

**RIVERSIDE UNIVERSITY HEALTH SYSTEM - MEDICAL CENTER  
ORTHOPAEDIC SURGERY RESIDENCY PROGRAM**

**Hand/Upper Extremity (PGY-4)  
(Duration: Two Months)**

**Supervising Faculty: Dr. Roy Caputo**

The overall goal of the PGY-4 Hand/Upper Extremity rotation is to develop an advancing understanding of the functional anatomy of the upper extremity as well as to gain skills for evaluating and treating patients with disorders of the upper extremity. This is to build upon PGY-3 Hand/Upper Extremity experience advanced decision making and technical skills will be taught such as treating advance composite wounds including microsurgical techniques. Faculty supervision will advance from direct supervision, to indirect supervision and in some cases oversight as resident ability progresses.

**Patient Care**

**Goals**

The orthopaedic resident must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health programs and the promotion of health.

**Objectives**

- Demonstrate competence in the pre-admission care, hospital care, operative care and follow up care (including rehabilitation) of patients.
- Demonstrate competence in their ability to gather essential and accurate information about their patients
- Demonstrate competence in their ability to make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date orthopaedic scientific evidence, and clinical judgment.
- Demonstrate competence in their ability to develop and carry out patient management plans
- Demonstrate competence in their ability to provide health care services aimed at preventing health problems or maintaining health.
- Demonstrate competence in the diagnosis and management of adult and pediatric orthopaedic disorders
- Variety of adult and pediatric hand surgery patients
- Graduated and progressive patient care responsibilities
- Development of a treatment plan to manage patients with traumatic, congenital and developmental, infectious, metabolic, degenerative, neurologic and rheumatologic disorders
- Recuperative and rehabilitation techniques, including the use of physical and occupational therapy
- Judgment and technical capability to achieve satisfactory surgical and nonsurgical results in the following areas
  - Skin repair including grafts and flaps
  - Fingertip injuries
  - Tendon repair including flexor tendon repair and graft, implantation of tendon spacer, extensor tendon repair and tenolysis/tenodesis
  - Tendon transfer and tendon balancing

- Nerve repair, including major and digital, graft, neurolysis, surgical treatment of neuroma, transpositions and decompressions
- Management of fractures and dislocations, including phalangeal or metacarpal with and without internal fixation; wrist, radius and ulna with and without internal fixation, and injuries to joint ligaments
- Bone grafts
- Joint and tendon sheath repairs including release of contractures, synovectomy, arthrodesis, trigger finger release, and stiff joints that result from rheumatoid or other injury
- Arthroplasty with or without implants for management of hand, wrist, elbow and shoulder disorders
- Tumors, benign and malignant
- Dupuytren's contracture
- Replantation, revascularization
- Amputations
- Fasciotomy, deep incision and drainage for infection, and wound debridement
- Congenital deformities including syndactyly and others
- Management of upper extremity vascular disorders and insufficiencies
- Foreign body, implant removal
- Thermal injuries
- Arthroscopy
- Upper extremity pain management

Example: Carpal Tunnel, Patient Care Goals and Objectives:

- Evaluates other sites of MN compression (e.g., pronator syndrome, cervical radiculopathy)
- Interprets electrodiagnostic tests
- Performs Carpal Tunnel Release (CTR) (e.g., open or endoscopic)
- Capable of treating simple complications (e.g., infection, wound healing)
- Capable of performing complex postoperative management (e.g., worsening numbness, worsening pain, additional radiating symptoms)

## **Medical Knowledge**

### **Goals**

The orthopaedic resident must gain medical knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.

### **Objectives**

- Demonstrate expertise in the knowledge of those areas appropriate for an orthopaedic surgeon
- Demonstrate investigatory and analytical thinking approach to clinical situations
- Education in surgical design, surgical diagnosis, embryology, surgical and artistic anatomy, surgical physiology and pathology, pharmacology, wound healing, microbiology, adjunctive oncologic therapy, biomechanics, rehabilitation, and surgical instrumentation.
- An understanding of prosthetics and orthotics pertaining to disorders of the upper extremity and amputation.

- Possess an understanding of the scientific basis of evaluation, diagnosis and treatment of commonly encountered hand surgical conditions including:
  - carpal tunnel syndrome
  - trigger finger, tendonitis
  - de Quervain's, ECU, FCR tendinitis
  - thumb basal joint arthritis (describe the basic management of osteoarthritis of the hand and the radiographic findings, and understand the pathophysiology of arthritis in the hand including osteoarthritis, rheumatoid arthritis, and posttraumatic arthritis)
  - animal and human bites
  - flexor and extensor injuries (classify and describe treatment for tendon lacerations, describe suture techniques for flexor tendon repair, and describe the basic steps of tendon healing)
  - infections of the fingertip, tendon sheaths and deep spaces, recognize and list the classic signs of acute suppurative tenosynovitis
  - fingertip injuries and amputations
  - nail bed injuries
  - phalangeal and metacarpal fractures (describe an algorithm for management, and understand complications and risks associated with treatment)
  - ganglia of the hand and wrist
  - mallet finger injuries
  - sprains and dislocations of the CMC, MCP and PIP joints (classify and describe treatment for joint injuries, static carpal instability, and be familiar with the classification and radiographic findings)
  - cubital tunnel syndrome, chronic carpal tunnel syndrome including tendon transfers and indication for arthrodesis (understand the principles of tendon transfer, and describe commonly utilized opponensplasty procedures)
  - describe a classification of flaps (random pattern, axial pattern, island, free. local regional, distant) and cite common examples of each
  - Develop and discuss a differential diagnosis of hand pathology

Example: Carpal Tunnel, Medical Knowledge Goals and Objectives:

- Demonstrates knowledge of current literature and alternatives to surgery
- Understands the capabilities and limitations of electrodiagnostic studies
- Understands influence of comorbidities
- Demonstrates knowledge of complications of surgical management (e.g., location of median nerve [MN] with respect to superficial arch, recurrent motor branch, palmar cutaneous branch, Guyon's canal)
- Understands controversies within field (e.g., endoscopic versus open, use of electrodiagnostics)

### **Practice-based Learning and Improvement**

#### **Goals**

The orthopaedic resident must demonstrate the ability to investigate and evaluate his/her care of orthopaedic patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning

#### **Objectives**

- Identify strengths, deficiencies, and limits in one's knowledge and expertise
- Set learning and improvement goals
- Identify and perform appropriate learning activities
- Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement
- Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.
- Use information technology to optimize learning
- Participate in the education of patients, families, students, residents and other health professionals
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
- Acknowledges gaps in personal knowledge and expertise, and frequently asks for feedback from teachers and colleagues
- Demonstrates computer literacy and basic computer skills in clinical practice
- Describes basic concepts in clinical epidemiology, biostatistics, and clinical reasoning
- Categorizes the study design of a research study
- Continually assesses performance by evaluating feedback and assessments
- Develops a learning plan based on feedback with some external assistance
- Demonstrates use of published review articles or guidelines to review common topics in practice
- Uses patient care experiences to direct learning
- Ranks study designs by their level of evidence
- Identifies bias affecting study validity
- Formulates a searchable question from a clinical question
- Accurately assesses areas of competence and deficiencies and modifies learning plan
- Demonstrates the ability to select an appropriate evidence-based information tool to answer specific questions while providing care
- Applies a set of critical appraisal criteria to different types of research, including synopses of original research findings, systematic reviews and meta-analyses, and clinical practice guidelines

- Critically evaluates information from others: colleagues, experts, industry representatives, and patient-delivered information
- Complete the personal learning project in the practiced based learning and improvement curriculum for the rotation.

## **Interpersonal and Communication Skills**

### **Goals**

The orthopaedic resident must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals.

### **Objectives**

- Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds
- Communicate effectively with physicians, other health professionals, and health related agencies
- Act as a consultative role to other physicians and health professionals
- Maintain comprehensive, timely, and legible medical records
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills, if applicable.
- Communicates with patients about routine care (e.g., actively seeks and understands the patient's/family's perspective;
- Able to focus in on the patient's chief complaint and ask pertinent questions related to that complaint)
- Recognizes and communicates role as a team member to patients and staff
- Responds to requests for information
- Communicates competently within systems and other care providers, and provides detailed information about patient care (e.g., demonstrates sensitivity to patient—and family—related information gathering/sharing to social cultural context;
- Begins to engage patient in patient-based decision making, based on the patient's understanding and ability to carry out the proposed plan; demonstrates empathic response to patient's and family's needs; actively seeks information from multiple sources, including consultations; avoids being a source of conflict; able to obtain informed consent [risks, benefits, alternatives, and expectations]); actively participates in team-based care; Supports activities of other team members, communicates their role to the patient and family
- Communicates competently in difficult patient circumstances (e.g., able to customize emotionally difficult information, such as end-of-life or loss-of-limb discussions; supports patient and family; engages in patient-based decision making incorporating patient and family/cultural values and preferences)
- Understands the Operating Room team leadership role and obligations

## Professionalism

### Goals

The orthopaedic resident must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles

### Objectives

- Demonstrate respect, integrity and compassion for others
- Demonstrate responsiveness to patient needs that supersedes self interest
- Demonstrate accountability to patients, society and the profession
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in culture, age, gender, disabilities and sexual orientation
- Demonstrate commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent and business practice
- Consistently demonstrates behavior that conveys caring, honesty, and genuine interest in patients and families
- Recognizes the diversity of patient populations with respect to gender, age, culture, race, religion, disabilities, sexual orientation, and socioeconomic status
- Recognizes the importance and priority of patient care, with an emphasis on the care that the patient wants and needs; demonstrates a commitment to this value
- Understands when assistance is needed and willing to ask for help
- Exhibits basic professional responsibilities, such as timely reporting for duty, being rested and ready to work, displaying appropriate attire and grooming, and delivering patient care as a functional physician
- Aware of the basic principles and aspects of the general maintenance of emotional, physical, mental health, and issues related to fatigue/sleep deprivation
- Demonstrates an understanding of the importance of compassion, integrity, respect, sensitivity, and responsiveness while exhibiting these attitudes consistently in common and uncomplicated situations
- Consistently recognizes ethical issues in practice; discusses, analyzes, and manages in common and frequent clinical situations including socioeconomic variances in patient care
- Recognizes limits of knowledge in common clinical situations and asks for assistance
- Recognizes value of humility and respect towards patients and associate staff
- Demonstrates adequate management of personal, emotional, physical, mental health, and fatigue
- Exhibits these attitudes consistently in complex and complicated situations
- Recognizes how own personal beliefs and values impact medical care
- Knowledgeable about the beliefs, values, and practices of diverse patient populations and the potential impact on patient care
- Recognizes ethical violations in professional and patient aspects of medical practice
- Consistently recognizes limits of knowledge in uncommon and complicated clinical situations; develops and implements plans for the best possible patient care
- Assesses application of principles of physician wellness, alertness, delegation, teamwork, and optimization of personal performance to the practice of medicine
- Seeks out assistance when necessary to promote and maintain personal, emotional, physical, and mental health

## **Systems-based Practice**

### **Goals**

The orthopaedic resident must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

### **Objectives**

- Work effectively in various health care delivery settings and systems relevant to orthopaedics
- Coordinate patient care within the health care system relevant to their orthopaedics
- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Advocate for quality patient care and optimal patient care systems
- Work in interprofessional teams to enhance patient safety and improve patient care quality
- Participate in identifying system errors and implementing potential system solutions
- Describes basic levels of systems of care (e.g., self-management to societal)
- Understands the economic challenges of patient care in the health care system
- Recognizes importance of complete and timely documentation in teamwork and patient safety
- Explains the role of the Electronic Health Record (EHR) and Computerized Physician Order Entry (CPOE) in prevention of medical errors
- Gives examples of cost and value implications of care he or she provides (e.g., gives examples of alternate sites of care resulting in different costs for individual patients)
- Uses checklists and briefings to prevent adverse events in health care
- Appropriately and accurately enters patient data in EHR
- Effectively uses electronic medical records in patient care
- Orders and schedules tests in appropriate systems for individual patients balancing expenses and quality
- Successfully navigates the economic differences of the health care system
- Participates in quality improvement or patient safety program and/or project
- Reconciles conflicting data in the medical record
- Participate in one medical staff committee as a non-voting member, provide a formal presentation at the Orthopaedic Surgery educational grand rounds, and write a self-assessment of committee experience with relevant learning points articulated and documented.

### **ASSESSMENT METHOD:**

Direct and indirect observation by faculty with assessment on formal end of rotation evaluation form.

### **DIDACTIC CURRICULUM REQUIRED ATTENDANCE:**

RUHS Monday Pre-Op Conference (Monday AM)

RUHS Wednesday Conference (Wednesday AM)

RUHS Friday Post-Op Conference (Friday AM)

RUHS Ortho Monthly Research Meeting

RUHS Ortho Monthly Department Meeting/Educational Grand Rounds

RUHS Ortho Bi-Monthly M&M Conference