise suture material choices
- precise dissection, manipulation and suturing of tissues
- competence in local and peripheral nerve blocks
- knowledge of indications for and the administration of regional anesthesia
- proper post op dressings
- short arm casts and splints, sugar tong splint, long arm splinted and cast

CONDITIONS AND PROCEDURES

1. Traumatic and elective amputations

2. PIP/DIP Arthrodesis
3. Intercarpal arthrodesis
4. Complete wrist fusion
5. MCP/PIP joint arthroplasty
6. Total wrist arthroplasty
7. Total elbow arthroplasty
8. Wrist arthroscopy
9. Tendon transfer – median, ulnar, radial, high, low & combination
10. Syndactaly
11. Polydactaly
12. Dupuytren's contracture
13. Intrinsic contracture
14. PIP joint contracture and release
15. Forearm/hand compartment syndrome – diagnosis and treatment
16. ORIF metacarpal/phalangeal fractures
17. Distal radius fractures diagnosis/treatment and treatment of closed reduction, external fixation, ORIF
18. Scaphoid fractures assessment/ORIF/non-union treatment/per cutaneous screw placement
19. Peri-lunate dissociation
20. Lunate dislocation
21. Chronic wrist instability – Blatt Capsulodesis
22. TFCC pathology – ulnar impaction syndrome, open & arthroscopic repair
23. Peripheral nerve injury and repair
24. Basic microsurgery techniques
25. Treatment of volar plate PIP joint injuries
26. Hand infections
27. S.T.S.G.
28. F.T.S.G.
29. Repair of distal tip and matrix injuries
30. Carpal Tunnel Syndrome – open and endoscopic CTR
31. Cubital Tunnel Syndrome – ulnar nerve decompression, in situ, anterior transportation
32. Radial tunnel surgery
33. Surgical treatment of neuromas
34. Flexor tendon injury and repair Zones I-V
35. Flexor tendon 2 stage reconstruction
36. Extensor tendon injury and repair
37. Lateral and medial epicondylitis
38. Treatment of the burn and frostbite hand
39. Thumb MCP joint ulnar collateral ligament injuries acute and chronic
40. Dorsal and volar Ganglion Cysts
41. Thumb basal joint DJD – diagnosis, close treatment and surgery
42. DeQuervain's Syndrome
43. Intersection Syndrome
44. Stenosing tenosynovitis (Trigger) thumb and digits – adult and peds

45. Mucous Cysts
46. Giant cell tumor of tendon sheath
47. Treatment and diagnosis of acute and chronic Mallet Finger
48. Treatment and diagnosis of acute and chronic Boutonniere Deformity
49. Fracture BBFA – pediatric-closed, adult-ORIF
50. ORIF radial head fractures
51. ORIF distal humerus fractures
52. ORIF humeral diaphysis
53. ORIF olecranon
54. Elbow contracture release
55. Diagnosis and treatment of chronic elbow instability
56. Diagnosis and treatment of instability and/or DJD of the DRUJ
57. Diagnosis and treatment of lunar impaction syndrome

The resident will also be expected to demonstrate the principles of assessing and treating General Hand and Upper Extremity problems and:

- demonstrate an understanding of the underlying pathophysiology
- demonstrate how this condition may affect specific Hand and Upper Extremity problems
- demonstrate an understanding of appropriate treatment principles
- demonstrate appropriate referral decisions

GENERAL HAND & UPPER EXTREMITY PROBLEMS

- Rheumatoid Arthritis
- Osteoarthritis
- Diabetes
- Compressive Neuropathies
- Spinal Cord Injury
- Brachial Plexus Injury
- RSD/Chronic Pain Syndrome
- Workers Compensation issues
- Poly trauma
- Cerebral Palsy UE issues
- Stroke – upper extremity ramifications
- Osteoporosis
- Infectious Diseases

REFERENCES AND SUGGESTED READINGS

The following list of references is meant for additional reading and clinic, conference and surgical case preparation. Although not exhaustive, it is an extensive list that will cover diagnosis and treatment of most of the entities you will encounter. This list will be regularly updated.

EVALUATION

Evaluation is essential not only for your performance appraisal but for continuing improvement of the rotation. Besides our evaluation of you we need our evaluation of us. Feedback is needed for growth and improvement. We will meet with you at the beginning of the rotation to go over this document and clarify expectations. The mid rotation meeting will give both sides an assessment where we are in the rotation, what we can improve on, what we need to focus on for the balance of the rotation. Experiences missed are difficult to recapture after the rotation is over. Mid rotation assessment of the resident experience can minimize lost chances and maximize the experience.