



Department of Orthopaedics and Rehabilitation

Rotation-Specific Objectives for Resident Education	
Rotation:	Physical Medicine & Rehabilitation
Resident Year-In-Training:	PGY1

Attending Physicians

1. Hans Carlson, MD

American Board of Physical Medicine & Rehabilitation certified

2. Nels Carlson, MD

American Board of Physical Medicine & Rehabilitation certified

Primary Objective

Medical and nonsurgical training related to orthopedic injury and conditions involving the spine and extremities. This is to include, but not be limited to, the initial work-up and triage of patients with spinal disorders, arthrosis, musculoskeletal pain, and acute injuries. The trainee will, at the end of the rotation, be able to conduct a history and physical, including obtaining pertinent positives and negatives, in the initial evaluation of patients presenting with both elective and emergent musculoskeletal pathology. The trainee will learn to compile a differential diagnosis list based on the information they gather. The trainee will learn to understand electromyogram evaluation and treatment. The clinic time will also focus on bracing and prosthetic utilization.

Educational Philosophy

The primary directive of the physical medicine and rehabilitation service is to educate the orthopedic resident in identification and treatment of musculoskeletal pathology. At the PGY-1 level, this starts with the gathering of information for accurate identification of pathology, followed by communicating this information in a coherent and timely manner to the other members of the team, and then initiating medical and non-surgical treatment options. The work-up and treatment of these pathologies 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 referral to a surgeon as necessary. The goal is to educate the PGY-1 resident to an end point where he/she is able to gather information at initial presentation to create a differential diagnosis list, and to assist in the medical and non-surgical treatment of the patient.

The education provided during the physical medicine and rehabilitation rotation aims to fulfill the six core competencies, defined as :1)Patient Care, 2)Medical Knowledge, 3)Practice Based Learning and Improvement, 4)Interpersonal and Communication Skills, 5)Professionalism, 6)System Based Practice.

Rotation Expectations and Opportunities

Current Rotation: One resident (PGY1 year) will spend 4 weeks dedicated to Physical Medicine and Rehabilitation service. They will have no other on-call duties during this rotation. This rotation encompasses a 5 day week, with some clinical activity every day. Please consult with Dr Nels Carlson on the first day of the rotation to determine the exact clinical schedule dependent on the availability of these two clinicians.

Generalized Rotation Goals and Mechanisms

Didactic

- Every Monday morning at 6:30-8:30am, there is an orthopaedic department grand rounds lecture. Every Friday morning from 6:30-8:30am is the resident basic science conference.
- Pre-, mid- and post-rotation meetings to assess expectations and progress of residents.

Patient care

- Manage all aspects of musculoskeletal disorders seen in patients of all ages. This includes appropriate non-operative treatment modalities. The resident is responsible for learning and understanding indications for electromyography and interpretation of test results.
- 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.

Medical Knowledge

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

1. Anatomy, biology and biomechanics of the axial extremities and spine
 - a. Including the ability to interpret radiographic and MRI exams of the extremities and spine.
2. Spine Degeneration
 - a. Special focus on herniated discs
 - b. Micro and macroscopic changes in the degenerative spine
 - c. Radiographic changes in the degenerative spine and intervertebral disc
3. Spinal Stenosis
 - a. Congenital vs Acquired
 - b. Understanding of physical exam findings
4. Spondylolisthesis
 - a. Isthmic
 - b. Degenerative
 - c. Iatrogenic
 - d. Pathologic

- e. Traumatic
- f. Congenital
- g. Operative management and indications
- 5. -Inflammatory Conditions
 - a. Natural history of the different conditions
 - b. Operative indications and potential pitfalls
- 6. Hip and Knee Arthropathy
 - a. Natural history of primary arthrosis
- 7. Adult Deformity
 - a. Multi level implants and implications on surrounding structures
 - b. Natural history of adult onset scoliosis and operative treatment
 - c. Risks and benefits of surgical management of deformity

The mechanism of assessment for each of these categories will be direct observation and interaction with the 2 members of the PM&R faculty. Feedback and directions for improvement will be asserted as needed by the faculty. At the midpoint of the rotation the resident will be expected to schedule a mid-rotation review with Dr. Carlson to identify strengths and weaknesses. Formal assessment using developmental milestones will be performed at the end of the rotation.

Practice-Based Learning and Improvement

- By the end of the rotation, each PGY1 resident should be comfortable and confident with the following non-operative skills:
 1. clinical assessment
 2. Upper Extremity Neurological Exam
 3. Lower Extremity Neurological Exam
 4. Evaluation and comprehension of x-rays, CT scans, and MRI studies of the spine and extremities
 5. An understanding of the psychosocial issues that are relative to the care of the musculoskeletal system and spine
- Participate as an assistant in electromyography.
- Identify and clearly communicate the indication for every procedure (injections, EMG, etc.) prior to scrubbing, to the attending and students as indicated.
- Direct and perform the following procedures at the PGY1 level:
 1. Flow of patients during clinic
 2. Introduction to clinical billing- diagnosis
 3. Method of evaluation of a clinical visit in order to improve it in the future

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 medical students in clinic.
- 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

The following reading list is not meant to be complete.

Atlas SJ, Chang Y, Keller RB, Singer DE, Wu YA, Deyo RA. The impact of disability compensation on long-term treatment outcomes of patients with sciatica due to a lumbar disc herniation. *Spine*, 31(26):3061-9, 2006 Dec 15.

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