ORTHOPEDIC SURGERY
PGY-2
(1-Month Rotation)

Description of Rotation or Educational Experience

This rotation for PGY-2 family medicine residents is intended to provide essential experience in treating common orthopedic problems. Family physicians are often required to evaluate and manage conditions that ultimately require orthopedic operative intervention. Since many of these conditions can be safely evaluated and managed in the family physician’s office, it is essential for the family physician to develop surgical skills such as preoperative and postoperative care, basic surgical principles, asepsis, handling of tissue, and wound care. It is also important for the family physician to identify those surgical conditions and emergencies best cared for by the orthopedic surgeon, to appropriately and timely refer those patients, and to competently assist in the operating room.

The rotation is designed to enable residents to achieve competency in the diagnosis and management of a wide variety of common orthopedic surgical problems typically cared by family physicians. The structure of the experience entails a one-month rotation in the outpatient office of an attending orthopedist during the PGY-2 year, with a focus on the evaluation and management of common orthopedic complaints.

Upon completion of the rotation, residents should be able to demonstrate the following competencies:

1. Demonstrate a clear understanding of basic principles of orthopedic surgical diagnosis and operative management.
2. Develop a scholarly approach to each patient using evidence-based medicine principles.
3. Develop the necessary knowledge, skills and attitudes to recognize, manage, and appropriately refer when necessary those orthopedic conditions commonly encountered in family medicine.
4. Develop familiarity with the indications for, risks, benefits, and methods of performance of orthopedic surgical procedures essential to family medicine.
5. Recognize the limits of one's abilities and know when to seek appropriate consultation from the orthopedic surgeon.
6. Demonstrate skill in communicating with patients and families in the orthopedic setting.

Patient Care

Goal
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.
Competencies
Residents are expected to:
• Diagnose and manage common orthopedic conditions that patients may present to the family physician’s office.
• Be able to provide patient care that is compassionate, appropriate, and effective for the promotion of health and treatment of orthopedic or musculoskeletal problems commonly seen in a family physician’s practice.

Objectives
The Family Medicine resident will gain competence in the recognition and management of common musculoskeletal problems in children and adults, including appropriate referral and consultation. Specifically the resident shall:
• Perform a thorough clinical assessment, including detailed history, appropriate physical examination, cost-effective laboratory and radiological evaluation, and broad differential diagnosis of key signs and symptoms as they relate to orthopedic problems.
• Demonstrate the ability to order and interpret results of common diagnostic tests such as x-rays, CT, MRI, joint fluid analysis, blood tests, etc.
• Legibly and thoroughly document the findings, impression, and plans for each surgical patient using the problem-oriented patient care system.
• Demonstrate knowledge of basic anatomy and physiology as it relates to common orthopedic surgical procedures.
• Demonstrate proficiency of wound management.
• Demonstrate proficiency in use of local anesthesia.
• Skillfully perform a preoperative assessment, and describe these major principles:
  o Surgical risk assessment, including identifying the risks of and precautions taken for certain co-morbid diseases
  o Role of antibiotic prophylaxis for certain surgical procedures
  o Patient preparation for surgical procedures
• Demonstrate basic knowledge of postoperative care, to include:
  o Provide routine postoperative care
    ▪ Provide appropriate wound care.
    ▪ Discuss the importance of early patient mobilization.
    ▪ Appropriately manage postoperative pain.
    ▪ Discuss the role of nutrition in the postoperative patient.
    ▪ Describe the various methods used in deep venous thrombosis (DVT) prophylaxis.
  o Recognize and appropriate manage common postoperative complications.
• Discuss the role of ambulatory surgery and identify those conditions that can be safely done as an outpatient versus those requiring hospitalization.
  o List those patient characteristics that would preclude someone from undergoing outpatient surgery.
Discuss the guidelines of conscious sedation.

- Develop familiarity with the indications for, risks, benefits, and methods of performance of surgical procedures essential to family medicine.

- Develop the following procedural skills:
  - preoperative risk evaluation
  - minor surgical techniques (outpatient procedures)
    - aseptic technique - hand washing, gloving, gowning
    - local and digital block anesthesia
    - simple excision
    - basic laceration repair and skin suturing
    - incision and drainage of soft tissue abscess and cysts
    - needle aspiration and needle biopsy

- Recognize the limits of one’s abilities and know when to seek appropriate consultation from the surgical sub-specialist

**CORE SKILLS**

By the end of the rotation the family medicine resident will be able to demonstrate proficiency in the following:

A. Basic care
   1. fractures (simple, stable, closed, and non-displaced)
   2. sprains and strains
   3. other problems
      a. costochondritis
      b. bursitis/tendonitis/tenosynovitis
      c. elbow: tennis, nursemaids, little-league
      d. entrapment syndrome
      e. Baker’s cyst
      f. osteochondroses/aseptic necrosis
      g. osteoarthritis
      h. metabolic bone disease (ostoporosis, Paget’s disease)
      i. acute and chronic low back pain
   4. procedures (indications, contraindications and competency)
      a. joint aspiration
      b. joint and musculoskeletal injection (local anesthesia, steroid)
      c. wrapping and taping
      d. splints (upper and lower extremity)
      e. casting

B. Advanced care
   1. fractures
      a. closed tarsal and carpal bones, particularly navicular
      b. Colle’s fracture
      c. nondisplaced medial or lateral epicondyle of humerus
d. nondisplaced type I and type II epiphyseal injuries in children
2. meniscal tears
3. recurrent shoulder dislocation
C. Orthopedic emergency recognition and stabilization
   1. compartment syndrome
   2. hip dislocation
   3. knee dislocation
   4. pelvis fracture
   5. cervical spine fracture
   6. cord injury
D. Surgical assisting

Medical Knowledge

Goal
Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

Competencies
- Demonstrate knowledge about established and evolving biomedical, clinical sciences and the application of this knowledge to orthopedic patient care including competency in the recognition of common orthopedic problems and general knowledge of the management of such problems.
- Develop awareness of the principles involved in differentiating the causative origin of clinical symptoms resulting in the need for medical versus surgical intervention.

Objectives
By the end of the rotation the resident will have the knowledge to recognize, manage, and appropriately refer when necessary those orthopedic conditions commonly encountered in family medicine, specifically:

CORE KNOWLEDGE
A. Normal anatomy and physiology
B. Normal growth and development
C. Laboratory data including indications, contraindications, and interpretations, (e.g. joint fluid analysis)
D. Testing
   1. interpretation of common musculoskeletal radiographs
   2. appropriate use of magnetic resonance imaging, computed tomographic scanning, and bone scanning
   3. indications for and understanding of procedural techniques
E. Pathogenesis/pathophysiology/recognition
   1. joint pain, swelling, and erythema
   2. muscular pain, swelling and injury
| 3. | musculoskeletal trauma |
| 4. | fractures |
| 5. | dislocations |
| 6. | tendon injuries |
| 7. | nerve injuries |
| 8. | bone and joint deformities |
| 9. | bone and joint infections |
| 10. | metabolic bone diseases |
| 11. | musculoskeletal congenital anomalies |
| 12. | musculoskeletal birth injuries |
| 13. | compartment syndrome |
| 14. | avascular necrosis |

**F. Pediatric orthopedic conditions**
1. hip dislocation
2. Legg-Calve-Perthes disease
3. Osgood-Schlatters disease
4. slipped capitofemoral epiphysis
5. “clubfoot” (talipes)
6. intoeing (metatarsus adductus, tibial torsion, femoral anteversion)
7. “bow leg” (genu varum) and “knock knee” (genu valgum)
8. epiphyseal injuries on children according to the Salter-Harris classification

**G. Management and therapy**
1. outline expected course with and without therapy
2. patient education for acute and chronic problems
3. pharmacologic treatment
   a. salicylates
   b. non-steriodals
   c. Steroids, oral and injectable
   d. Muscle relaxants
   e. Antibiotics
4. supportive and corrective devices
   a. braces
   b. corrective shoes
5. rehabilitation
   a. physical therapy
      cold, heat
      ultrasound
      exercises
   b. occupational therapy
   c. disability
   d. psychosocial
6. surgery
   a. operative placement of wires, pins, and plates
   b. artificial joint replacement

**J. prevention**
1. pre-participation screening
2. conditioning and training  
3. injury prevention  
4. physical fitness  
5. bone loss  
   a. nutrition  
   b. pharmacology

### Practice-Based Learning and Improvement

**Goal**
Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life long learning.

**Competencies**
Residents are expected to develop skills and habits to be able to:
- Identify and perform appropriate Orthopedic Surgery activities
- Incorporate formative evaluation feedback into daily practice.
- Locate, appraise and assimilate evidence from related Orthopedic Surgery literature and journal clubs related to patients’ health situation and daily practice.
- Use information technology to optimize learning.

**Objectives**
At the conclusion of this rotation the Family Medicine resident will be able to:

- Understand the importance of patient education and demonstrate the ability to facilitate the learning of others.
- Analyze ones own practice for needed improvement
- Recognize common practice patterns and critically assess the patterns to identify areas for improvement;
- Appreciate the role of multidisciplinary teams in providing and improving patient care;
- Conduct literature search and clinic studies to incorporate evidence-based medicine into patient care practice patterns;
- Assess medical information to support self-directed learning;
- Critically appraise and apply the reports of new medical evidence when making clinical management plans and treatment decisions;
- Use health information systems efficiently to manage and improve care at the patient and system levels;
- Transfer information learned from hospital setting to outpatient setting; and
- Facilitate and encourage self-directed learning among colleagues.

### Systems Based Practice
Goal
Residents 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.

Competencies
Residents are expected to:
- Recognize the importance of the family physician and orthopedic surgeon collaborating as partners in the evaluation of and decision-making for the care of orthopedic/musculoskeletal patients.
- Work effectively in various health care delivery settings and systems relevant to orthopedic care
- Coordinate patient care within the health care system relevant to orthopedic care
- Incorporate considerations of cost awareness and risk-benefit analysis in patient care
- Advocate for quality patient care and optimal patient care systems
- Work in inter-professional teams to enhance patient safety and improve patient care quality
- Participate in identifying systems errors and in implementing potential systems solutions

Objectives
- Demonstrate the ability to work as part of a team with other physicians, nursing and ancillary staff to provide comprehensive care to the orthopedic patients.
- Refer to an orthopedic surgeon in a timely and appropriate manner.

Professionalism

Goal
Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Competencies
Residents are expected to demonstrate:
- Compassion, integrity, and respect for others
- Responsiveness to patient needs that supersedes self-interest
- Respect for patient privacy and autonomy
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

Objectives
By the end of the rotation, the resident will be able to:
- Demonstrate compassion and understanding to the diverse patient population while showing respect for the patients privacy and autonomy at all times.
Define these ethical and legal issues involved with orthopedic surgery:
- Informed consent
- End-of-life issues
- Quality of life

### Interpersonal and Communication Skills

**Goal**
Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates.

**Competencies**
Residents are expected to:
- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds
- Communicate effectively with physicians, other health professionals, and health related agencies
- Work effectively as a member of leader of a health care team or other professional group
- Maintain comprehensive, timely, and legible medical records

**Objectives**
At the conclusion of the rotation, the residents will be able to:
- Discuss the importance of family physician and surgeon collaborating as partners in the evaluation of and decision making for the care of the surgical patient.
- Legibly and thoroughly document the findings, impression, and plan for each surgical patient, using the problem-oriented patient care system
- Identify the role of the surgeon and surgical subspecialists as consultants.
- Demonstrate ability to accurately and concisely present the findings to the surgical attendings.
- Effectively and compassionately communicate with patients and their families, being sensitive to multicultural beliefs and habits.
- Demonstrate sensitivity to the patient’s and family’s concerns and anxieties regarding the potential need for surgical intervention.
- Discuss the indications and complications of common orthopedic/musculoskeletal procedures in a compassionate and clear manner with diverse patient population.

**Teaching Methods**
The PGY-2 residents will spend one month in their second year on an orthopedic rotation. The residents will spend time in the offices of private orthopedic surgeons where they evaluate and treat common orthopedic problems.
The residents will continue to spend 3 half days per week seeing patients and maintaining continuity of care in the Family Medicine Center. The residents will also have a longitudinal experience with musculoskeletal problems through their continuity patients in the Family Medicine Center. Residents are also required to attend didactic sessions at the Family Medicine Center on Wednesday mornings. These teaching conferences include sports medicine and orthopedic topics throughout the year as well as workshops teaching casting/splinting.

Assessment Method (Residents)

1. At the end of the rotation, the orthopedic surgery attendings will provide an evaluation of the residents’ performance, using the competency-based evaluation form developed by the Family Medicine residency program. To successfully complete this rotation, the resident will demonstrate competence in all areas outlined in the curriculum. Cognitive competence must include not only familiarity with the factual aspects of orthopedic surgery, but also the ability to integrate such factual knowledge into the daily practice of family medicine.

2. At the end of the rotation, the resident will perform a self-assessment, using the goals and objectives in the rotation description, to assess competency and to determine areas which still need further training and/or exposure.

3. The annual Family Medicine in-training examination will also assess the cognitive aspects of orthopedic surgery.

Assessment Method (Program Evaluation)

1. The resident will evaluate the faculty and the orthopedic surgery rotation upon its completion by using the evaluation form developed by the Family Medicine residency program.

2. Both residents and faculty will complete the annual standard program evaluation.

Level of Supervision

Supervision of residents is carried out by both direct and indirect observation by the attending orthopedic surgeons.

Educational Resources

RESOURCES/READING LIST

American Family Physician articles:

Books


WEB SITES

1. [www.wheelessonline.com](http://www.wheelessonline.com)
2. [www.acsm.org](http://www.acsm.org) = American College of Sports Medicine
3. [www.amssm.org](http://www.amssm.org) = American Medical Society for Sports Medicine

Last revised: 2-23-12 (AC)
I, ________________________ hereby attest I have read the above goals and objectives of the Orthopedics Rotation and have reviewed them with ________________________, who acts as my faculty advisor. I hereby attest that I understand these goals and objectives, how they relate to the 6 core competencies set forth by the ACGME, and agree to work diligently within their constructs.

________________________________________               _____________
resident signature                                                                                         date

________________________________________               _____________
faculty advisor signature                                                                                   date