CMHS Orthopaedic Surgery Residency Educational Goals & Objectives

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Overview of Educational Goals and Objectives

Description

Orthopaedic residents rotate on 11 different orthopaedic services and 7 non-orthopaedic rotations during their time at CMH. The majority of the resident's time will be spent at the base hospital, Community Memorial Hospital (CMH), with rotations also taking place at Ventura County Medical Center (VCMC), Children's Hospital of Los Angeles (CHLA), Cedars-Sinai Medical Center (CSMC), Santa Barbara Cottage Hospital (SBCH) and at various outpatient practices and surgery centers. The orthopaedic rotations consist of general orthopaedics, trauma, joint reconstruction, sports, spine, pediatrics, oncology, hand, research, elective, and chief months.

Resident Role and Expectations

Residents will act as a key member of the care team, participating in clinical diagnosis and treatment of myriad orthopaedic conditions, requiring both non-operative and surgical interventions. This clinical experience will take place under the supervision and guidance of the teaching attending staff. As residents progress through the program, they gain gradual independence in patient care and under supervision develop the skills and clinical acumen to practice independently as an attending orthopaedic surgeon. By the time residents are in the chief/PGY5 year, they are expected to function at the level of a junior attending physician but still have the supervision and guidance of the attending faculty.

Readings

Specific readings are listed under the various services

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Goals and Objectives

At completion of the orthopaedic residency program, the resident will demonstrate the medical knowledge, patient care, professional, and communication skills necessary to function independently as an attending orthopaedic surgeon. Through a broad range of varied clinical experiences and under the instruction and guidance of the teaching attending faculty, residents will demonstrate the ability to perform self-directed learning, evaluate their own patient outcomes and performance, and work effectively in numerous health care delivery settings. The resident will receive regular evaluations from the attending staff and incorporate feedback provided to continuously improve and hone their professional, interpersonal, medical and surgical skills.

Instructional Methods

I. Supervised patient care in outpatient clinics
   A. Residents will initially be directly observed with patients, to facilitate the acquisition of excellent history taking, physical exam, and procedural skills.
   B. As residents become more proficient, they will interact more independently with patients and present cases to faculty.
      1. PGY1- for the PGY1 emphasis will be on diagnosis, basic management and generating fund of knowledge
      2. PGY2 - the PGY2 will be expected to obtain focused H&Ps, interpret imaging and lab studies appropriately, and begin to develop cohesive plans under direct guidance
      3. PGY3 - for the PGY3 focus will be on medical decision-making, generating a broader differential diagnosis, providing treatment recommendations, and initiating care
      4. PGY4 - for the PGY4 focus will be on honing performance of the aforementioned skills with increased time efficiency, managing a larger case volume, and collaborating with other professionals in optimizing patients for surgery
      5. PGY5 - for the PGY5 focus will be on preparing for transition to independent practice, managing and helping supervise and teach junior residents, and generating cohesive definitive treatment plans

II. Supervised patient care in the inpatient setting
   A. Residents will assume responsibility in a graded fashion, with gradual progression of competence under supervision. Initially, residents will be directly observed with patients. As residents become more proficient, they will interact more

independently with patients and present cases to faculty. The guided responsibility progression will be similar to that in Section I.

III. Supervised patient care in the ER setting
   A. Residents will assume responsibility in a graded fashion, with gradual progression of competence under supervision. Initially, residents will be directly observed with patients. As residents become more proficient, they will interact more independently with patients and present cases to faculty. The guided responsibility progression will be similar to that in Section I.

IV. Supervised surgical experience in the operating room
   A. As residents progress through the program, they will develop and hone surgical skills of increasing complexity.
      1. PGY1 - for the PGY1 focus will be on basic OR etiquette, sterile technique, patient positioning, use of instruments, and basic preoperative and postoperative care
      2. PGY2 - for the PGY2 focus will be on increased participation in the operating room and developing expertise in basic surgical procedures
      3. PGY3 - for the PGY3 focus will be on expanding the surgical skill set and developing more independence in pre- and postoperative care
      4. PGY4 - for the PGY4 focus will be on honing more complex surgical skills and alternate approaches and troubleshooting complications
      5. PGY5 - for the PGY5 focus will be on the ability to plan and execute surgical interventions independently from start to finish
   B. Surgical settings include
      1. Community and county hospital-based operating rooms
      2. Tertiary hospital operating rooms
      3. Surgery centers
      4. Outpatient hospital-based operating rooms

V. Conferences
   A. Daily morning reports
   B. Weekly fracture or specialty conference
   C. Weekly didactic session on a topic from a rotating, two-year curriculum
   D. Yearly Anatomy course, 10 sessions, with cadaveric dissection
   E. Monthly morbidity and mortality conference
   F. Bimonthly journal clubs
   G. Year-long research didactic series covering biostatistics and research for PGY-1s

VI. Workshops/surgical skills labs
   A. Every 1-2 months on various surgical topics/techniques

VII. Basic surgical skills
   A. PGY 1 residents must complete formal instruction in basic surgical skills through Basic Suture Skills Lab, which provides an introduction to suturing and basic aseptic technique during Resident Orientation prior to the start of clinical duties.
   B. PGY1 residents must complete the American Board of Orthopaedic Surgery (ABOS) Surgical Skills Modules
   C. PGY1 residents must complete a set series of shoulder and knee arthroscopic simulation exercises

VIII. Simulation labs

A. PGY1 residents must complete the arthroscopic simulator exercises for the knee and shoulder.
B. PGY1 residents attend UCLA Simulation Lab and complete simulation exercises for acute medical and surgical care scenarios.
C. PGY1 residents attend mock code simulations at CMH.

IX. Independent study
A. Journal and textbook reading
B. Video and online resources

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Peer to peer evaluation of resident
IV. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
V. Mini-CEX evaluation
VI. Bedside procedural skills evaluation
VII. 360 degree evaluation
VIII. Journal club evaluation
IX. Residents collect cases and present during rotations in weekly fracture conferences and monthly morbidity and mortality conferences. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.
X. Annual OITE performance
XI. Semi-annual formal reviews of performance with co-program director, including review of case log progress

Orthopaedic Basic Surgical Skills

Description

The CMHS basic surgical skills curriculum consists of an orientation, modules from the American Board of Orthopaedic Surgery, didactics on patient safety and quality improvement, a cadaveric anatomy course, and arthroscopic simulation exercises for shoulder and knee.

In Resident Orientation prior to the start of clinical duties, PGY1 residents receive an orientation to basic surgical skills in the Basic Suture Skills Lab. This course, taught by the program director Thomas Golden, MD, provides an introduction to suturing and basic aseptic technique.

PGY1 residents then complete the first 16 modules of the American Board of Orthopaedic Surgery (ABOS) Surgical Skills Modules for PGY 1 Residents, under the direct supervision of Michael Began, MD and program director Thomas Golden, MD.

In this course, the residents utilize the ABOS goals and objectives as well as the ABOS assessment metrics to track the development of resident skills. The modules involve both reading and simulation exercises designed to cover the initial management of injured patients, including splinting, casting; application of traction devices, and other types of immobilization; and, basic operative skills, including soft tissue management, suturing, bone management, arthroscopy, fluoroscopy, and use of basic orthopaedic equipment.

The following ABOS modules are included in our curriculum:
1 - Sterile Technique-Operating Room Setup
2 - Suturing and Knot Tying
3 - Microsurgical Suturing Technique
4 - Soft Tissue Handling and Dissection
5 - Casting and Splinting: Splints, Casts, and Removal
6 - Traction Techniques
7 - Compartment Syndrome: Diagnosis and Treatment
8 - Bone Handling techniques - Osteotomy
9 - Fluoroscopic Knowledge and Skills
10 - K-Wire Techniques
11 - Techniques Basic to Internal Fixation of Fractures
12 - Principles and Techniques of Fracture Reduction
13 - Basic Techniques in External Fixation
14 - Basic Arthroscopy Skills
15 - Basic Arthroplasty Skills (TKA & THA)
16 - Joint Aspiration and Injection

For module 17, Patient Safety, Team Training, Obtaining Consent, the residents participate in an in-house Patient Safety and Quality Improvement curriculum, also attached. The curriculum is based on the ACGME Clinical Learning Environment Review (CLER) expectations and includes a series of didactic workshops and lectures in addition to required coursework through the Institute for Healthcare Improvement Open School.

Resident Role and Expectations

Readings

- Savage JW et al, Efficacy of surgical preparation solutions in lumbar spine surgery J Bone Joint Surg Am. 2012 Mar 21;94(6):490-4
- Saltzman MD et al, Efficacy of surgical preparation solutions in shoulder surgery. Bone Joint Surg Am. 2009 Aug;91(8):1949-53110
- Ethicon Knot Tying Manual
- Pederson W. Principles in Microsurgery. In, Green's Operative Hand Surgery. Wolf S, Hotchkiss R, Pederson W, Kozin S. Elsevier, 2011, Chapter 47. pp 1553-1584.
- Hoppenfeld S, deBoer P, Buckley R. Surgical Exposure in Orthopaedics. J. B. Lippincott Co., 4th Edition, Philadelphia, 2009, 148-182.
- Browner BD, et al.: Skeletal Trauma, 6th Edition.
- Schmidt, Andrew: "Acute Compartment Syndrome" in Evidence-Based Orthopaedics edited by Mohit Bhandari, 2011. Pages 627- 635
- Kenneth A. Krackow: The Technique of Total Knee Arthroplasty, page 226-237.
- Principle of Deformity Correction, Dror Paley, Chapter 4 and 5
- Brown et al. Medical Fluoroscopy: A Guide for Safe Usage
- Flouroscopy Radiation Protection
- Rockwood & Green Fractures in Adults, 7th edition. Chapter 1: Biomechanics of Fractures and Fracture Fixation. Pg 3-38
- Rockwood & Green Fractures in Adults, 7th edition. Chapter 7: Principles of Internal Fixation.
- Manual of Internal Fixation. Techniques recommended by the AO-ASIF Group, 3rd edition. Chapter 3: Preoperative Planning and Principles of Reduction. Pg 159-179
- Hipp JA, Hayes WC. Chapter 4: Biomechanics of Fractures. In, Skeletal Trauma. 3rd ed. Edited by Browner, Jupiter Levine, Trafton. Saunders, Philadelphia, 2003, pp 110-13.
- AANA Advanced Arthroscopy: The Shoulder: Expert Consult: Online, Print and DVD, 1e Richard L Angelo, James Esch, Richard K. N. Ryu 2010. Saunders, Philadelphia, PA
- Preoperative planning for primary total hip arthroplasty. Della Valle AG; J Am Acad Orthop Surg. 2005 Nov;13(7):455- 62.

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Educational Goals and Objectives

Module 1: Sterile Technique - Operating Room Setup

I. Goals for module participant:
   A. Knowledge of the practices of sterile technique
      1. OR clothing policies
      2. Shoe wear
      3. Scrubbing
      4. Gowns/gloves/hoods
      5. How to maintain sterile field
   B. Knowledge of OR room set-up
      1. Types of OR tables
      2. Position in room
      3. Other equipment (C-arm, scope towers, monitoring)
   C. Knowledge of patient positioning
      1. Supine, Beach chair, Lateral decubitus, Prone
      2. OR Table attachments o Fracture table with or without traction
      3. Protection of well arm(s), leg(s)
      4. Maintenance of patient normothermia Knowledge of surgical site preparation
      5. Pre-operative skin marking
      6. Hair removal, tourniquet use
      7. Skin prep options and proper use
   D. Knowledge of the medical aspects of patient preparation for surgery
      1. Medication continuation and discontinuation guidelines
      2. Prophylactic antibiotic recommendations (type, dosage, re-dosing)
      3. DVT prophylaxis guidelines
   E. Knowledge of the commonly available surgical instruments
      1. Basic surgical instruments
         a) Forceps, retractors, scalpels, scissors, suction, etc

2. Orthopaedic instruments
    a) Periosteal elevators, ortho retractors, bone handling instruments
3. Specialty instruments
    a) Spine, arthroscopy, hand, micro, etc.

Module 2: Suturing and Knot Tying

I. Specific educational goals
    A. Tie two-handed square knots
    B. Tie one-handed square knots
    C. Instrument tie square knots
    D. Learn to load the needle driver
    E. Place sutures through tissue without undue stress on the needle or tearing through the tissue
    F. Place simple interrupted stitches
    G. Place simple running stitches
    H. Place horizontal and vertical mattress sutures
    I. Place inverted subcutaneous stitches
    J. Place running subcuticular sutures
    K. Cut sutures to the appropriate length

II. Specific cognitive, affective, psychomotor task objectives
    A. Manipulate needle driver with needle and suture using the dominant hand
    B. Assist with forceps in the non-dominant hand

Module 3: Microsurgical Suturing Technique

I. Specific educational goals
    A. Familiarize with the different microsurgical forceps, scissors and needle drivers
    B. Learn the proper wear or usage of magnification devices
    C. Learn proper posture for performing seated microsurgical technique
    D. Pass microsurgical needles and suture through a low resistance material under binocular 2.5x or 3.5x magnification
    E. Tie knots using standard microsurgical technique

II. Specific cognitive, affective, psychomotor task objectives
    A. Using binocular 2.5x or 3.5x loop magnification or standard operating room microscope
        1. The learner will pass and handle microsurgical instruments appropriately
        2. The learner will pass 10-0 nylon suture on a BV-75 needle through a low resistance material, simulating nerve or blood vessel.
        3. The learner will tie standard microsurgical knots without tearing the low resistance material, bending the needle or separating the needle from the suture

Module 4: Soft Tissue Handling and Dissection

I. Specific educational goals
   A. Demonstrate use surgical instruments, including scalpels, scissors, forceps, retractors, and clamps.
   B. Demonstrate how to plan a surgical approach, utilizing bony landmarks, with attention to important structures, such as neurovascular anatomy.
   C. Dissect soft tissue using appropriate techniques, which allows identification of surgical planes.
   D. Demonstrate sharp and blunt dissection, protection and ligation of vascular anatomy, and identification of different tissue types.
   E. Demonstrate wound closure in a layered fashion, using a variety of methods including interrupted and running sutures.

Module 5: Casting Techniques: Splints, Casts, and Removal

I. Specific educational goals
   A. Understand principles of casting/splinting in management of acute trauma (when to apply a cast vs. splint and why).
   B. Learn how to apply cast padding across a joint (ankle, elbow) to optimize padding but prevent pressure during joint flexion.
   C. Learn how to manipulate plaster and fiberglass when wet to optimize cast hardening.
   D. Learn techniques of cast application with even layers without excessive constriction circumferentially.
   E. Learn how to mold casts around joints and bony prominences to prevent pressure on the skin.
   F. Apply principles of splint/cast molding for fracture reduction and maintenance of reduction (NO straight cylinder casts).
   G. Learn safe use of a cast saw and cast removal tools.
   H. Apply principles to 5 casts/splints: “Sugartong” forearm splint, “Sugartong/posterior” leg and ankle splint, Long arm cast, Short arm cast, and Thumb spica cast.
   I. Learn principles of finger splints

Module 6: Traction Techniques

I. Specific educational goals
   A. The learner will understand the indications for skeletal traction and the relevant local anatomy.
   B. The learner will understand the pros and cons of K-wire versus Steinman pin traction.

C. The learner will understand sterile technique in the insertion of traction pins or the application of Gardner Wells tongs.
D. The learner will understand basic knot tying.
E. The learner will understand the pitfalls and complications of traction for long bone and cervical spine injuries.

II. Specific cognitive, affective, psychomotor task objectives
A. The learner will demonstrate the ability to use a twist drill.
B. The learner will demonstrate the ability to accurately place a traction pin across a simulated bone/extremity.
C. The learner will demonstrate the ability to tie Bowline and half hitch knots.
D. The learner will demonstrate the ability to apply Gardner Wells tongs to a simulated skull, accurately placing the pins in a predetermined location.
E. The learner will demonstrate the ability to correctly tighten Gardner Wells tongs.

Module 7: Compartment Syndrome: Diagnosis and Treatment

I. Specific educational goals
A. Demonstrate knowledge of the patient population at risk for developing compartment syndrome
B. Demonstrate knowledge of the signs and symptoms of compartment syndrome and their reliability
C. Demonstrate knowledge of the anatomy of the areas most commonly at risk for developing compartment syndrome: the forearm and the leg
D. Demonstrate knowledge of when the measurement of compartment pressure is warranted
E. Describe indications for operative fasciotomy.

II. Specific cognitive, affective, psychomotor task objectives
A. Demonstrate the ability to correctly place a needle in different areas of a model that contains numerous compartments
B. Demonstrate the ability to correctly use a handheld intra-compartmental pressure monitor and/or arterial line to accurately measure the pressure in a model compartment
C. Demonstrate the ability to successfully perform a fascial release of the lower leg and the forearm/hand on a cadaver (if available)

Module 8: Bone Handling Techniques: Osteotomy

I. Specific educational goals
A. Understand basics and terminologies in bone deformities (CORA, angulation, translation, mechanical axis, anatomical axis)
B. Understand the concepts osteotomy techniques (closing wedge, opening wedge, rotational, translational, dome)

C. Understand the characteristics and techniques related to the instruments used for osteotomy (osteotome, chisel, drill, power saw, gigli saw)
D. Understand the technique to mitigate soft tissue trauma or excessive heat due to the osteotomy

II. Specific cognitive, affective, psychomotor task objectives
A. Demonstrate knowledge pertinent to the above tasks

Module 9: Fluoroscopic Knowledge and Skills

I. Specific educational goals
A. Understand the appropriate uses of fluoroscopy.
1. Acquire the ability to obtain standard fluoroscopic views.
2. Be able to accurately describe relative fluoroscopy unit movements.
3. Have a basic understanding of fluoroscopic anatomy as it relates to orthopaedic surgical management of fractures and dislocations.
4. Understand the safety precautions to minimize excessive or harmful radiation.
5. Understand the importance of obtaining optimal fluoroscopic views.

II. Specific cognitive, affective, psychomotor task objectives
1. Navigate a c-arm for optimal fluoroscopic images
2. Practice radiation safety
3. Understand general and site-specific fluoroscopic anatomy
4. Assess position of hardware/surgical instruments and fracture reduction fluoroscopically
5. Develop the psychomotor skills to accurately navigate a wire to a precise location using biplane fluoroscopic control.

Module 10: K-Wire Techniques

I. Specific educational goals
A. Learn how to use the wire driver, in forward, reverse, and oscillate modes
B. Learn to maintain reduction of simple fractures
C. Place the K-wire under direct visualization
D. Manipulate the K-wire and change direction under direct visualization
E. Place the K-wire with fluoroscopy
F. Manipulate the K-wire under fluoroscopy
G. Learn to distinguish cortical and cancellous bone penetration
H. Manipulate and reduce fractures using the wire

Module 11: Techniques Basic to Internal Fixation of Fractures

I. Specific educational goals

A. The learner will obtain the related cognitive knowledge and observe, practice and demonstrate a level of proficiency in the basic skills of fixing a fracture.
B. These exercises will not reproduce material from basic fracture courses (plates, intramedullary nails).
C. The learner will understand the pitfalls and common errors encountered when using orthopaedic equipment essential to fix fractures.

II. Specific cognitive, affective, psychomotor task objectives
A. Using a drill as it typically is used to place screws to fix fractures including:
1. Accurately targeting the far cortex
2. Drilling obliquely
3. Not past pointing beyond far cortex
B. The ability to use a depth gauge.
C. The ability to use a tap.
D. The ability to drill, measure, tap and place screws through limited incisions in the soft tissue envelope.
E. Respect for soft tissues and anatomical constraints.
F. The ability to place screws in a precise location controlled by single plane fluoroscopy.
G. The above skills in increasingly difficult bone and soft tissue simulations.

Module 12: Principles and Techniques of Fracture Reduction

I. Specific educational goals
A. The meaning and assessment of an accurate fracture reduction.
B. The importance of pre-operative planning.
C. The interaction of direct and fluoroscopic assessments of reduction.
D. The limits of varying surgical approaches as they relate to the fracture.
E. The appropriate placement of reduction aids and devices based upon the obliquity of the fracture and other aspects of fracture displacement.
F. Respect for the soft tissue envelope.
G. The difference between temporary versus definitive reduction

II. Specific cognitive, affective, psychomotor task objectives
A. Demonstrate understanding of pertinent anatomy as it relates to the fractured limb (eg. distal tibia anatomy)
B. Understand common surgical approaches, and differences between limited and open techniques as they relate to fracture reduction
C. Understand surgical principles of limited approach techniques including increased importance of fluoroscopic assessment
D. Effectively utilize skills learned in the Fluoroscopy and Basics of ORIF modules to effectively reduce and provisionally fix (with K-wires) a distal tibia articular fracture model (with soft-tissue envelope) through a limited anterior approach.

Module 13: Basic Techniques in External Fixation

I. Specific educational goals
   A. The learner will obtain the pertinent cognitive knowledge and observe, practice and demonstrate a level of proficiency in the basic skills of treating fractures with external fixation.
   B. The learner will understand the common errors and pitfall associated with the use and application of external fixation

II. Specific cognitive, affective, psychomotor task objectives
   A. Identifying a fracture of the upper and lower extremity appropriate for the use of external fixation
   B. Organizing a complete collection of equipment, instruments, and implants necessary to apply external fixation to a fracture
      1. Developing a pre-op planning checklist with contingencies
   C. Acquiring the ability to insert a half-pin into a long bone bicortically
      1. Pre-select the an appropriate size twist drill bit and set of half-pins
      2. Drill a bicortical hole perpendicular to long axis of the bone
      3. Insert half-pin to appropriate depth (no under- or over-penetration of far cortex)
      4. Insert subsequent half-pins aligned with initial pin in a configuration that is biomechanically advantageous and conforms with the fixation clamps
   D. Acquiring the ability to assemble a monolateral fixation construct
      1. Selecting appropriate rods, clamps and instruments for assembly
      2. Building the construct to the half-pins in preparation for reduction and stabilization
   E. Acquiring the ability to reduce the fracture while utilizing the construct as a reduction tool and maintaining the reduction with the construct

Module 14: Basic Arthroscopy Skills

I. Specific educational goals
   A. The learner will become familiar with the basic setup and function of the arthroscopy "tower," including the angled arthroscope, light source, shaver and pump, tissue ablation tools, foot pedals and control boxes
   B. The learner will become familiar with basic hand tools that are used during arthroscopy, including probes, graspers, baskets, scissors, and motorized shaves.
   C. The learner will become familiar with operating room set-up and draping technique for the most common arthroscopic procedures
   D. The learner will understand the relationships between surface anatomy, superficial and deep neurovascular anatomy and basic arthroscopy portals.

II. Specific cognitive, affective, psychomotor task objectives

A. The learner will demonstrate ability to set up and connect the various elements of the arthroscopy tower
B. The learner will demonstrate familiarity and application of various hand instruments used during basic arthroscopic procedures
C. The learner will demonstrate creation of safe portals and will articulate the associated risks to local anatomic structures

Module 15: Basic Arthroplasty Skills

I. Specific educational goals
   A. Understand bone anatomy of the knee and hip with respect to arthroplasty and how it affects drill/saw usage.
   B. Understand the operation of battery powered saws/drills.
   C. Understand how bone cutting jigs are attached to bone and used to perform bone cuts, involving both slotted and open jigs.
   D. Understand the use of bone saws and various blades to perform bone cuts.
   E. Understand the use of femoral and acetabular reamers to accurately and safely perform bone preparation for arthroplasty.
   F. Understand how to protect surrounding soft tissues while using the described instrumentation.
   G. Understand the preparation and curing process of bone cement and the appropriate use of a mixer.

II. Specific cognitive, affective, psychomotor task objectives
   A. Demonstrate knowledge concerning bone anatomy of the hip and knee and how that affects the use of drills/saws to cut bone.
   B. Demonstrate the ability to utilize battery powered saws and drills.
   C. Demonstrate the ability to properly place jigs and prepare to make bone cuts.
   D. Demonstrate the ability to perform and evaluate a bone cut using both a slotted and open jig.
   E. Demonstrate the ability to make freehand bone cuts.
   F. Demonstrate the ability to use femoral reamers (hand reamers and/or powered reamers).
   G. Demonstrate the ability to use acetabular reamers with proper orientation and technique.
   H. Demonstrate the ability to protect surrounding soft tissues while performing bone cuts and evaluate any soft tissue damage.
   I. Demonstrate the ability to prepare bone cement using a mixer and properly handle the cement as it cures.

Module 16: Joint Injection and Aspiration

Specific educational goals

A. To demonstrate skills for use of a needle and syringe in preparing medications for injection;
B. To demonstrate anatomic landmarks for joint aspiration (subacromial, elbow, wrist, knee ankle);
C. To demonstrate joint aspiration and injection techniques.

II. Specific cognitive, affective, psychomotor task objectives

A. To learn the indications for joint aspiration.
B. To learn the indications for joint injection.
C. To set up the syringe, needles, and medication in preparation for an aspiration or injection.
D. To demonstrate knowledge and drawing of anatomic landmarks for the shoulder, elbow, wrist, knee and ankle.

General Orthopaedics - PGY1

Description

The general orthopaedic rotations will familiarize PGY1 residents with how an inpatient orthopaedic service functions and focus on the evaluation and treatment of general orthopaedic patients in an outpatient setting, on the evaluation and treatment of emergency department orthopaedic consultations, and on developing basic surgical skills. This rotation spans 7 months of the PGY1 year. The rotation takes place at the base hospital and the outpatient resident clinic.

Resident Role and Expectations

Residents on this service function as members of the care team, developing skills in managing both inpatient and outpatient orthopaedic evaluation, assessment, and treatment. They function under direct supervision of the senior residents and teaching staff. At any given time, two to four PGY1 residents are on the general orthopaedic service.

I. The PGY1 resident will focus on floor management, including evaluating new consults, management of the pre- and post-operative orthopaedic patient, obtaining appropriate consults for risk stratification and medical co-management. They will develop skills in basic bedside procedures. In the outpatient clinics, they will be expected to perform thorough history and physical exams while gaining knowledge in ordering appropriate imaging and generating rudimentary treatment plans. In the OR, the resident will work on developing skills in sterile technique, positioning, prepping and draping, wound closures and dressing application. Finally, the resident will understand the appropriate use of inpatient and outpatient rehabilitation services.

Readings

- Campbell's Operative Orthopaedics
  Canale & Beaty
- Handbook of Fractures
  Egol et al
- Surgical Exposures in Orthopaedics: The Anatomic Approach
  Hoppenfeld et al
- Pain management and addiction resource

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Educational Goals and Objectives

Patient Care and Procedural Skills

I. Obtain a focused and accurate history, including identifying key information needed to evaluate adults presenting with conditions involving the musculoskeletal system. Perform a thorough physical exam, with attention to key areas pertinent to musculoskeletal conditions. Become familiar with common diagnostic imaging procedures when evaluating and managing patients with orthopaedic conditions: plain radiographs, body MRI, CT scan, radionuclide bone scans, ultrasound. Formulate an evidence-based well-reasoned patient management plan. Record in the electronic medical record findings to the point of official recommendation and plan, which will be made in conjunction with the attending orthopaedic surgeon. The resident will seek appropriate consultation from other services when the patient's condition warrants.

II. Develop familiarity and technical skill in the following procedures:
   A. Application of casts and splints
   B. Setup and use of bed traction devices
   C. Closed reduction of simple fractures
   D. Performance of digital and hematoma blocks
   E. Reduction of dislocations and fractures
   F. Skeletal traction pin insertion
   G. Arthrocentesis and injections
   H. Repair of lacerations
   I. Wound closures
   J. Suture and knot tying skills
   K. Dressing application
   L. Sterile technique, patient site preparation, patient positioning, aseptic draping
   M. Correct use of orthopaedic instrumentation

Medical Knowledge

I. Demonstrate competency in the following topics:
   A. Anatomy and (patho)physiology of the musculoskeletal system
   B. Physiology and biochemistry of bone growth and maturation from childhood to adulthood
   C. The musculoskeletal history
   D. The focused physical exam
   E. Evaluation of the spine and extremities
   F. Proper use of imaging
   G. Pathophysiology of osteoarthritis and inflammatory arthritis
   H. Diagnosis and treatment of septic arthritis
   I. Basic management of systemic diseases affecting the musculoskeletal system
   J. Preoperative and postoperative care of the surgical patient

K. Fracture care management, open and closed
L. Accurate/detailed assessment and care of the polytrauma patient
M. Basic pain management
N. Introduction to preoperative planning
O. Introduction to surgical approaches
P. Timing and implementation of physical therapy in the postoperative patient

II. Develop an efficient, rapid approach to finding information resources related to the musculoskeletal system (e.g. on the web, in the literature or textbooks, or other electronic media) to obtain information relevant to a presenting patient problem.

Interpersonal and Communication Skills

I. Develop interpersonal skills necessary to communicate effectively with patients, families, nursing staff, mid-level healthcare providers, ancillary staff, medical students, fellow residents, and attending staff. Create an atmosphere of collegiality and mutual respect with all providers involved in the care of patients. Talk to family members about sensitive issues that relate to a patient's illness, e.g. coping with the patient's altered needs in his/her home setting. Write an effective and timely consultation note that summarizes the findings and recommendations of the orthopaedist and clarifies the continued role and responsibility of the consultant. Share knowledge with team members to foster an environment of learning. Interpret and describe radiographic findings to peers effectively using commonly accepted descriptors.

Practice-Based Learning and Improvement

I. Investigate and evaluate patient care practices, appraise and assimilate scientific evidence, and improve patient care practices based on learning, reflection, and feedback. Record and track cases and bedside procedures. Be involved in the teaching of medical students, fellow interns, and colleagues. Present patients for discussion during rounds and seminars, with appropriate literature references to support planned interventions. Understand the role of study design and the use/misuse of statistical analysis in reviewing the results of published research in orthopaedic surgery. Identify standardized guidelines for diagnosis and treatment of complex problems of the musculoskeletal system and learn the rationale for adaptations that optimize treatment. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors and subordinates to improve patient care).

Professionalism

I. Demonstrate respect, compassion, honesty, and integrity. Have a commitment to ethical principles, including protecting the confidentiality of patient information and providing patients with informed consent. Demonstrate responsiveness to the needs of patients and society in a way which supersedes self-interest. Demonstrate accountability to patients, society and to the profession. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities.

Systems-Based Practice

I. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing, without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the operating room, emergency department, and wards. Direct patients and their families toward individuals within the institution that can help them access support and resources. Join and participate in a hospital-based committee.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Peer to peer evaluation of resident
IV. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
V. Mini-CEX evaluation
VI. Bedside procedural skills evaluation
VII. 360 degree evaluation
VIII. Residents collect cases and present during rotations in weekly fracture conferences and monthly morbidity and mortality conferences. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.

Orthopaedic Research - PGY 1

Description

The orthopaedic research rotation provides an opportunity to build the foundation for and to pursue scholarly work at CMH. The goal is to introduce the resident to the thoughtful investigation of medical and psychosocial questions that affect individual and/or population health, as well as issues affecting the delivery of quality care. Residents will have one month in the PGY1 year that will be dedicated to introducing the research process and the development of research projects. PGY1 will receive instruction on experimental design, hypothesis testing, and other current research methods. Each PGY1 resident will meet with the chief residents to discuss research ideas and projects. Over the course of the research month the PGY1 will have a total of at least 15 days of dedicated time to research. The rotation occurs at CMH.

Resident Role and Expectations

In the PGY1 year, residents are expected to identify a mentor. Focus is on formulating a cogent question and structuring a project, including a review of evidence-based background information. Residents also learn about the CMH Institutional Review Board and ongoing studies in our institution. All PGY1s must complete the ICH course on Good Clinical Practice and obtain a certificate of completion, which must be maintained. In addition, all PGY1s attend a formal longitudinal research didactic series, which provides an introduction to biostatistics.

Readings

Research readings will be self-directed, but may include:

I. CMHS intranet resources
- CMHS Medical Library
- CMHS Research Support

II. Online educational resources
- American College of Physicians (ACP) High Value Care Curriculum: Utilizing Biostatistics in Diagnosis, Screening, and Prevention
- ACP Writing a Research Abstract
- American Osteopathic Association (AOA) Research and Grants
- Agency for Healthcare Research and Quality (AHRQ): Comparative Effectiveness Reviews
- CONSORT Transparent Reporting of Trials
- International Committee of Medical Journal Editors (ICMJE) Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals
- JAMA Guide to Statistics and Methods
- PRISMA Transparent Reporting of Systematic Reviews and Mata-Analyses
- The NNT: Quick summaries of evidence-based medicine
- STROBE Statement Strengthening the Reporting of Observational Studies in Epidemiology

IV. Qualitative research resources

GME will provide support to residents interested in conducting qualitative or mixed method research studies. Introductory resources include:

- Qualities of Qualitative Research: Part I
- Qualitative Research Part II: Participants, Analysis, and Quality Assurance
- Thematic analysis

V. Specialty college resources

- American College of Physicians guideline for poster presentations
- AOAO Guidelines for the Resident Literature Review, Case Report, Scientific Paper, or Poster Presentation

Faculty Contact

Graal Diaz, PhD
Research Coordinator

Amanda Frugoli, DO
Research Team Member

Mickel Paris, MILS
Medical Librarian

Thomas Golden, MD
Program Director
Orthopaedic Surgery

Educational Goals and Objectives

Patient Care and Procedural Skills

I. All residents will learn to identify questions that impact daily patient care and become familiar with the use of information management tools to access pertinent data.

Medical Knowledge

I. PGY1s will
   A. Learn general guidelines for conducting biomedical research and become familiar with concepts such as study design, measurement, and analysis
   B. Learn how the Institutional Review Board works and become familiar with guidelines for the protection of human subjects
   C. Gain basic skills in understanding statistical concepts behind evidence-based medicine, including
      1. Absolute and relative risk reduction
      2. Confidence intervals
      3. Hazard ratio
      4. Intention to treat
      5. Likelihood ratios
      6. Number needed to treat

7. Odds ratio
8. Power
9. Pretest probability
10. p-value
11. Sensitivity and specificity
12. Spectrum bias
13. Type I and II errors

D. Be able to identify opportunities for scholarly inquiry, define a clinical question, and understand how to develop and execute a research plan
E. Develop skills to facilitate critical appraisal of published medical research
F. Develop understanding of experimental design, hypothesis testing, and other current research methods, as well as participation in clinical or basic research

Interpersonal and Communication Skills

I. PGY1s will
   A. Develop their presentation skills and be able to answer questions in a public forum
   B. Learn to distill salient information from published studies and be able to counsel patients regarding impact on their care
   C. Hone writing skills by providing a narrative description of their scholarly activity and where appropriate, writing a scientific paper suitable for publication
   D. Obtain informed consent for research when appropriate

Practice-Based Learning and Improvement

I. PGY1s should
   A. Be able to access current clinical practice guidelines, electronic databases, published studies, and computer-based diagnostic reasoning programs to answer clinical questions
   B. Foster intellectual inquiry through self-directed learning

Professionalism

I. All residents must demonstrate a commitment to using evidence-based data to shape research and patient care.

Systems-Based Practice

I. PGY1s should look for opportunities to perform quality improvement projects to improve care within our healthcare system.

Evaluation

I. Residents will be evaluated on the progress of their research projects.

Anesthesiology - PGY 1

Educational Goals & Objectives

The anesthesiology rotation is designed to provide PGY1 orthopaedic residents with an opportunity to evaluate and manage patients in the perioperative setting. Training should familiarize the resident both with patient management as a member of a coordinated team and with consultation for operative patients on other services. Residents will learn an approach to patients preoperatively and become comfortable with the appropriate ordering and interpretation of laboratory studies and imaging in urgent and non-urgent settings. Residents will develop skills in airway management, basic ventilator management, conscious sedation, pain management, and other pharmacologic management of patients in the perioperative setting.

Contact
Scott Thomas, DO
Anesthesiologist

Faculty will facilitate learning in the 6 core competencies as follows:

Patient Care and Procedural Skills

I. All residents must be able to provide compassionate, culturally-sensitive, and appropriate care for perioperative patients.
II. Residents will demonstrate the ability to take a pertinent history and perform a focused perioperative exam with emphasis on perioperative risk factors, including family history of bleeding, clotting, or anesthetic reaction; comorbidities, such as coronary artery disease, cardiomyopathy, COPD, and cirrhosis; smoking history; and medication use. Residents should be able to do a good cardiopulmonary exam and understand normal airway anatomy. Residents should be able to differentiate ill from stable patients.
III. Residents will become competent in airway management skills, including mask ventilation, direct laryngoscopy, laryngeal mask airway placement, and video laryngoscopy. Residents will become comfortable with endotracheal intubation and familiar with nasotracheal intubation, basic ventilator management, conscious sedation, and troubleshooting skills.

Medical Knowledge

I. Residents will learn basic pharmacology of anesthetic agents, paralytics, sedation, and pressors as well as other commonly used drugs in the perioperative setting, including local anesthetics, benzodiazepines, opioids, muscle relaxants, and antiarrhythmics. Residents will understand the indications, risks, and benefits of general versus regional anesthesia.
II. Residents will become familiar with an understanding of the basic pathophysiology, clinical presentation, appropriate diagnostic studies, and initial therapy for the following conditions:
    - Cardiac arrest
    - Malignant hyperthermia

- Shock
- Stable and unstable arrhythmias
- Uncontrolled pain

III. Residents will become familiar with the Glasgow Coma Scale and scoring systems for sedation, severity of illness, perioperative risk, and post op mortality.

IV. Residents will be able to understand the indications for ordering and interpretation of preoperative laboratory and diagnostic studies, including:
    a. CBC, chemistries, coagulation studies, and arterial blood gas
    b. ECG, echocardiogram, and stress testing
    c. Chest radiograph and PFTs

Practice-Based Learning and Improvement

I. Residents should be able to access current anesthesiology practice guidelines from the American Society of Anesthesiology, journals, and other sources to apply evidence-based strategies to patient care.

II. Residents should learn to function as part of the operating room team to optimize patient care.

III. Residents should respond with positive changes to constructive feedback from members of the health care team.

Interpersonal and Communication Skills

I. Residents must demonstrate written (electronic) and verbal communication skills that facilitate the timely and effective exchange of information within the system.

II. Residents must be able to accurately describe the risks and benefits of undergoing anesthesia to obtain informed consent.

III. Residents will develop interpersonal skills that facilitate collaboration with patients, their families, and other health professionals.

Professionalism

I. All residents must demonstrate a commitment to carrying out professional responsibilities.

II. All residents should be able to educate patients in a manner respectful of gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation on choices regarding their care.

Systems-Based Practice

I. Residents must have a basic understanding that their diagnostic and treatment decisions involve cost and risk and affect quality of care.

II. Residents will become familiar with perioperative quality measures, risk management strategies, and cost of care within our system.

Teaching Methods

I. Supervised patient care in the operating room and postoperative recovery room.
    - Residents will initially be directly observed in the preoperative setting to facilitate the acquisition of excellent history taking and physical exam skills. Faculty will always provide one-on-one direct supervision of residents and teaching of hands-

on skills for residents in the operating room.
- Residents will review cases with faculty.
- Initial emphasis will be on diagnosis and basic management.
- When residents have mastered these skills, focus will be on medical decision-making and trouble-shooting.

II. Conferences
- Specialty-specific didactics

III. Independent study
- Journal and Textbook reading TBD by attending anesthesiologist.
- Online resources
    - American Society of Anesthesiologists
    - Pain management and addiction: https://www.hhs.gov/opioids/treatment/overdose-response/index.html
    - Up To Date
    - Clinical Key

Evaluation

I. Case and procedure logs
II. Residents will get signed off on procedural skills as they achieve competence.
III. Attending evaluation of resident
IV. 360 degree evaluation

Rotation Structure

I. Residents should contact the anesthesiology attending 2-3 days prior to the start of the rotation determine start time and location. Residents should read about airway evaluation and management prior to beginning the rotation.

II. Residents should spend the majority of their time in the OR and recovery room, with the exception of required conferences or patient-related time elsewhere in the hospital.
- Rotations are a "hands-on" learning experience. Residents should spend the majority of their time engaged in patient care and/or doing procedures.
- Case-based learning is very effective. Residents may be assigned patient-based questions to research and report back to the team.
- Resident may be asked to do a short presentation to the group on a pertinent topic.
- When doing consults, residents should understand the question being asked and provide a concise answer.

III. Call and weekend responsibilities TBD by the attending physician.
- Duty hours must be consistent with ACGME requirements and are subject to approval by the program director.

IV. Residents have specialty-specific didactics and should be excused in a timely fashion to attend.

Critical Care Medicine - PGY 1

Educational Goals & Objectives

I. Patient Care
   A. Establish skills in the triage and management of critically ill medical patients through admission, daily patient care, and discharge.
   B. Improve leadership and technical skills during management of crises.
   C. Demonstrate appropriate use and interpretation of invasive monitors (such as arterial lines, CVP) and equipment (such as ultrasound, airway equipment).

II. Medical knowledge
   A. Build / strengthen knowledge around both general ICU care management principles, as well as the specific content areas of focus listed below through independent study, patient care, and formal didactics.

III. Practice-based learning and improvement
   A. Embrace an active role in the education of patients, families, students, co-residents, and other healthcare professionals.

IV. Interpersonal and Communication Skills
   A. Illustrate skill in communication with patients, families, and other professionals.
   B. Illustrate teamwork and leadership skills in daily patient care, crisis management, and interprofessional ICU team interactions.

V. Professionalism
   A. Demonstrate a high level of responsibility to patients, families, and society reflecting a sense of honesty, integrity, and ethical behavior.
   B. Illustrate commitment to institution, department, and colleagues.

VI. Systems-based practice
   A. Coordinate patient care within the medical system as a member of the interprofessional medical critical care team.
   B. Demonstrate an approach to care that prioritizes patient safety and quality improvement.

Contact

Amir Arfaei, MD
Pulmonary Critical Care Medicine

Content Areas of Specific Focus for this Rotation

I. Diagnosis and management of respiratory failure, including respiratory physiology and principles of noninvasive and mechanical ventilation
II. Management of shock and differentiation of different types of shock based on their physiology
III. Management of pain, agitation, and delirium
IV. Management of sepsis, including early management guided by sepsis bundles, appropriate antibiotic selection and source control, assessment of fluid responsiveness, vasopressor selection and management, and appropriate use of adjunctive therapies such as corticosteroids

V. Diagnosis and management of patients who have immunocompromised states
VI. Diagnosis and management of other single- or multiple-organ dysfunction states (ex: AKI), including supportive therapies such as renal replacement therapy
VII. Communication with patients and families about goals of care and End-of-Life Care

Our Expectations of You

- Arrive promptly and pre-round (seeing your patients before attending rounds) each morning, including chart review AND performing a physical exam.
- With few exceptions, continue to follow all patients you admit throughout their ICU stay.
- Present concise, organized rounding presentations in a systems-based format (see separate document with suggested contents) including your assessment and plan.
- Actively participate in didactics.
- Complete your independent reading assignment by the end of the rotation.
- Take ownership over your own learning. Ask questions and be proactive in finding the answers!
- Act with professionalism at all times in interactions with patients and families, nursing and ancillary staff members, and your teammates.

What You Can Expect from Us

- You will be exposed to a wide variety of patients with complex medical critical illness.
- You will have structured didactic teaching as time permits and informal teaching during rounds and at the bedside.
- Completion of assigned reading topics (at minimum) will help to solidify content focus areas.
- You will have access to essential critical care literature.
- We will do everything possible to avoid duty hour violations.
- You will be treated with respect at all times. Please contact rotation leadership if this is not the case.
- We will take your suggestions and feedback seriously. Please complete rotation evaluations and feel free to provide informal feedback to rotation leadership.

Reading List

I. Articles:
   - ARDS
   - Shock
   - Sedation and Delirium
   - End of Life Care in the ICU
   - Maintenance IV Fluids
   - Mechanical Ventilation
   - Management of Acute Kidney Injury: Core Curriculum 2018. PMID 29478864
   - Targeted Temperature Management

II. Online Resources
   - A Primer on Mechanical Ventilation
   - Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU

- Surviving Sepsis Campaign Guidelines
- ATS Reading List
- Pain Management and Addiction

III. For your reference (Dr. Bernstein's summaries):
- Conventional Modes of Mechanical Ventilation
- Highlights of the 2018 Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU
- Hemodynamic Equations and the Swan Ganz Catheter

Detailed Competency-Based Goals and Objectives

As laid out above in the Introduction to Critical Care, the ICU rotation will provide our first year orthopaedic residents with an opportunity to evaluate and manage patients with life-threatening conditions, often affecting multiple organ systems. Training should familiarize the resident both with patient management as a member of a coordinated team and with consultation for critically ill patients on other services. Residents will become skilled in the interpretation of data and performance of procedures necessary to manage these patients, as well as with the social and ethical issues pertinent to acute care and end-of-life care.

Below is a more detailed look at the competency-based learning plan for this rotation.

Patient Care and Procedural Skills

I. All residents must be able to provide compassionate, culturally-sensitive, and appropriate care for critically ill patients.

II. Residents will demonstrate the ability to take a pertinent history and perform a focused physical exam. PGY1s should be able to differentiate ill from stable patients and appreciate and characterize the following physical findings:
- Abnormal respiratory patterns
- Abnormal heart and lung sounds
- SIRS physiology and symptoms and signs of shock
- Focal neurologic abnormalities

III. Residents will understand the indications, contraindications, complications, limitations, and interpretation of following procedures, and become competent in the their safe and effective use:
- Arterial blood gas and arterial line placement
- BLS and ACLS protocols
- Central line placement
- Endotracheal intubation
- Initial ventilator management
- Nasogastric tube placement

IV. In addition, residents will demonstrate knowledge of and be able to counsel patients and/or families regarding the indications and contraindications for the following procedures:
- Acute hemodialysis
- Mechanical ventilation

- PEG placement
- Transfusion

Medical Knowledge

I. Residents will develop an understanding of the pathophysiology, clinical presentation, diagnostic studies and therapy for the following conditions:
   - Acute abdominal pain
   - Acute organ failure (adrenal, kidney, liver, respiratory)
   - Altered mental status and coma
   - ARDS
   - Cardiac arrest
   - Diabetic ketoacidosis
   - Disseminated intravascular coagulation
   - Hemoptysis
   - Heparin-induced thrombocytopenia
   - Hypertensive emergency
   - Hypo/hyperthermia
   - Marked electrolyte abnormalities
   - Massive gastrointestinal bleeding
   - Massive pulmonary embolism
   - Meningitis and encephalitis
   - Pancreatitis
   - Severe intoxication/overdose and withdrawal syndromes
   - Severe stroke
   - Shock
   - Status asthmaticus
   - Status epilepticus
   - Thyroid storm and myxedema coma

II. Residents will become knowledgeable in the following issues pertaining to critical care:
   - Enteral and parenteral nutrition
   - Pharmacology of opioids, paralytic agents, sedation, and pressors
   - Scoring systems for alcohol withdrawal, sedation, and severity of illness
   - Understanding of prevention measures for catheter-associated blood stream infections, deep venous thrombosis, and ventilator-associated pneumonia

III. Residents will be able to understand the indications for ordering and interpretation of results from laboratory and diagnostic studies, including:
   - Arterial blood gas and interpretation of oxygenation and basic acid-base status
   - Analysis of sputum, cerebrospinal, pleural, and joint fluids
   - Chest and abdominal radiographs
   - Computed tomography of head, chest and abdomen
   - Echocardiogram
   - NT-pro-BNP

Practice-Based Learning and Improvement

I. All residents should be able to access current critical care clinical practice guidelines from the Society of Critical Care Medicine, journals, and other sources to apply evidence-based strategies to patient care.
II. All residents should learn to function as part of a team, including the critical care specialist, nurse, pharmacist, and dietician, and social worker to optimize patient care.
III. All residents should respond with positive changes to feedback from members of the health care team.

Interpersonal and Communication Skills

I. Residents must demonstrate written, electronic and verbal communication skills that facilitate the timely and effective exchange of information within the system.
II. Residents must begin to develop interpersonal skills that facilitate collaboration with patients, their families, and other health professionals.

Professionalism

I. All residents must demonstrate strong commitment to carrying out professional responsibilities as reflected in their conduct, ethical behavior, attire, interactions with colleagues and community, and devotion to patient care.
II. All residents should be able to educate patients and their families in a manner respectful of gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation on choices regarding their care.
III. Residents should be able to counsel patients and families both on diagnostic and treatment decisions and on withdrawal of care.

Systems-Based Practice

I. PGY1s must have a basic understanding that their diagnostic and treatment decisions involve cost and risk and affect quality of care.
II. PGY2s must be able to discuss alternative care strategies and the cost and risks involved and articulate current quality issues in Critical Care Medicine.
III. PGY3s must demonstrate an awareness of and responsiveness to established quality measures, risk management strategies, and cost of care within our system.
IV. PGY3s should work with faculty to assess patient care trends in our ICU and raise best practice issues that may merit further study.

Teaching Methods

I. Supervised patient care in the intensive care unit.
   · Residents will initially be directly observed with patients, to facilitate the acquisition of excellent history taking, physical exam, and procedural skills.
   · As residents become more proficient, they will interact independently with patients and present cases to faculty.
   · Initial emphasis will be on diagnosis and basic management.
   · When residents have mastered these skills, focus will be on medical decision-making, and residents will work with supervising physicians to finalize a care plan.

II. Conferences
· Specialty-specific didactics
III. Independent study
· See E-file articles provided by faculty and Reading List provided in the Introduction to Critical Care at the front of this document
· Online educational resources
· Society of Critical Care Medicine – register for the LearnICU app
· American Thoracic Society – ATS reading List
· *MKSAP*
· Up to Date
· Clinical Key

Evaluation

I. Case and procedure logs
II. Mini-CEX
III. Bedside evaluation tool
IV. Verbal feedback
V. 360 Evaluation
VI. Attending evaluations of resident

Rotation Structure

I. Residents should contact the lead intensivist the day prior to determine start time and location. Residents should notify the attending physician promptly if they cannot be available at their assigned time.
II. Residents should spend the majority of their time in the critical care unit, with the exception of required conferences or patient-related time elsewhere in the hospital.
   A. Residents will be involved in discussion of patient presentation, generation of a differential diagnosis, development of a treatment plan, and daily patient followup.
   B. Case-based learning is most effective. Nightly reading/study should be based on patients seen during the day.
   C. When doing consults, the resident should understand the question asked and provide a concise answer.
III. Residents may be asked to do focused literature searches or presentations during the course of the rotation.
IV. Call and weekend responsibilities TBD by the attending physician.
   A. Hours worked must be consistent with ACGME requirements and are subject to approval by the Program Director.
V. Residents have scheduled didactic conferences and should be excused in a timely fashion to attend.

Rounding Guidelines

ICU Attendings have a formal order in which they expect to hear the ICU presentation. Rigorous adherence to this order (especially the order of vitals, exam findings, data, and assessment) will greatly improve rounding efficiency and afford more time for learning and

patient care. Be sure to give your co-residents your full attention when they are presenting their patients; in this way, you will learn more and contribute more to patient care. Interruptions on rounds should be limited to essential urgent/emergent patient care issues only. Non emergent nursing issues, progress notes, and text messages should be attended to after rounds.

Resident

One Liner

- Single succinct sentence that summarizes the reason for admission, major events and trajectory. (ie. "This is a 43 yo woman with ILD who was admitted to the ICU for hypoxemic respiratory failure likely due to pneumonia; she was originally intubated and required pressors, but is now extubated and nearing discharge from ICU").

ICU Nursing Staff

Nursing Script:

-- Major events in last 24 hours (Studies/consultant visits/problems)
-- Current infusions with rates and trajectory (going up/down)
    - Pressor doses, sedative infusions and IVF are especially important
-- Vascular access, Skin Integrity
-- Pain scores (NRS, CPOT or verbal pain descriptor), sedation level (RASS) and comparison to target RASS, delirium screen (CAM---ICU or ICDSC)
-- Spontaneous awakening trial (SAT) and spontaneous breathing trial (SBT) status
-- Activity level/tolerance in the last 24 hours
-- Patient/family concerns, goals, and needs
-- Plans from other teams (e.g., nutritionist, speech therapy, PT).

Resident/Med Student

1. Patient history and 24 Hour Events: in addition to and distinct from those reported by the nurse above.
2. Physical examination always starting with general appearance, VSs, and I/Os followed by organ systems in the following sequence (Note-we expect you to perform a thorough exam but only report either normal and/or positive findings (e.g., "normal abdominal exam;" "pulsatile enlarged liver palpable 5 cm below the right costal margin"):

Skin:

- Skin integrity, breakdown, rash

HEENT:

-- Scleral icterus, conjunctival injection
-- ETT/NG/Trach tubes
-- Oral/labial/dental abnormalities

Heme:

-- Lymphadenopathy, ecchymoses
-- Anticoagulant infusions- type and rate
-- 24 hour transfusion data

Pulm: Intubation Day #__

-- Lung exam including respiratory effort and secretion quantity and quality

-- Vent Settings: Mode/TV/RR (set and measured)/FiO_2/PEEP

-- If relevant, you must present and understand: ml/kg TV PBW, peak pressure, plateau pressure, compliance (ask the RTs for help, if needed)

-- SBT results if relevant (why did they fail? RR, tachycardia? Current RSBI)

CV: On vasoactive drugs x,y,z and which vasopressors were discontinued in past 24 hours.

-- Cardiac exam especially the rhythm and abnormal findings

-- Devices (e.g., Aline, Swan, Impella)

-- Hemodynamics (e.g., cardiac output)

GI/Nutrition:

-- Abdominal exam (Soft or firm? Bowel sounds?)

-- Stools?

-- Current feeds with rate and goal

-- Bladder pressures if relevant

Musculoskeletal:

-- Swelling of extremities

-- Joint swelling, tenderness, effusion

-- Mobility (are PT/OT orders in? Activity in the last 24 hours?)

Neuro:

-- LOC, pupils, moving all extremities and strength, delirium

-- Pain scores (NRS, CPOT, or verbal pain descriptors) and current pain meds (if different from infusions: "Patient required x mgs of fentanyl PRN in the past 24 hours in which the majority was administered overnight because…")

-- Sedation level (RASS), comparison to target RASS, and current sedatives (if different from infusions)

-- Delirium screen (CAM---ICU or ICDSC) and current antipsychotics

**Ask the bedside nurse if (s)he would like to add any other exam findings.

3. Data: CXR and new or updated imaging studies, EKGs; CBC, coags, chemistries, ABGs, serologies; point of care glucose levels; microbiology updates

Assessment and Plan: Provide a summary statement, stated briefly, similar to the One Liner above but focusing on data synthesis and more immediate treatment needs, followed by either a problem by problem assessment/plan or a body system by system assessment/plan- the choice is yours, starting with the respiratory problem/system. Do not include chronic medical conditions that are not relevant to the patient's current illness (e.g., stable hypertension, hypothyroidism, or controlled GERD). With either method, conclude with a review of general ICU considerations, goals of care, and ICU needs:

General ICU:

-- Prophylaxis: Are DVT or GI prophylaxis indicated? If so, is it currently adequate

-- Lines: Do we need to make any changes to the lines? Always ask yourself if there are lines that can be removed.

-- Medications: Always ask yourself if there are meds that can be safely discontinued.

-- Mobility: This is essential, if they are not getting it, what are the barriers? Are PT/OT orders in (should be ordered on EVERY patient, unless specifically contraindicated; intubation is NOT a contraindication)? How should we mobilize the patient today?

Goals of Care/Social: Code status, family dynamics, social situation ICU

NEEDS: What are the physiologic, treatment or nursing needs that are keeping the patient in the ICU? How can we improve these?

Glossary:

NRS: Numeric rating scale, pain scale used preferentially in an alert and cooperative patient, pain rated by patient on a 0---10 scale; 0 = no pain, 1---3 = mild pain, 4---6 = moderate pain, 7---10 = severe pain

CPOT: Critical care pain observation tool, used when a patient cannot report pain; patient is given a score of 0---2 for facial expression, body movements, muscle tension, compliance with ventilator (intubated) or vocalization (extubated), minimum score = 0 (no pain), maximum score = 8 (most pain)

Verbal pain descriptor: Pain rated by patient as mild, moderate, or severe; used when patient unable to cooperate with NRS

RASS: Richmond Agitation Sedation Scale, scale used to measure agitation or sedation level of patient; ---5 = unarousable, 0 = alert and calm; +4 = combative; in most patients target is 0 to ---1

CAM---ICU: Confusion Assessment Model for the ICU; delirium screen performed by nursing staff every shift; patient assessed for 1. acute onset or fluctuating status, 2. inattention, 3. altered level of consciousness, 4. disorganized thinking; scored as positive (delirium present, 1 AND 2 AND 3 or 4) or negative (delirium absent)

ICDSC: Intensive Care Delirium Screening Checklist; delirium screen performed by nursing staff every shift; patient assessed in eight domains. Delirium is present if at least 4 are present

SAT: Spontaneous awakening trial = all sedating medications are stopped, only amount needed are restarted with analgesia targeted first; performed daily on all intubated patients in coordination with SBT unless contraindication present as outlined in CMHS' SAT Checklist document

SBT: Spontaneous breathing trial = trial on a spontaneous breathing mode (usually PSV); performed daily per ICU protocol on all intubated patients in coordination with SAT unless contraindication present as outlined in CMHS' SBT Checklist document; daily SBT increases ventilator---free days, decreases ICU and hospital.

Emergency Medicine - PGY 1

Educational Goals & Objectives

The Emergency Medicine rotation will provide our first year orthopaedic residents with an opportunity to evaluate and manage patients with common acute physical and mental illnesses within a finite time span. Training will emphasize the rapid gathering of a pertinent history, a focused physical exam, and the triage of serious versus minor illnesses. Residents should become familiar with the approach to the acutely ill unstable patient and the appropriate social and medical disposition of patients. Finally, residents will become skilled in the performance of procedures necessary to manage conditions commonly seen in the Emergency Department.

Contact

Eric Moll, MD
Emergency Room Physician

Faculty will facilitate learning in the 6 core competencies as follows:

Patient Care and Procedural Skills

I. All residents must be able to provide compassionate, culturally-sensitive, and appropriate care for patients presenting to the emergency department.

II. Residents will demonstrate the ability to take a succinct, pertinent history and perform a focused physical exam. Residents should be able to differentiate stable from unstable patients and appreciate and characterize the following physical findings:
- Abnormal respiratory patterns
- Abnormal heart and lung sounds
- Assessment of volume status
- Peritoneal signs
- SIRS physiology and symptoms and signs of shock
- Focal neurologic abnormalities

III. Residents will understand the indications, contraindications, complications, limitations, and interpretation of following procedures, with the goal of becoming competent in the their safe and effective use:
- Arthrocentesis (knee)
- Blood draw, arterial and venous
- BLS and ACLS protocols
- Central line placement
- Endotracheal intubation
- Fluorescent staining of cornea
- I&D
- Local anesthesia
- Lumbar puncture

- Nasal packing
- Paracentesis
- Placement of nasogastric tube
- Thoracentesis
- Suturing of lacerations

Medical Knowledge

I. Residents will be introduced to the following issues pertaining to emergency care:
   - Addiction and withdrawal syndromes
   - Basic principles of health insurance coverage
   - Domestic violence, and elder and child abuse
   - Homelessness

II. Residents will become comfortable with a basic approach to an array of conditions affecting patients from pediatrics to geriatrics. These conditions range from acute life-threatening illnesses to sub-acute and chronic illnesses presenting to the Emergency Department. The goal is to understand basic pathophysiology, differential diagnosis, focused diagnostic evaluation, and therapy for these disorders. As experience depends on the case mix at any given time, residents are strongly encouraged to develop their knowledge further with supplemental reading to ensure they become familiar with the following conditions:
   - Acid base disorders
   - Acute abdomen and abdominal pain
   - Acute coronary syndrome and cardiac arrest
   - Acute psychiatric emergencies, such as panic attack, psychosis, or suicidality
   - Acute renal failure
   - Adrenal crisis
   - Airway compromise
   - Altered mental status and coma
   - Anemia
   - Appendicitis
   - Aortic dissection and aortic aneurysm
   - Asthma exacerbation
   - Ataxia and gait disturbances
   - Back pain
   - Bites and stings
   - Bleeding, including GI, nasal, overanticoagulation-related, traumatic, and vaginal
   - Bowel obstruction
   - Breast disorders
   - Burns: chemical and thermal
   - Cardiac arrhythmias
   - Central nervous system and spinal infections
   - Chest pain
   - Child abuse
   - Cholecystitis
   - Congenital heart disease, newly presenting in the Emergency Room

- Congestive heart failure
- Common eye, ear and mouth disorders
- Common poisonings and overdoses
- Compartment syndrome
- COPD exacerbation
- Deep venous thrombosis and pulmonary embolus
- Diabetic ketoacidosis and hyperosmolar hyperglycemic state
- Diarrhea
- Diverticulitis
- Drowning
- Electrolyte abnormalities
- Fever and serious bacterial illness in infants
- Fluid and blood resuscitation
- Headache and facial pain
- Heat emergencies and hypothermia
- Hemoptysis
- Hematology and oncology emergencies, such as blast crisis, cord compression, febrile neutropenia, and superior vena cava syndrome
- Hypertensive urgency and emergency
- Infant and neonatal emergencies
- Infections and disorders of the neck and upper airway
- Intracranial hemorrhage
- Nausea and vomiting
- Ocular and oral emergencies
- Pelvic pain
- Peripheral neurologic lesions
- Pneumonia
- Pneumothorax, including tension pneumothorax
- Pregnancy and obstetric emergencies
- Rashes and generalized serious skin disorders
- Respiratory distress/failure
- Rhabdomyolysis
- Seizure
- Sexually transmitted diseases
- Shock: anaphylactic, cardiogenic, hypovolemic, septic, toxic
- Soft tissue infections
- Sprains, fractures, and overuse injuries
- Stroke and TIA
- Syncope
- Thyroid storm and myxedema coma
- Trauma – abdominal, extremity, penetrating, spine
- Trauma and envenomations from marine fauna
- Traumatic brain injury
- Tuberculosis
- Urinary retention
- Urinary tract infections

- Vaginal bleeding
- Vertigo and dizziness
- Wheezing and stridor
- Wounds

III. Residents will be able to understand the indications for ordering and interpretation of results from diagnostic studies, including:
- Arterial blood gas – interpretation of oxygenation and basic acid-base status
- Computed tomography imaging of head, chest and abdomen
- EKG
- General laboratory studies ordered in the Emergency Department
- Radiographs of chest, abdomen, and extremities
- Ultrasound of abdomen, pelvis

Practice-Based Learning and Improvement

I. Residents should be able to access current clinical practice guidelines from journals and online sources to apply evidence-based strategies to patient care.
II. Residents should learn to coordinate care by involving the patient's primary care doctor and hospital consultants to optimize patient care.
III. Residents should effectively transition patients within the system to the inpatient team, oncoming Emergency Department staff, or home.
IV. Residents should respond with positive changes to constructive feedback from members of the health care team.

Interpersonal and Communication Skills

I. Residents must demonstrate interpersonal verbal and written (electronic) communication skills that facilitate the timely and effective exchange of information. and collaboration with patients, their families, and other health professionals.
II. All residents need to ensure patients and their families understand discharge and follow up instructions.

Professionalism

I. Residents must demonstrate a commitment to carrying out professional responsibilities.
II. All residents should be able to educate patients in a manner respectful of gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation on choices regarding their care.
III. Residents should be able to use time efficiently in the ED to see patients and chart information.

Systems-Based Practice

I. Residents must have a basic understanding that their diagnostic and treatment decisions involve cost and risk and affect quality of care.
II. Residents will begin to learn alternative care strategies and the costs and risks

involved and be introduced to current quality issues in Emergency Medicine.

Teaching

I. Supervised patient care in the Emergency Department:
- Residents will initially be directly observed with patients, to facilitate the acquisition of excellent history taking, physical exam, and procedural skills.
- As residents become more proficient, they will interact independently with patients and present cases to faculty.
- Initial emphasis will be on diagnosis and basic management.
- When residents have mastered these skills, focus will be on medical decision-making, and residents will work with supervising physicians to finalize a care plan.

II. Conferences
- Specialty-specific didactics

III. Independent study will be the primary source of didactic material (20 hours per per week)
- A reading list will be provided at the start of the Emergency Department rotation with the expectation that it will completed by the conclusion of the rotation.
- Journal and Textbook reading: primary sources should be the following:
  - Tintinalli's *Emergency Medicine, A Comprehensive Study Guide*
  - Roberts and Hedges's *Clinical Procedures in Emergency Medicine*
- Online educational resources
  - Up to Date
  - Clinical Key
  - Pain management and addiction

Evaluation

I. Case and procedure logs
II. Mini-CEX
III. Verbal mid-rotation individual feedback
IV. Attending evaluation of resident
V. 360 degree evaluation

Rotation Structure

I. Residents should contact the Emergency Department Education Director or the Emergency Department Manager 1-3 days prior to the rotation start date to determine start time and location.
II. Residents will spend their time in the Emergency Department, doing a variety of different shifts, with the purpose of providing a broad range of experience to achieve the above educational goals.
- Residents are the primary care providers and have first-contact responsibility for a sufficient number of unselected patients presenting to the Emergency Department. Residents will be involved in discussion of patient presentation, generation of a differential diagnosis, development of a treatment plan, and patient follow up. In

addition, residents will be involved in surgical procedures as is appropriate.

III. Case-based learning is most effective. Nightly reading/study should be based on patients seen during the day.

IV. Residents may be asked to do focused literature searches or presentations during the course of the rotation.

V. Call and weekend responsibilities TBD by Dr. Moll.

- Duty hours must be consistent with ACGME requirements and are subject to approval by the program director.

IV. Residents have specialty-specific didactics and should be excused in a timely fashion to attend.

General Surgery/Trauma - PGY 1

Educational Goals & Objectives

Orthopedic surgeons should understand common surgical disease processes as well as recognize the unusual disease conditions that require consultation. The General Surgery/Trauma rotation will provide the first year orthopaedic residents with an opportunity to learn normal and abnormal anatomy, gain basic procedural skills, and facilitate an understanding of commonly encountered issues in emergent, urgent and elective care. It will introduce the concept of how treatment of orthopedic injuries is accomplished within the context of larger trauma conditions. The goal of this rotation is for the intern to learn the basic evaluation and management of general surgical disease with an emphasis on trauma patients with orthopedic injuries.

Faculty Contact

Javier Romero, MD
Program Director, General Surgery

Anthony Carden, MD
Trauma Rotation Director

Faculty will facilitate learning in the 6 core competencies as follows:

Patient Care and Procedural Skills

I. All residents must be able to provide compassionate, culturally-sensitive, and appropriate care for patients in the course of evaluating and treating trauma and surgical disease. Residents should seek directed and appropriate medical consultation when necessary to further patient care.

II. Residents will demonstrate the ability to take a pertinent history and perform a focused physical exam. R1s should be able to differentiate between stable and unstable patients and elicit the following historical details:
    A. Cardiovascular risk factors
    B. Functional status
    C. Nutritional status
    D. Prior surgeries
    E. Pulmonary risk factors

    Residents should begin to recognize the contribution of co-morbidities and medications to a patient's operative risk and risk for postoperative complications.

III. Residents should be able to characterize the following physical findings:
    A. Traumatic injuries
    B. Abdominal distention
    C. Acute abdomen
    D. Anatomic landmarks for procedures
    E. Signs of arterial insufficiency

F. Ulcers (arterial, decubitus, venous stasis, and neuropathic)
G. Volume status

IV. Residents will understand the indications, contraindications, complications, limitations, and interpretation of following procedures, and become familiar with the safe and effective use of procedures they are able to perform on rotation, which may include:
    A. Arterial line placement
    B. Central venous catheter placement
    C. Chest tube placement
    D. Drain removal
    E. Dressings/wound management
    F. Excisional and punch biopsies
    G. Incision and drainage of superficial abscesses
    H. Local anesthetic administration
    I. Nasogastric lavage
    J. Suturing, wound debridement
    K. Bladder aspiration and catheter placement
    L. Nail surgery
    M. Needle aspiration and biopsy
    N. Fast exam
    O. Venous cutdown

Medical Knowledge

I. Residents will develop an understanding of basic anatomy and pathophysiology as it pertains to the presentation of surgical disease. Residents should also have knowledge of the following issues as they pertain to surgical care:
    A. Blood groups and principles of transfusion
    B. Coagulation cascade, disorders of coagulation, and the effects of various medications on bleeding
    C. VTE prophylaxis
    D. Principles of fluid and electrolyte management

II. Residents should understand the natural history of general surgical disease and the expected outcome of conservative, medical and surgical treatment. Residents will gain exposure to the evaluation and treatment of the following conditions commonly cared for by general surgeons in inpatient and outpatient settings:
    A. Abscesses and cysts
    B. Appendicitis
    C. Bariatric and metabolic disorders that have surgical approaches
    D. Biliary colic, cholecystitis, cholangitis
    E. Bowel obstructions
    F. Breast benign and malignant disorders
    G. Burns
    H. Colon inflammation
    I. Colon cancer

J. Esophageal motility, reflux, and neoplastic conditions
K. Foreign body removal
L. Gallstones
M. Gastric disorders including ulcers, perforation, and tumors
N. Hemorrhoids
O. Liver diseases including portal hypertension, neoplasms, and biliary obstruction
P. Pancreatic inflammatory, neoplastic, and cystic disorders
Q. Skin disorders: infections, tumors, ulcers
R. Small Bowel inflammatory and neoplastic conditions
S. Splenic dysfunctions that require surgical approaches
T. Thyroid and other endocrine disorders including tumors, hyper and hypofunction
U. Wounds: avulsion, bite, crush, laceration, penetrating, shear injury
V. Ulcers: arterial, decubitus, venous stasis, and neuropathic
W. Vascular disorders: venous and arterial

III. Residents will learn to recognize acute conditions requiring urgent/emergent diagnosis and treatment, including:
A. Acute abdomen
B. Bowel obstruction
C. Cardiopulmonary arrest
D. Compartment syndrome
E. Hemorrhage
F. Mesenteric ischemia
G. Necrotizing fasciitis
H. Pulseless extremity
I. Trauma: penetrating and blunt

IV. Residents will appreciate the indications for ordering, appropriate use, and interpretation of laboratory and imaging studies:
A. To triage patients with acute illness and trauma
B. To further evaluate surgical patients, particularly when the diagnosis is unclear
C. In preparation for surgery
D. In the context of patient co-morbidities and pretest probability of disease

V. Residents will become proficient in postoperative care, including appropriate use and duration of peri-operative antibiotics, drain and suture removal, dressing changes, and indications for and duration of VTE prophylaxis.
Residents will gain experience with the following postoperative conditions:
A. Atelectasis
B. Deep venous thrombosis
C. Fat embolus
D. Fever
E. Hemorrhage
F. Ileus
G. Malnutrition
H. Oliguria
I. Pneumonia

J. Pulmonary embolus
K. Respiratory insufficiency
L. Shock
M. Superficial and deep thrombophlebitis
N. Transfusion reaction
O. Uncontrolled pain
P. Urinary retention
Q. Volume overload
R. Wound dehiscence
S. Wound infection

VI. All residents will have the opportunity to assist in surgery and will gain experience with the following topics:
    A. Pre-procedure patient preparation e.g. NPO, preparation for colonoscopy, medication management, labs, etc.
    B. Sterile technique and preparation and draping of the operative patient
    C. Induction of anesthesia
    D. Management of conscious sedation
    E. Knowledge of basic anatomy
    F. Classification of wounds
    G. Estimation of blood loss
    H. Fluid and electrolyte replacement
    I. Function of and types of instruments, drains and dressings
    J. Wound closure
    K. Use of electrocautery
    L. Use of minimally invasive and endoscopic techniques
    M. Indications and uses of stapling devices

VI. Residents should become fluent in social, legal and ethical issues relevant to patients undergoing surgery, including understanding the concepts of informed consent, power of attorney, advanced directives, end of life issues, and organ donation.

Practice-Based Learning and Improvement

I. All residents should be able to access current national guidelines to apply evidence-based strategies to patient care.

II. All residents should participate in case-based therapeutic decision-making, involving the primary care provider, surgeon and, where appropriate, other specialists.

III. Residents should learn to coordinate patient care as part of a larger team, including the nurse, pharmacist, dietician, physical therapist, and social worker to optimize patient care.

IV. All residents should respond with positive changes to constructive feedback from members of the healthcare team.

Interpersonal and Communication Skills

I. Residents must demonstrate organized and articulate written (electronic) and verbal communication skills that build rapport with patients and families, convey information to other health care professionals, and provide timely documentation in the chart.

II. Residents should supervise and ensure seamless transitions of care between the surgical team and the primary care team and between inpatient and outpatient care.

III. Residents must communicate with the microbiology staff, lab staff, and pathologist to obtain results in a timely fashion and to facilitate their interpretation.

IV. Residents should understand and comply with HIPPA with respect to use of health information.

V. Residents must learn to appreciate the impact of surgery on a patient's quality of life, help patients and their families make decisions for or against surgical intervention, and learn the essential elements of informed consent.

Professionalism

I. Residents must demonstrate a commitment to carrying out professional responsibilities.

II. All residents should treat patients with respect regardless of the patient's gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation.

Systems-Based Practice

I. Residents must have a basic understanding that their diagnostic and treatment decisions involve cost and risk and affect quality of care.

II. Residents should participate in ongoing surgical initiatives to improve quality while they are on service.

III. Residents should become aware of alternative therapies and their costs, risks, and benefits.

Teaching Methods

I. Supervised patient care in the inpatient and outpatient setting and in the operating room.
   A. Residents will initially be directly observed with patients to facilitate the acquisition of excellent history taking and physical exam skills.
   B. As residents become more proficient, they will interact independently with patients and present cases to faculty.

1. Initial emphasis will be on diagnosis and basic management.
2. When residents have mastered these skills, focus will be on medical decision-making and technical skills, and residents will work with supervising physicians to finalize a care plan.

II. Conferences
   A. Specialty-specific didactics

III. Independent study
   A. Journal and Textbook reading
      1. Sabiston
      2. Schwartz
      3. Greenfield
      4. American Journal of Surgery
      5. Journal of the American College of Surgeons
   B. Electronic resources
      1. Clinical Key
      2. MD Consult
      3. Up to Date
      4. Pain management and addiction

Evaluation

I. Verbal mid-rotation individual feedback

II. 360 degree evaluation

III. Attending evaluation of resident

Rotation Structure

I. Residents should contact the surgery attending the day prior to determine start time and location.

II. Residents should divide their time between the hospital, the operating room, and the clinic as appropriate to achieve the above educational goals.
   A. Rotations are a "hands-on" learning experience. Residents will be involved in discussion of patient presentation, differential diagnosis, decision for or against surgical intervention, and patient follow up. In addition, residents will be involved in surgical procedures as is appropriate.
   B. Continuity of care should be attempted as much as possible.
   C. Case-based learning is most effective. Nightly reading/study should be based on cases reviewed during the day.
   D. Residents may be asked to do focused literature searches or presentations during the course of the rotation.

E. When doing consults, ensure the resident understands the question asked and provides a concise answer.

III. Work hour responsibilities are as follows:
   A. 5:30am - 5:30pm all days of the week, and on Tuesdays stay until after evening sign out up to 7:30pm at the latest
   B. Saturday morning help with rounds only
   C. No work on Sunday
   D. No overnight call
   E. Duty hours must comply with ACGME requirements and are subject to change at the discretion of the program director.

IV. Residents have specialty-specific didactics and should be excused in a timely fashion to attend. Attendance at these conferences is mandatory.

Hospital Medicine - PGY 1

Educational Goals & Objectives

The Hospital Medicine rotation will provide our first year orthopaedic residents with an opportunity to evaluate and manage patients with common acute medical conditions. Training will focus not only on clinical care issues, but also on coordinating patient care with non-physician providers, subspecialists, and allied health professionals; on transitions of patient care; and on the spectrum of leadership, cost, quality and performance activities within the purview of Hospital Medicine.

Contact

Hannah Robinson, DO
Program Director, Internal Medicine

Faculty will facilitate learning in the 6 core competencies as follows:

Patient Care and Procedural Skills

I. All residents must be able to provide compassionate, culturally-sensitive direct care for acutely ill patients.

II. Residents will demonstrate the ability to take a symptom-driven history and perform a focused physical exam. Residents should be able to differentiate ill from stable patients and appreciate abnormal physical findings, particularly abnormal heart and lung sounds, focal neurologic abnormalities, and rashes.

III. Residents will understand the indications, contraindications, complications, limitations, and interpretation of following procedures, and become competent in their safe and effective use:

- Arterial blood gas
- Central line placement
- Thoracentesis
- Paracentesis
- Lumbar puncture

In addition, residents will demonstrate knowledge of and be able to counsel patients and/or families regarding the indications and contraindications for the following procedures:

- Acute hemodialysis
- Mechanical ventilation
- PEG placement
- Transfusion

Medical Knowledge

I. Residents will develop an understanding of the pathophysiology and approach to common complaints in hospitalized patients, such as:

- Acute abdominal pain
- Altered mental status
- Chest pain
- Cough and Dyspnea
- Diarrhea
- Edema
- Electrolyte abnormalities
- Fever
- Gastrointestinal bleeding
- Hypertensive urgency
- Rash
- Syncope
- Weakness
- Weight loss

Residents will be introduced to an initial evidence-based management approach for hospitalized patients with the following conditions:

- Acute renal failure
- Asthma exacerbation
- Cellulitis
- CHF
- Common arrythmias
- COPD exacerbation
- Diabetes management
- Deep venous thrombosis and pulmonary embolus
- NSTEMI
- Pancreatitis
- Perioperative care
- Pneumonia, community-acquired and health-care associated
- Seizure
- Stroke

II. Residents will become familiar with the following issues pertaining to hospital care:

- ACLS protocols
- Enteral and parenteral nutrition and PEG tube placement
- National guidelines for prevention of catheter-associated blood stream infections, deep venous thrombosis, and stress ulcer prophylaxis
- Palliative care and hospice services

III. Residents will be able to understand the indications for ordering and interpretation of results from laboratory and diagnostic studies, including:

    - Serologies and chemistries
    - Arterial blood gas

- Analysis of sputum
- Chest and abdominal radiographs
- Echocardiogram
- EKGs and continuous EKG tracings
- NT-pro-BNP
- Computed tomography imaging of head, chest and abdomen

IV. All residents will be fully trained in treatment and infection control protocols and procedures (e.g. personal protective equipment [PPE]) and trained clinically to properly recognize and care for COVID-19 patients.

Practice-Based Learning and Improvement

I. Residents should be able to access current clinical practice guidelines from the Society of Hospital Medicine, journals, and other sources to apply evidence-based strategies to patient care.
II. Residents should learn to function as part of a team, including the hospitalist, nurse, pharmacist, and dietician, and social worker to optimize patient care.
III. All residents should respond with positive changes to constructive feedback from members of the health care team.

Interpersonal and Communication Skills

I. Residents must demonstrate written (electronic) and verbal communication skills that facilitate the timely and effective exchange of information within the system.
II. Residents will develop interpersonal skills that facilitate collaboration with patients, their families, and other health professionals.
III. Residents will begin to counsel patients and families both on diagnostic and treatment decisions and on withdrawal of care.

Professionalism

I. All residents must demonstrate a commitment to carrying out professional responsibilities.
II. All residents should be able to educate patients in a manner respectful of gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation on choices regarding their care.

Systems-Based Practice

I. Residents must have a basic understanding that their diagnostic and treatment decisions involve cost and risk and affect quality of care.
II. Residents will learn to discuss alternative care strategies and the cost and risks involved and articulate current quality issues in Hospital Medicine.

Teaching Methods

I. Supervised patient care in the hospital
- Residents will initially be directly observed with patients, to facilitate the acquisition of excellent history taking, physical exam, and procedural skills.
- As residents become more proficient, they will interact independently with patients and present cases to faculty with initial emphasis on diagnosis and basic

management. As residents progress in their skill set, focus will shift to medical decision-making, and residents will work with supervising physicians to finalize a care plan.

II. Conferences
- Specialty-specific didactics

III. Independent study
- Journal and Textbook reading
  - *Understanding Patient Safety* (McGraw-Hill's Lange Series, 2017)
  - *Hospital Medicine* (Lippincott Williams & Wilkins, 2005)
  - *MKSAP*
  - Additional reading as recommended by the Hospitalist team
- Online educational resources
  - Pain management and addiction
  - Up To Date
  - Clinical Key
  - Centers for Disease Control and Prevention
  - World Health Organization: How to put on and remove personal protective equipment (PPE)

Evaluation

I. Procedure logs
II. Mini-CEX
III. Bedside procedural skills evaluation
IV. Discharge summary evaluation
V. 360 evaluation
VI. Verbal mid-rotation individual feedback
VII. Attending evaluation of resident

Rotation Structure

I. Residents should contact the lead hospitalist the day prior to determine start time and location.
II. Residents should spend the majority of their time admitting, rounding or consulting on patients in the hospital, with the exception of required conferences or patient-related time elsewhere in the hospital.
- Rotations are a "hands-on" learning experience. If you have a resident, send them to see a patient. Try to let them do a majority of the procedures.
- Case-based learning is very effective. Give your resident patient-based questions to research and report back to you.
- Consider having your resident do a short presentation to the group on a pertinent topic.
- When doing consults, ensure the resident understands the question asked and provides a concise answer.

III. Call and weekend responsibilities TBD by the hospitalist
- Duty hours must be consistent with ACGME requirements and are subject to approval by the program director.

IV. Residents have specialty-specific didactics and should be excused in a timely fashion to attend.

Vascular Surgery - PGY 1

Educational Goals & Objectives

The Vascular Surgery rotation will provide the resident with an understanding of vascular anatomy and physiology as well as the opportunity to diagnose and manage conditions affecting much of the body's circulatory system. Our first year orthopaedic residents will have the opportunity to evaluate and manage patients with both common and complex vascular disorders in both inpatient and outpatient settings. The goal is to familiarize them with basic mechanisms, clinical manifestations, diagnostic strategies and management of vascular disease as well as disease prevalence and prevention. Depth of exposure should be such that they can develop competency in the prevention of vascular disease, knowledge of indications for procedures, management of common disease, including basic surgical techniques; management of the acutely ill patient, and appropriate indications for referral.

Contact

Gregory Albaugh, DO
General and Vascular Surgery

Faculty will facilitate learning in the 6 core competencies as follows:

Patient Care and Procedural Skills

I. All residents must be able to provide compassionate, culturally-sensitive care for patients to prevent and treat vascular disease.
   - Residents should seek directed and appropriate medical or subspecialty surgical consultation when necessary to further patient care.

II. Residents will demonstrate the ability to take a pertinent history and perform a focused physical exam. Residents should be able to differentiate between stable and unstable symptoms and elicit the following historical details:
   - risk factors for the development of vascular disease
   - Factors that increase perioperative risk, including age, comorbidities, immune status, metabolic disorders, pregnancy, and substance abuse
   - Personal and family history of vascular disease, bleeding disorders, or anesthetic reaction
   - Symptoms associated with vascular disease and their duration
   - Complete medication history, including antiplatelet agents and anticoagulants

III. Residents should be able to recognize and characterize the following physical findings:
   - Assessment of peripheral pulses
   - Asymmetry of blood pressures
   - Cardiac murmurs
   - Jugular venous distention
   - Lower extremity edema
   - Signs of shock

- Signs of wound infection
- Vascular bruit

IV. Residents will understand the indications for and complications of the following procedures, and become competent in their safe and effective use:
- ACLS
- Arterial and central line placement and invasive hemodynamic monitoring
- Basic vascular dissection and anastomosis
- Diabetic foot drainage and debridement
- Dialysis access creation

In addition, residents will demonstrate knowledge of the indications, contraindications, and appropriate timing for the following procedures, and be able to counsel patients and families on their role in the treatment of vascular disease:
- Endovascular interventions, including balloon angioplasty, stents, and coils
- Surgical bypass

Medical Knowledge

I. Residents will develop an understanding of the basic pathophysiology and approach to the following vascular conditions:
- Abdominal aortic aneurysm
- Amaurosis fugax
- Arterial insufficiency of the lower extremity (claudication, rest pain, ischemic tissue loss)
- Diabetic foot, including Charcot joint, neuropathy, infection, ischemia and ulcer
- Lymphedema
- Mesenteric ischemia
- Peripheral aneurysms
- Renal artery disease
- Reynaud's phenomenon
- Transient ischemic attack and stroke
- Vasospastic disease of the upper extremity and hand ischemia
- Venous disease, acute and chronic

II. Residents will also gain an understanding of the following issues related to the identification and treatment of vascular disease:
- Screening for asymptomatic disease
- Evidence-based algorithm for electing medical versus surgical therapy
- Timing and appropriate use of surgical intervention to treat lower extremity arterial disease
- Dialysis access creation and management
- Preoperative evaluation and assessment of risk
- Vascular anatomy

III. Residents will be able to evaluate patients and perform initial management for *acute* vascular conditions, including:

- Acute aortic dissection
- Acute aortic rupture
- Compartment syndrome
- Deep venous thrombosis
- Pulseless extremity
- Shock
- Trauma to major blood vessels

IV. Residents will become familiar with operating room procedures, including
- Basic patient positioning
- Induction of anesthesia
- Preparing and draping the operative field
- Sterile technique
- Basic surgical technique, including wound closure with sutures or staples
- Function and types of instruments, drains, dressings, and sutures
- Estimation of blood loss

V. Residents will become competent in basic postoperative care, including:
- Appropriate transfusion of blood products
- Knowledge of appropriate thromboembolic prophylaxis
- Recognition of facial dehiscence, hematoma, and wound infection
- Recognition of transfusion reaction
- Use of perioperative antibiotics

VI. Residents will become familiar with indications, contraindications, dosing and route for commonly used drugs in the practice of vascular surgery, including:
- Analgesics
- Anticoagulants
- Anti Inflammatory agents
- Antiplatelet agents
- Cardiac medications
- Diuretics
- Laxatives
- Local anesthetics
- Narcotics
- Thrombolytics

VII. Residents will be able to understand the indications, limitations, and interpretation of the following laboratory values and procedures:
- Ankle-brachial index and toe-brachial index
- Carotid angiography
- CBC
- Chemistries, including BNP, CK, Creatinine and GFR, and Troponin
- D-dimers
- ECG
- Hand-held Doppler and Duplex scanning

- Imaging with CT, MRI, radiographs, and vascular ultrasound
- Peripheral vascular angiography

VIII. Residents should become fluent in health maintenance concerns relevant to vascular disease and be able to counsel patients appropriately on:
- Nutrition
- Cholesterol screening
- Blood pressure screening
- Smoking cessation
- Exercise prescription
- Proper foot care

Practice-Based Learning and Improvement

I. All residents should be able to access current clinical practice guidelines (e.g. Society for Vascular Surgery) to apply evidence-based strategies to patient care.
II. Residents should develop skills in evaluating new studies in published literature, through Journal Club and independent study.
III. Residents should develop leadership skills to become adept at coordinating patient-centered care as part of a larger team, including the vascular surgeon, nurse, operating room team, vascular lab technicians, and primary care provider.
IV. All residents should respond with positive changes to feedback from members of the health care team.

Interpersonal and Communication Skills

I. Residents must demonstrate organized and articulate written (electronic) and verbal communication skills that build rapport with patients and families, convey information to other health care professionals, and provide timely documentation in the chart.
II. Residents must also develop interpersonal skills that facilitate collaboration with patients, their families, and other health professionals.
III. Residents should be attuned to end of life issues in patients with advanced age and/or multiple comorbidities.
IV. Residents should ensure seamless transitions of care between primary and consulting teams and between inpatient and outpatient care.
V. Residents should be able to counsel patients and families both on diagnostic and treatment decisions and on withdrawal of care.

Professionalism

I. All residents must demonstrate a commitment to carrying out professional responsibilities.
II. All residents should be able to educate patients in a manner respectful of gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation on choices regarding their care.
III. Residents should be able to use time efficiently in the clinic to see patients and chart

information.

Systems-Based Practice

I. Residents must be able to articulate alternative care strategies and the cost and risks involved.
II. Residents should be aware of current issues in the field of vascular medicine, such as the discourse on use of endovascular techniques.
III. Residents must demonstrate an awareness of and responsiveness to established quality measures, risk management strategies, and cost of care within our system.

Teaching Methods

I. Supervised patient care in the inpatient and outpatient setting and in the operating room.
- Residents will initially be directly observed with patients to facilitate the acquisition of excellent history taking and physical exam skills.
- As residents become more proficient, they will interact independently with patients and present cases to faculty.
    - Initial emphasis will be on diagnosis and basic management.
    - When residents have mastered these skills, focus will be on medical decision-making and technical skills, and residents will work with supervising physicians to finalize a care plan.
- All residents will spend supervised time in the operating room, with increasing responsibility as appropriate to their skill level

II. Conferences
- Specialty-specific didactics

III. Independent study
- Journal and Textbook reading TBD by vascular surgery attending
- Online educational resources
    - Up to Date
    - Clinical Key

Evaluation

I. Mini-CEX
II. Bedside procedural skills evaluation
III. Mid-rotation individual feedback session
IV. Attending evaluation of resident

Rotation Structure

I. Residents should contact the attending vascular surgeon the day prior to determine start time and location.
II. Residents should divide their time between the hospital, the operating room, and the clinic as appropriate to achieve the above educational goals.

- Residents on hospital vascular surgery rotations will have rounding responsibilities each day as specified by the attending physician. Residents on the inpatient vascular service will perform postoperative checks on the day of surgery for all patients undergoing surgery. Residents will be involved in surgical procedures as appropriate to their level of training.
- Residents in clinic will have scheduled patients and be involved in discussion of patient presentation, differential diagnosis, decision for or against surgical intervention, and patient follow up.
- When possible, residents should follow their patients from preoperative clinic through surgery and subsequently for postoperative care.
- Case-based learning is most effective. Nightly reading/study should be based on cases reviewed during the day.
- Residents may be asked to do focused literature searches or presentations during the course of the rotation.
- When doing consults at the request of colleagues, residents should clarify the question being asked and provide a concise answer.

III. Call and weekend responsibilities TBD by the attending physician.
- Duty hours must be consistent with ACGME requirements and are subject to approval by the program director.

II. Residents have specialty-specific didactics and should be excused in a timely fashion to attend.

Hand Surgery - PGY 2

Description

The goal of the hand and upper limb rotation is to provide a breadth of experience and exposure to disorders affecting the hand and upper limb. Residents gain outpatient experience both at a local outpatient clinic and the Midtown Medical Group. The operative experience is divided between a local outpatient surgery center, VCMC, and CMH same day surgery. The rotation is 3 months in length and takes place during the PGY2 year. The rotation serves as the introduction to this subspecialty early in the residents training to help give them exposure to all the various subspecialities prior to the end of the beginning of the 4th year, so they can make an educated choice on potential fellowship training.

Resident Role and Expectations

The resident on the hand service will be a primary member of the care team and provide patient care under the supervision of attending staff. The resident will gain proficiency in soft-tissue handling and microsurgery as well as in the treatment of a broad variety of hand and upper limb disorders. The resident will work directly with patients in both the clinic and operating room with increasing independence as, under teaching faculty guidance, he/she progresses in knowledge and skills during the rotation. Finally, the resident will understand the appropriate use of rehabilitation services.

Readings

Green's Operative Hand Surgery
Scott Wolfe

Faculty Contact

Sahil Vohra, DO
Orthopaedic Hand Surgery

Educational Goals and Objectives

Patient Care and Procedural Skills

I. Develop clinical acumen in diagnosing and treating conditions involving the hand. Analyze available information to make diagnostic and therapeutic decisions based upon sound clinical judgment, best available evidence, and patient preferences. Perform at an upper resident's level in surgical techniques pertaining to soft tissue, nerve, skeletal structures, and microsurgical procedures. Reflect on performance in the microsurgery lab with a goal of self-evaluation and improvement of surgical skills.
II. Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:
    A. Flexor tendon repair

B. Four corner wrist fusion
C. DCP plating for transverse metacarpal fractures
D. Closed reduction and pinning of metacarpal fractures
E. Neutralization plate with lag screw fixation for short oblique metacarpal fractures
F. Metacarpal head fracture ORIF
G. Epineural nerve repair
H. Endoscopic carpal tunnel release
I. Open carpal tunnel release
J. Trigger finger/thumb release
K. Dupuytren's open fasciotomy
L. Excision of dorsal ganglion cyst

Medical Knowledge

I. Understand basic disorders that affect the upper extremity and the underlying anatomy, including alterations in the setting of trauma and disease. Interpret information from the history and physical examination, imaging, and laboratory studies to understand the patient's presenting problem. Develop an understanding of the indications for surgery and learn the methodology and range of procedural options available for appropriate treatment, including microsurgical procedures, techniques for soft tissue handling, the microvascular environment of the limb, and the pathology of systemic disease processes affecting the upper extremity.
II. Demonstrate competency and understanding in the following topics:
    A. Carpal tunnel syndrome
    B. Trigger finger
    C. De Quervain's tenosynovitis
    D. 1st CMC joint arthritis
    E. Animal and human bite injuries
    F. Pyogenic flexor tenosynovitis
    G. Ganglia of the wrist and hand
    H. Mallet finger
    I. Joint dislocations of the hand
    J. SLAC wrist
    K. SNAC wrist
    L. Scaphoid fracture
    M. Fingertip amputations and flaps
    N. Distal radius fractures

Interpersonal and Communication Skills

I. Develop interpersonal skills necessary to communicate effectively with patients, families, nursing staff, mid-level healthcare providers, ancillary staff, medical students, fellow residents, and attending staff. Create an atmosphere of collegiality and mutual respect with all providers involved in the care of patients. Talk to patients and family members about sensitive issues that relate to a patient's illness, e.g. loss of function, need for major surgery, and coping with the patient's altered needs in his/her home setting. Write an

effective and timely consultation note that summarizes the findings and recommendations of the orthopaedist and clarifies the continued role and responsibility of the consultant. Share knowledge with team members to foster an environment of learning. Interpret and describe radiographic findings to peers effectively using commonly accepted descriptors.

Practice-Based Learning and Improvement

I. Investigate and evaluate patient care practices, appraise and assimilate scientific evidence, and reflect upon and incorporate this information to improve patient care practices. Record and track procedures. Be involved in the teaching of medical students and colleagues. Present patients for discussion during rounds and seminars, with appropriate literature references to support planned interventions. Understand the role of study design and the use/misuse of statistical analysis in reviewing the results of published research in orthopaedic surgery. Identify standardized guidelines for diagnosis and treatment of disorders of the upper limb and learn the rationale for adaptations that optimize treatment. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors and subordinates to improve patient care).

Professionalism

I. Demonstrate respect, compassion, honesty, and integrity. Have a commitment to ethical principles, including protecting the confidentiality of patient information and providing patients with informed consent. Demonstrate responsiveness to the needs of patients and society in a way which supersedes self-interest. Demonstrate accountability to patients, society, and to the profession. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities.

Systems-Based Practice

I. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing, without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the operating room, emergency department, and wards. Direct patients and their families toward individuals within the institution that can help them access support and resources.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation

VI. 360 degree evaluation
VII. Weekly case conference

Pediatric Orthopaedics - PGY 2

Description

The PGY2 pediatric orthopaedic rotation focuses on the evaluation and care of pediatric patients with orthopaedic concerns related to congenital, overuse, trauma, or systemic diseases. This rotation emphasizes the developing body and skeleton and how these conditions are managed at different stages of human development. Residents are provided with housing in Los Angeles and rotate at Children's Hospital of Los Angeles (CHLA) for three months in the PGY2 year.

Resident Role and Expectations

Residents function as important members of the pediatric orthopaedic service and collaborate with residents from other pediatric services to evaluate and manage pediatric patients with orthopaedic concerns. Residents will have a wide range of clinical and operative responsibilities and participate in outpatient procedures and inpatient surgeries in both primary and assistant roles, progressively gaining both clinical acumen and surgical skills under supervision of teaching attending faculty. Given the tertiary nature of the institution, the clinical and surgical experience will expose the resident to many rarer pediatric conditions not commonly seen in community practice, in addition to common pediatric trauma, sports, and congenital issues. The PGY2 will progressively gain independence and autonomy in the clinical and surgical setting and under attending faculty and senior resident guidance, learn to apply their skills in the pediatric realm. PGY2 residents should be able to formulate appropriate, evidence-based treatment plans for both operative and non operative pediatric orthopaedic injuries and conditions. They will be expected to develop skill and increased independence in the manipulation, closed reduction, and casting of fractures in the outpatient and ER setting. In the operating room, the PGY2 will be expected to demonstrate competence in set-up, approach, soft tissue handling, and closures of cases. The resident will participate in a minimum of 4 hours of regularly scheduled didactics covering pediatric orthopaedic with local orthopaedic faculty present to facilitate discussion. Working at CHLA also provides our PGY2 residents with the opportunity to work closely with pediatric residents and faculty from Children's Hospital of Los Angeles Pediatric Residency Program, which resides at CHLA, to care for pediatric patients in a collaborative fashion. PGY2 residents will also attend weekly formal didactics with the CHLA pediatric residents and pediatric faculty, which include education on general pediatric topics and pediatric orthopaedics as well as pediatric M&M and case conference. PGY2 resident will also be responsible for presenting one peer reviewed article per month at the monthly pediatric journal club.

Readings

Practice of Pediatric Orthopaedics
Diab & Staheli

OKU Pediatrics
Jeffrey E. Martus

Tachdjian's Pediatric Orthopaedics
John A. Herring

Faculty Contact

Rachel Y. Goldstein, MD
CHLA Site Director
Director of Hip Preservation
Pediatric Orthopaedic Surgery

Robert M. Kay, MD
Chief, Division of Orthopaedic Surgery
Pediatric Orthopaedic Surgery

Educational Goals and Objectives

Patient Care and Procedural Skills

1. The orthopaedic resident must be able to provide patient care that is compassionate, age appropriate, and effective for the treatment of health problems and the promotion of healing following an injury or illness. Through meeting the following objectives, the resident will achieve this goal:
    - 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 and review those with the attending pediatric orthopaedic surgeon.
    - 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. Provide anticipatory guidance to patients and their families.
    - Demonstrate competence in the diagnosis and management of adult and pediatric orthopaedic disorders.
    - Observation and treatment of both inpatients and outpatients with a wide variety of orthopaedic disorders.
    - Demonstrate competence in their ability to perform all medical and invasive procedures considered essential for the area of practice.
    - Demonstrate their ability to work with other healthcare professionals, including those from other disciplines to provide patient-focused care.
    - Demonstrate responsibility for both acutely and chronically ill patients so as to learn the natural history of pediatric orthopaedic disorders as well as the effectiveness of treatment programs and the impact of growth on these disorders.

Medical Knowledge

I. 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 pediatric patient care. The following objectives are milestones in achieving this goal:
    - Demonstrate expertise in the knowledge of those areas appropriate for an developing PGY2 orthopaedic surgeon.
    - Demonstrate investigatory and analytical thinking approach to clinical situations.
    - Become educated in pediatric orthopaedic trauma (acute and reconstructive), metabolic and genetic conditions, tumors, neuromuscular conditions, spinal conditions, hip conditions, foot and ankle conditions, amputations and prosthetics, hand conditions, athletic injuries and general pediatric orthopaedics.
    - Develop a scholarly evidence based approach to clinical problem solving, self-directed study, development of analytic skills and surgical judgment and research.
    - Understand the role of physical and occupational therapists and of orthotists and prosthetists in the rehabilitation and ongoing management of pediatric orthopaedic disorders.
    - Understand normal physiologic mechanisms and the pathogenesis and complications of pediatric orthopaedic disorders.
    - Understand the indications, risks and limitations of the commonly performed procedures in the subspecialty.
    - Understand the anatomy, diagnose, and manage children and adolescents with brachial plexus palsies.
    - Comprehend the embryology, diagnosis, and treatment of children with congenital limb differences.
    - Interpret x-rays, diagnose, and formulate a treatment algorithm for pediatric fractures of the upper extremity.
    - Understand the injury pattern, anatomy, diagnose, acute problems, and manage persons with spinal cord injuries.
    - Comprehend the acute and chronic problems of persons with spinal cord injury.
    - Understand, recognize, and manage simple bone cysts and benign tumors that occur in the growing child.
    - Understand the etiology, diagnosis and treatment of clubfoot and other common foot disorders in children.
    - Understand the characteristics, pathogenesis, diagnostic features, classification and management of common neuromuscular disorders.
    - Understand the clinical manifestations, treatment, and long-term prognosis of limb length inequality and deformity.

Practice-Based Learning and Improvement

I. The orthopaedic resident must demonstrate the ability to investigate and evaluate her/his 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. The following objectives serve as elements of achieving these goals:

- 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.
- Acknowledge gaps in personal knowledge and expertise and frequently ask for feedback from teachers and colleagues.
- Demonstrate computer literacy and basic computer skills in clinical practice.
- Describe basic concepts in clinical epidemiology, biostatistics, and clinical reasoning.
- Categorize the study design of a research study.
- Continually assess performance by evaluating feedback and assessments.
- Develop a learning plan based on feedback with some external assistance.
- Demonstrate use of published review articles or guidelines to review common topics in practice.
- Use patient care experiences to direct learning.
- Rank study designs by their level of evidence.
- Identify bias affecting study validity.
- Formulate a searchable question from a clinical question.

Interpersonal and Communication Skills

I. 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. The following are component objectives towards this goal:

- 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 in 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.
- Communicate with patients about routine care (e.g., actively seek and understand the patient's/family's perspective; focus in on the patient's chief complaint and ask pertinent questions related to that complaint).
- Recognize and communicate the role as a team member to patients and staff.

- Respond to requests for information.
- Communicate competently within systems and other care providers and provide detailed information about patient care (e.g., demonstrate sensitivity to patient and family-related information gathering or information sharing within the social cultural context; begin to engage patient in patient-based decision making, based on the patient's understanding and ability to carry out the proposed plan; demonstrate empathic response to patient's and family's needs; actively seek information from multiple sources, including consultations; avoid being a source of conflict; obtain informed consent [risks, benefits, alternatives, and expectations]); actively participate in team-based care; support activities of other team members, communicate their role to the patient and family.

Professionalism

I. The orthopaedic resident must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.
   - 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 diversity in culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities.
   - Demonstrate commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent and business practice.
   - Consistently demonstrate behavior that conveys caring, honesty, and genuine interest in patients and families.
   - Recognize the importance and priority of patient care, with an emphasis on the care that the patient wants and needs; demonstrate a commitment to this value.
   - Understand and ask for assistance when needed.
   - Exhibit 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.
   - Understand basic principles and aspects of the general maintenance of emotional, physical, mental health, and issues related to fatigue/sleep deprivation.
   - Demonstrate an understanding of the importance of compassion, integrity, respect, sensitivity, and responsiveness while exhibiting these attitudes consistently in common and uncomplicated situations.
   - Consistently recognize ethical issues in practice.
   - Discuss and address socioeconomic barriers in the evaluation and treatment of patients.
   - Recognize limits of knowledge in common clinical situations and ask for assistance.

- Recognize the value of humility and respect towards patients and associate staff.
- Demonstrate adequate management of personal, emotional, physical, mental health, and fatigue.

Systems-Based Practice

I. 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.
   - Work effectively in various health care delivery settings and systems relevant to orthopaedics.
   - Coordinate patient care within the healthcare system relevant to their orthopaedics.
   - Practice cost-effective health care and resource allocation that does not compromise quality of care.
   - Advocate for quality patient care and optimal patient care systems.
   - Participate in identifying system errors and implementing potential system solutions.
   - Describes basic levels of systems of care (e.g., self-management to societal).
   - Understand the economic challenges of patient care within our healthcare system.
   - Recognize the importance of complete and timely documentation in teamwork and patient safety.
   - Explain the role of the Electronic Health Record (EHR) and Computerized Physician Order Entry (CPOE) in prevention of medical errors.
   - Give examples of cost and value implications of care he or she provides (e.g., give examples of alternate sites of care resulting in different costs for individual patients).
   - Use checklists and briefings to prevent adverse events in health care.
   - Appropriately and accurately enter patient data in EHR.
   - Effectively use electronic medical records in patient care.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation
VI. Residents collect cases and present during rotations in weekly fracture conferences and monthly morbidity and mortality conferences. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.

Sports Orthopaedics - PGY 2

Description

The sports medicine rotation is designed to expose patients to the clinical evaluation and surgical care of the sports patient from adolescence into adulthood. The rotation takes place at CMH and residents participate in this rotation in their PGY 2, PGY3, and PGY5 years.

Resident Role and Expectations

The resident's primary role will be to perform basic major and minor operations in the capacity of assistant or primary surgeon under supervision of teaching attending faculty. Furthermore, they will participate in the initial evaluation, perioperative care and nonoperative management of orthopaedic sports injuries and diseases, including those of the shoulder, elbow, hip, knee, and ankle. Resident clinical and operative responsibilities are as follows:

I. The sports experience for the PGY2 resident will be focused on developing skills and knowledge to manage the athletic patient pre- and postoperatively, along with developing acumen in evaluating and consulting on the orthopaedic patient with common shoulder, elbow, hip and knee complaints. In the outpatient setting, the PGY2 is expected to formulate evidence-based treatment plans with attending guidance and gain experience in the nonoperative management of certain orthopaedic diseases and injuries. The PGY2 operating room experience will focus on OR setup, arthroscopic portal placement, basic arthroscopy techniques, suture management, closures, and postoperative immobilization application. Finally, the resident will understand the appropriate use of inpatient and outpatient rehabilitation services.

II. The PGY2 resident will build upon their skills and knowledge of floor patient management and have increased responsibility for evaluating and treating patients in the emergency department. In addition, they will build on their skills in fracture and joint reduction along with splint and cast application. In outpatient clinics, the resident will improve their efficiency in evaluating new patients and formulate more robust diagnostic and treatment plans. In the OR, the resident will build on the PGY1 experience by focusing on surgical approaches and key steps of common procedures.

Readings

DeLee and Drez's Orthopaedic Sports Medicine: Principles and Practices
Miller & Thompson

Operative Techniques in Orthopaedic Surgery
Wiesel et al

OKU-Sports

Faculty Contact

Stephan Sweet, MD
Sports Orthopaedics

Kentaro Suzuki, MD
Sports Orthopaedics

Petros Frousiakis, DO
Sports Orthopaedics

Anthony DeGiacomo, MD
Sports Orthopaedics

Educational Goals and Objectives

Patient Care and Procedural Skills

- Identify key elements in the history and exam to evaluate athletes presenting with conditions involving the musculoskeletal system. Counsel athletes regarding risks and prevention of orthopaedic injuries sustained from playing sports. Order and interpret (with the assistance of the radiologist and attending orthopedic surgeon) the following common diagnostic imaging procedures when evaluating and managing patients with orthopaedic conditions: plain radiographs, body MRI, CT scan, radionuclide bone scans, and ultrasound.
- Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:
    - Physical examination to identify typical findings of sports medicine injury to the shoulder, elbow, hip, knee, and ankle
    - Operating room setup and assistance for knee and shoulder arthroscopy procedures
    - Subacromial and intra-articular shoulder joint injections
    - Knee joint injections
    - Basic rotator cuff repair principles
    - Rudimentary suture management
    - Basic bankart/labral repair principles
    - Knee arthroscopy portal placement and basic principles
    - Perform diagnostic knee arthroscopy
    - Shoulder arthroscopy portal placement
    - Perform diagnostic shoulder arthroscopy
    - Meniscectomy
    - Basic meniscus repair principles
    - ACL reconstruction steps and performing graft prep
    - Discoid meniscus saucerization principles
    - Basic MPFL reconstruction principles
    - Microfracture techniques

- Portal site closures
- Applications of slings and braces.

Medical Knowledge

- Demonstrate broad understanding of the anatomy and biomechanics of the shoulder, elbow, hip, knee and ankle as it relates to common sports medicine injuries. Exhibit basic knowledge of the typical mechanisms of injury for common sports medicine problems. Possess a working knowledge of arthroscopic and open surgical approaches, including those of the shoulder, elbow, knee and ankle.
- Develop and demonstrate knowledge about the following sports topics, consistent with the resident's level of training as outlined in resident role above:
  - ACL tear
  - Rotator cuff tears
  - Shoulder instability
  - Total shoulder arthroplasty
  - Reverse shoulder arthroplasty
  - Meniscal injury
  - PCL tears
  - Collateral ligament tears
  - Posterolateral corner injury
  - Femoroacetabular impingement
  - Ulnar collateral ligament injury
  - Patellar instability
  - Biceps tendinitis
  - Superior Capsular Reconstruction

Interpersonal and Communication Skills

I. Create and sustain a therapeutic and ethically sound relationship with patients and families. Provide information to patients using effective nonverbal, explanatory, questioning, and writing techniques. Learn to calm patients undergoing procedures. Communicate patient information clearly to other health providers in written notes and oral presentations. Work constructively and effectively with all members of the trauma care team, including nurse clinicians, floor nurses, social workers, fellow physicians, and therapists. Apply appropriate culturally-sensitive communication skills with patients and families (i.e. effective listening, awareness of nonverbal cues, and use of open-ended questions). Counsel and educate patients and families on treatment options, expected surgical outcomes and prognosis, and home care needs. Progress in the ability to educate and counsel patients from the PGY2 to PGY5 year from addressing routine care issues to discussing such complex and difficult issues as injuries that could end a patient's sports career. By PGY5 year, demonstrate leadership and act as a role model to junior residents and provide feedback to help guide their development in this competency.

Practice-Based Learning and Improvement

I. Use feedback gained from others; exposure to complications, medical errors or "near misses;" personal awareness of knowledge gaps; and the experience gained on this rotation to formulate future learning goals. Develop real time strategies for filling knowledge gaps that will benefit this patient population. Following an emergent consult or following a surgical procedure, debrief what went well and what could have been improved. Become familiar with the educational resources available while working on the sports service. Demonstrate ability to form a clinical question and identify available resources to resolve questions. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors and subordinates to improve patient care). Over time and with progression through the program, advance from studying required readings to self- guided research and exploration to, by the PGY5 year, incorporation of information and skills into a practice pattern that includes lifelong learning.

Professionalism

I. Demonstrate respect, compassion, honesty, and integrity. Reflect on biases toward particular illnesses or patient groups and take steps to assure that these biases do not interfere with patient care. Appreciate the psychosocial impact traumatic injuries can have on a patients and families. Respect patient privacy, autonomy, and need to maintain a positive self-concept, irrespective of age, gender or health belief system, and regardless of acuity of diseases. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities. Be sensitive to the ethical and legal dilemmas faced by providers working with patients on the sports service. Demonstrate accountability to patients and society and to the profession. The resident's abilities in professionalism will advance from basic responsibilities such as timeliness, demonstrating caring and appropriate attire to maintaining professional demeanor in stressful situations and observing and acting upon ethical violations. By the PGY5 year the resident should ultimately demonstrate leadership by contributing to the education of others about organizational policies and by acting in compliance with the AAOS Standards of Professionalism.

Systems-Based Practice

I. Understand the role of inpatient and outpatient surgical care for the sports orthopaedic patient. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the emergency department, patient care areas, and operating room. Direct patients and families toward individuals within the institution that can help them access support and resources. Understand the role of health care managers and surgeon extenders in the surgical management of patients. Advocate for quality patient surgical care within the system. Understand when, how, and why to request a consult from medical and surgical specialists, and how to use the that information. Become fluent in appropriate and timely documentation. Over time, progress to understand and negotiate economic differences within health care systems. Participate in quality improvement

projects. By the PGY5 year, anticipate and facilitate operating room team flow in a multi-case day and manage the documentation and order submission tasks of junior residents.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation
VI. 360 degree evaluation
VII. Residents collect cases and present during rotations in weekly fracture conferences and monthly morbidity and mortality conferences. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.

Orthopaedic Trauma - PGY 2

Description

The orthopaedic trauma rotation is designed to expose residents to the management of the patient with one or more musculoskeletal injuries. The trauma service is located at VCMC, and residents spend 3 months per year there in their PGY2, and PGY5 years

Resident Role and Expectations

Residents on trauma service function as important members of the orthopaedic trauma team and work in collaboration with a multidisciplinary trauma surgery team and other medical specialties. Typically PGY2 residents will be focused on the inpatient and outpatient workup of trauma patients and assist in the operating room. The PGY5 resident will guide the PGY2 through this process and further develop their own skill-set and sense of clinical autonomy. Through guided progress, the residents are expected to develop and improve upon their knowledge and skills in the 6 core competencies.

I. The trauma experience for the PGY2 resident will focus on developing skills and knowledge for management of the trauma patient pre- and postoperatively, along with developing acumen in evaluating and consulting on the orthopaedic trauma patient. In the outpatient setting, the PGY2 is expected to develop the ability to formulate evidence-based treatment plans with attending guidance and gain experience in the nonoperative management of fractures. The PGY2 operating room experience will focus on OR setup, learning approaches, performing closures, application of wound vacs, drains, and dressings; and the application of AO principles for basic fracture fixation. Finally, the resident will understand the appropriate use of inpatient and outpatient rehabilitation services.

Readings

Rockwood and Green's Fractures in Adults
Charles Court-Brown et al

Handbook of Fractures
Kenneth Egol et al

OKU Trauma
Ricci & Ostrum

Faculty Contact

Emily Benson, MD
Orthopaedic Trauma

Damayea Hargett, MD
Orthopaedic Trauma

Educational Goals and Objectives

The PGY 2 resident will be able to evaluate, diagnose, and create treatment plans for patients with musculoskeletal injuries in the in-patient and out-patient setting, ranging from low energy/acuity to high energy/acuity, poly-trauma patients. These goals and objectives are further delineated in the categories below.

Patient Care and Procedural Skills

I. Participate in the orthopaedic trauma service. Coordinate and collaborate with the trauma surgery service and other inpatient services. Evaluate preoperative patients. Manage ward and postoperative patients. Plan discharge and follow up. Prioritize patient and patient injury based on acuity. Manage ward emergencies. Be able to apply Advanced Trauma Life Support principles in the care of the trauma patient.
II. Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:
    - Patient site preparation, patient positioning, aseptic draping, and sterile technique with regards to treatment of the trauma patient
    - Wound care, dressing technique, wound vac and drain management
    - Suturing technique, including multi-layer wound closure and complex wound management
    - Basic instrument skills (tools for exposure, hemostasis, retraction, tissue handling, closure)
    - Below knee amputations
    - Fasciotomy for treatment of compartment syndrome
    - Clavicle fracture ORIF
    - Humerus shaft fracture ORIF
    - Distal humerus fracture ORIF
    - Olecranon fracture ORIF
    - Both bone forearm fracture ORIF
    - Distal radius fracture ORIF
    - Femoral shaft fracture antegrade/retrograde intramedullary fixation
    - Patella fracture ORIF
    - Tibial plateau fracture ORIF
    - Tibial shaft fracture intramedullary fixation
    - Tibial pilon fracture ORIF
    - Ankle fracture ORIF
    - Hindfoot and midfoot ORIF
    - Skeletal traction pin placement
    - External fixator application

Medical Knowledge

I. Know and apply basic and clinical science principles as they relate to the trauma patient. Demonstrate knowledge of surgical anatomy of the neurological, vascular, and musculoskeletal system. Demonstrate knowledge about judicious use of antibiotics in both prophylaxis for and management of infections in the orthopaedic trauma patient. Demonstrate knowledge and application of AO principles of fracture fixation. Discuss the pertinent features, functions, and safety parameters of fluoroscopic imaging equipment.

II. Develop and demonstrate knowledge of the following trauma topics consistent with resident's level of training as outlined in resident role above:
    - Tibial shaft fractures
    - Femoral shaft fractures
    - Acetabular fractures
    - Tibial plateau fractures
    - Pelvic ring fractures
    - Femoral neck fractures
    - Amputations
    - Damage control orthopaedics
    - Humeral shaft fractures
    - Distal radius fractures
    - Proximal humerus fractures
    - Calcaneus fractures
    - Intertrochanteric femur fractures
    - Radius and ulna shaft fractures
    - Compartment syndrome
    - Tibial plafond fractures
    - Subtrochanteric fractures
    - Clavicle fractures
    - Gunshot wounds

Interpersonal and Communication Skills

I. Create and sustain a therapeutic and ethically sound relationship with patients and families. Provide information to patients using effective nonverbal, explanatory, questioning, and writing techniques. Learn to calm patients undergoing procedures. Communicate patient information clearly to other health providers in written notes and oral presentations. Work constructively and effectively with all members of the trauma care team, including nurse clinicians, floor nurses, social workers, fellow physicians, and therapists. Apply appropriate culturally-sensitive communication skills with patients and families (i.e. effective listening, awareness of nonverbal cues, and use of open-ended questions). Counsel and educate patients and families on their treatment options, expected surgical outcomes and prognosis, and home care needs. The resident's skill in this domain is expected to progress and develop as they advance in standing from PGY2 to PGY5, with junior residents addressing routine care issues and progressing with more difficult discussions, such as end of life or loss of limb care. The PGY5 will demonstrate leadership to the junior residents and provide feedback to help guide their development in this competency.

Practice-Based Learning and Improvement

I. Formulate future learning goals based on feedback gained from others; exposure to complications, medical errors, or "near misses;" personal awareness of knowledge gaps; and the experience gained on this rotation. Develop real time strategies for filling knowledge gaps that will benefit our patient population. Following a consult or surgical procedure, debrief what went well and what could have been done differently. Become familiar with the educational resources available while working on the trauma service. Demonstrate ability to form a clinical question and identify available resources to resolve questions. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors, and subordinates to improve patient care). Over time and with progression through the program, advance from studying required readings to self-guided research and exploration to, by the PGY5 year, incorporation of information and skills into a practice pattern that includes lifelong learning.

Professionalism

I. Demonstrate respect, compassion, honesty, and integrity. Reflect on biases toward particular illnesses or patient groups and take steps to assure that these biases do not interfere with patient care. Appreciate the psychosocial impact traumatic injuries can have on a patient's and families. Respect patient privacy, autonomy, and need to maintain a positive self-concept, irrespective of age, gender or health belief system, and regardless of acuity of diseases. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities. Be sensitive to the ethical and legal dilemmas faced by providers working with patients on the trauma service. Demonstrate accountability to patients and society and to the profession. Acquire skills in basic responsibilities such as timeliness, appropriate attire, and empathetic interactions with patients, and with experience, move toward maintaining professional demeanor in stressful situations and observing and acting upon ethical violations. By the PGY5 year, demonstrate leadership by contributing to the education of others about organizational policies and by acting in compliance with the AAOS Standards of Professionalism.

Systems-Based Practice

I. Understand the role of a Level 2 trauma center in the management of simple and complex orthopaedic trauma problems. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the emergency department, trauma bay, patient care areas, and operating room. Understand the responsibility of the orthopaedic trauma surgeon in managing indigent patients with traumatic injuries. Direct patients and families toward individuals within the institution that can help them access support and resources. Understand the role of health care managers and surgeon extenders in the surgical management of patients. Advocate for quality patient surgical care within the system. Understand when, how, and why to request a consultation from medical and

surgical specialists, and how to use that information. Become fluent in appropriate and timely documentation. Over time, progress to understand and negotiate economic differences within health care systems. Participate in quality improvement projects. By the PGY5 year, anticipate and facilitate operating room team flow in a multi-case day and manage the documentation and order submission tasks of junior residents.

Evaluation

I. Attending evaluation of resident
II. Case and procedure logs as appropriate
III. Mini-CEX evaluation
IV. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation

Spine - PGY 3

Description

The spine service is dedicated to the evaluation and treatment of orthopaedic spinal pathology in the adult population. The rotation takes place at CMH and is 3 months long in the PGY3 year.

Resident Role and Expectations

Resident's primary role will be to perform major and minor operations in the capacity of assistant or primary surgeon under the supervision of teaching attending faculty. Furthermore, the resident will participate in the initial evaluation, perioperative care and nonoperative management of orthopaedic spine disease and conditions, including the role of rehabilitation services. As the resident progresses through the rotation, he/she will be expected to perform more challenging and/or intricate parts of spinal cases.

Readings

OKU-Spine

Faculty Contact

Justin Millard, MD
Orthopaedic Spine

Samuel Small, DO
Orthopaedic Spine

Educational Goals and Objectives

Patient Care and Procedural Skills

I. Evaluate, document, and present a patient with spine problems, specifying the working diagnosis, studies to confirm or change the diagnosis, treatment alternatives, and expected outcomes. Perform a complete musculoskeletal and neurologic examination, including the cervical, thoracic, and lumbar spine, and a neurological examination of the upper and lower extremities and be able to explain pathologic findings, such as an absent reflex or long tract signs, such as positive Hoffmann or positive Babinski and/or clonus. Prescribe appropriate spinal orthoses and supervise their application.

II. Become proficient in the following skills consistent with the resident's level of training:
    A. Posterior cervical laminectomy and fusion
    B. Posterior thoracic arthrodesis
    C. Posterior lumbar decompression and fusion
    D. Anterior cervical discectomy and fusion
    E. Microdiscectomy
    F. Lumbar decompression and laminectomy

Medical Knowledge

I. Understand evidence-based recommendations for patient care and the underlying basic science and pathophysiology relevant to spine conditions. Recognize and describe neurological deficits (including pathophysiology), resulting limitations, and accommodations for functional deficits. Demonstrate knowledge of anatomy, physiology and biomechanics of the spine, adjacent muscles and intervertebral discs.

II. Develop and demonstrate knowledge of the following spine topics consistent with the resident's level of training:
    A. Cervical disc herniation
    B. Lumbar disc herniation
    C. Thoracic disc herniation
    D. Spinal tumors
    E. Cervical myelopathy
    F. Spinal cord injury
    G. Degenerative spondylolisthesis
    H. Lumbar spinal stenosis
    I. Cervical radiculopathy
    J. Ankylosing spondylitis

Interpersonal and Communication Skills

I. Develop interpersonal skills necessary to communicate effectively with patients, families, nursing staff, mid-level healthcare providers, ancillary staff, medical students, fellow residents, and attending staff. Create an atmosphere of collegiality and mutual respect with all providers involved in the care of patients. Talk to family members about sensitive issues that relate to a patient's illness, e.g. coping with the patient's altered needs in his/her home setting. Write an effective and timely consultation note that summarizes the findings and recommendations of the orthopaedist and clarifies the continued role and responsibility of the consultant. Share knowledge with team members to foster an environment of learning. Interpret and describe radiographic findings to peers effectively using commonly accepted descriptors.

Practice-Based Learning and Improvement

I. Investigate and evaluate patient care practices, appraise and assimilate scientific evidence, and reflect upon and incorporate this information to improve patient care practices. Record and track procedures. Be involved in the teaching of medical students and colleagues. Present patients for discussion during rounds and seminars, with appropriate literature references to support planned interventions. Understand the role of study design and the use/misuse of statistical analysis in reviewing the results of published research in orthopaedic surgery. Identify standardized guidelines for diagnosis and treatment of complex problems of the musculoskeletal system and learn the rationale for adaptations that optimize treatment. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g.

use evaluations provided by patients, peers, superiors and subordinates to improve patient care).

Professionalism

I. Demonstrate respect, compassion, honesty, and integrity. Have a commitment to ethical principles, including protecting the confidentiality of patient information and providing patients with informed consent. Demonstrate responsiveness to the needs of patients and society in a way which supersedes self-interest. Demonstrate accountability to patients, society and to the profession. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities.

Systems-Based Practice

I. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing, without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the operating room, emergency department, and wards. Direct patients and families toward individuals within the institution that can help them access support and resources. Join and participate in a hospital-based committee.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation
VI. 360 degree evaluation
VII. Residents collect cases and present during rotations in weekly fracture conferences and monthly morbidity and mortality conferences. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.

Reconstruction - PGY 3

Description

The joint reconstruction service is focused on the inpatient and outpatient care of the patient with degenerative disease of the hips and/or knees. The rotation takes place at CMH and residents participate in this rotation in their PGY3, PGY4 and PGY5 years.

Resident Role and Expectations

The resident's primary role will be to perform major and minor operations in the capacity of assistant or primary surgeon under the supervision of the teaching attending physician. Furthermore, they will participate in the initial evaluation, perioperative care, and nonoperative management of degenerative joint disease of the hips and knees along with management of complications seen in the post-arthroplasty patient. Resident clinical and operative responsibilities are as follows:

l. The joint experience for the PGY2 resident will be focused on developing skills and knowledge to manage the arthritic patient pre- and postoperatively, along with developing acumen in evaluating and consulting on the orthopaedic patient with degenerative joint disease of the hips and knees. In the outpatient setting, the PGY2 is expected to develop the ability to formulate evidence-based treatment plans with attending guidance and gain experience in the nonoperative management of patients with pain and dysfunction from degeneration of their hips and knees. The PGY2 operating room experience will focus on OR setup, surgical approaches, proper retraction, multi-layer wound closure, dressing and drain application, and postoperative orders. Finally, the resident will understand the appropriate use of inpatient and outpatient rehabilitation services.

Readings

Essentials in Total Hip Arthroplasty
Parvizi & Klatt

Total Knee Arthroplasty
Richard Scott

Operative Techniques in Orthopaedic Surgery
Wiesel et al

Orthopaedic Knowledge Update Hip and Knee Reconstruction

Faculty Contact

Ross Burge, DO
Joint Reconstruction Orthopaedics

Thomas Golden, MD
General Orthopaedics

Educational Goals and Objectives

Patient Care and Procedural Skills

I. Identify key elements in the history and exam to evaluate patients presenting with conditions involving degeneration of the hip and knee joints. Counsel patient regarding exam findings and nonoperative management of various forms of joint degeneration. Order and interpret (with the assistance of the radiologist) the following common diagnostic imaging procedures when evaluating and managing patients with orthopaedic conditions: plain radiographs, body MRI, CT scan, radionuclide bone scans, and ultrasound.
II. Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:
    A. Physical examination to identify typical findings of degenerative joint disease to the hips and knees
    B. Primary total knee arthroplasty
    C. Revision total knee arthroplasty
    D. Unicompartmental knee arthroplasty
    E. Total hip arthroplasty
    F. Revision hip arthroplasty
    G. Periprosthetic fracture management
    H. Explantation of total hip and knee arthroplasty in the setting of infection
    I. Knee joint injection

Medical Knowledge

I. Understand key elements in the history and physical exam that are pertinent to effectively evaluating hip and knee pain in adult patients. Interpret advanced imaging studies commonly used to evaluate musculoskeletal conditions. Understand and demonstrate necessary operative steps to be competent in surgical approaches to the hip and knee. Develop a postoperative "checklist" to provide consistent, competent care of postoperative patients and to identify and treat of postoperative complications.
II. Anticipate necessary steps to formulate a long-term patient care plan.
III. Develop and demonstrate knowledge of the following reconstruction topics:
    A. Wear and osteolysis
    B. Prosthetic joint infection
    C. THA periprosthetic fracture
    D. TKA periprosthetic fracture
    E. THA dislocation
    F. TKA sagittal plane balancing
    G. THA revision
    H. TKA revision
    I. Unicompartmental knee replacement

J. THA stability techniques
K. Primary TKA
L. Primary THA
M. Postoperative VTE prophylaxis

Interpersonal and Communication Skills

I. Develop interpersonal skills necessary to communicate effectively with patients, families, nursing staff, mid-level healthcare providers, ancillary staff, medical students, fellow residents, and attending staff. Create an atmosphere of collegiality and mutual respect with all providers involved in patient care. Talk to family members about sensitive issues that relate to a patient's illness, e.g. coping with the patient's altered needs in his/her home setting. Demonstrate skills to counsel patients regarding arthroplasty and the risks and benefits. Write an effective and timely consultation note that summarizes the findings and recommendations of the orthopaedist and clarifies the continued role and responsibility of the consultant. Maintain comprehensive, timely and legible medical records. Progress in the ability to educate and counsel patients from the PGY2 to PGY5 year from addressing routine care issues to discussing such complex and difficult issues as loss of limb, diagnosis of prosthetic joint infection, and the need for staged procedures. By PGY5 year, demonstrate leadership and act as a role model to junior residents and provide feedback to help guide their development in this competency.

Practice-Based Learning and Improvement

I. Formulate future learning goals based on feedback gained from others; exposure to complications, medical errors, or "near misses;" personal awareness of knowledge gaps; and the experience gained on this rotation. Develop real time strategies for filling knowledge gaps that will benefit our patient population. Following an emergent consult or surgical procedure, debrief what went well and what could have been improved. Become familiar with the educational resources available while working on the reconstruction service. Demonstrate ability to form a clinical question and identify available resources to resolve questions. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors and subordinates to improve patient care). Over time and with progression through the program, advance from studying required readings to self- guided research and exploration to, by the PGY5 year, incorporation of information and skills into a practice pattern that includes lifelong learning.

Professionalism

I. Demonstrate respect, compassion, honesty, and integrity. Maintain a commitment to ethical principles, including protecting the confidentiality of patient information and providing patients with informed consent. Demonstrate responsiveness to the needs of patients and society which supersedes self-interest. Demonstrate accountability to patients and society and to the profession. Respect patient privacy, autonomy, and need to

maintain a positive self-concept, irrespective of age, gender, or health belief system, and regardless of acuity of diseases. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities. Demonstrate sensitivity to the ethical and legal dilemmas faced by providers working with patients with orthopaedic problems and strive to understand how the orthopaedist and care team deal with these dilemmas. Promptly recognize and acknowledge complications that arise. Maintain adequate documentation and timely completion of medical records. Acquire skills in basic responsibilities such as timeliness, appropriate attire, and empathetic interactions with patients, and with experience, move toward maintaining professional demeanor in stressful situations and observing and acting upon ethical violations. By the PGY5 year, demonstrate leadership by contributing to education of others about organizational policies and by acting in compliance with the AAOS Standards of Professionalism.

Systems-Based Practice

I. Understand the role of inpatient and outpatient surgical care for the reconstruction orthopaedic patient. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the emergency department, patient care areas, and operating room. Direct patients and families toward individuals within the institution that can help them access support and resources. Understand the role of health care managers and surgeon extenders in the surgical management of patients. Advocate for quality patient surgical care within the system. Understand when, how, and why to request a consult from medical and surgical specialists, and how to use the that information. Become fluent in appropriate and timely documentation. Over time, progress to understand and negotiate economic differences within health care systems. Participate in quality improvement projects. By the PGY5 year, anticipate and facilitate operating room team flow in a multi-case day and manage the documentation and order submission tasks of junior residents.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation
VI. 360 degree evaluation
VII. Residents collect cases and present during rotations in weekly fracture conference and monthly morbidity and mortality conference. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.

Orthopaedic Oncology/Trauma - PGY 3

Description

The orthopaedic oncology rotation is designed to give residents first hand exposure to the evaluation and treatment of patients with primary and secondary oncologic orthopaedic disease. The rotation takes place at Cedars-Sinai Medical Center in the PGY3 year and is three months long. While on this rotation, the residents will also take trauma call and be responsible for evaluating and managing orthopedic patients and covering trauma cases.

Resident Role and Expectations

Residents on the oncology service will function as an important member of the care team, assisting in clinical patient evaluation and surgical management under the direct supervision and guidance of the teaching attending faculty. Residents will care for a range of patients, ranging from pediatric to geriatric patients, during the rotation. Throughout their rotation, they will be given progressively more clinical responsibility and be expected to perform increasing numbers of surgical procedures. They will be focused on the inpatient and outpatient workup of trauma patients and assist in the operating room on orthopaedic trauma cases.

Readings

OKU Musculoskeletal Tumors
J. Sybil Biermann

Rockwood and Green's Fractures in Adults
Charles Court-Brown et al

Handbook of Fractures
Kenneth Egol et al

OKU Trauma
Ricci & Ostrum

Faculty Contact

Daniel C. Allison, MD
Orthopaedic Surgical Oncology and Reconstruction

Educational Goals and Objectives

Patient Care and Procedural Skills

I. Participate in outpatient evaluation of new and return oncology service patients
II. Perform a detailed history and physical exam with attention to a history of trauma, infection, systemic disease, familial syndromes and a careful assessment of the factors

related to the patient's complaint, including duration of pain or of a mass, alleviating factors, aggravating factors, duration of symptoms, a history of cancer, risk factors for cancer and prior treatments, including imaging studies

III. Effectively develop the initial patient care and clinical skills to facilitate adequate evaluation of common bone and soft-tissue neoplastic conditions seen in the pediatric and adult patient populations

IV. Demonstrate clinical skills that include a thorough, accurate physical examination of the skin and musculoskeletal system, including muscles, bones and joints; as well as vascular and neurological evaluations.

V. Demonstrate the ability to evaluate patients with spine tumors and to detect neurological injury, seeking appropriate consultation when necessary

VI. Demonstrate surgical skills with attending supervision appropriate to level of training that include the performance of an open biopsy of a soft-tissue mass and bone lesion with special attention paid to the location and direction of any skin incisions, the avoidance of contamination, and the prevention of hematoma or pathologic fracture

VII. Develop operative skills to perform toe, foot, below knee and above knee amputations and placement of intramedullary fixation for lower extremity metastases

VIII. Recognize common postoperative or treatment related complications and initiate strategies to address those complications, including appropriate consultation with the supervising physician

IX. Demonstrate the ability to manage inpatient care, including fluid and blood resuscitation, antibiotics, physical therapy and nursing orders, and discharge planning

X. Demonstrate the ability to develop and implement patient management plans

XI. Demonstrate the ability to practice culturally competent medicine

XII. Use information technology effectively to support patient care decisions and patient education

XIII. Coordinate health care services aimed at preventing health problems or maintaining health (OT, PT)

XIV. Collaborate with other healthcare professionals from various disciplines with a goal of providing excellent patient-focused care

XV. Attend weekly multidisciplinary sarcoma conference and service specific didactic sessions

XVI. Evaluate preoperative patients. Manage ward and postoperative patients. Plan discharge and follow up. Prioritize patient and patient injury based on acuity. Manage ward emergencies. Be able to apply Advanced Trauma Life Support principles in the care of the trauma patient.

XVII. Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:

A. Patient site preparation, patient positioning, aseptic draping, and sterile technique with regards to treatment of the trauma patient
B. Wound care, dressing technique, wound vac and drain management
C. Suturing technique, including multi-layer wound closure and complex wound management
D. Basic instrument skills (tools for exposure, hemostasis, retraction, tissue handling, closure)
E. Below knee amputations

F. Fasciotomy for treatment of compartment syndrome
G. Clavicle fracture ORIF
H. Humerus shaft fracture ORIF
I. Distal humerus fracture ORIF
J. Olecranon fracture ORIF
K. Both bone forearm fracture ORIF
L. Distal radius fracture ORIF
M. Femoral shaft fracture antegrade/retrograde intramedullary fixation
N. Patella fracture ORIF
O. Tibial plateau fracture ORIF
P. Tibial shaft fracture intramedullary fixation
Q. Tibial pilon fracture ORIF
R. Ankle fracture ORIF
S. Skeletal traction pin placement
T. External fixator application

Medical Knowledge

I. Demonstrate basic pre- and postoperative patient evaluation and assessment skills
II. Possess a basic understanding of the anatomy, including the concept of anatomic compartments and the location of important nerves and vessels of the extremity
III. Possess knowledge of appropriate imaging studies to evaluate the more common clinical conditions encountered in patients with neoplastic conditions
IV. Develop skills to read and interpret imaging studies and recognize characteristics that help distinguish neoplasm from non-neoplastic conditions (infection and trauma) as well as benign from malignant disease
V. Attend and participate in the weekly multidisciplinary sarcoma conference and weekly subspecialty conference or journal club
VI. Be able to recommend a strategy for evaluating an adult with a malignant appearing bone lesion, including the correct tests and images to detect a primary tumor or myeloma
VII. Be able to recommend a staging workup for an individual with primary bone or soft tissue sarcoma that reflects knowledge about the behavior of these tumors
VIII. Understand staging systems commonly used for patients with bone and soft tissue tumors
IX. Develop skills to interpret histological specimens and contrast benign and malignant characteristics for common soft tissue and bone tumors
X. Distinguish radical, wide, marginal and intralesional resections and amputations
XI. Understand the rationale for the use of adjuvant chemotherapy and radiation therapy
XII. Understand the indications and contraindications for limb salvage surgery and the comparative effectiveness of limb salvage options and amputations
XIII. Understand factors associated with the development of a pathologic fracture in patients with metastatic disease
XIV. Use history, examination, and laboratory findings to diagnose postoperative complications, such as infection, compartment syndrome, nerve or vascular injury, deep venous thrombosis, etc.
XV. Know and apply basic and clinical science principles as they relate to the trauma patient. Demonstrate knowledge of surgical anatomy of the neurological, vascular, and

musculoskeletal system. Demonstrate knowledge about judicious use of antibiotics in both prophylaxis for and management of infections in the orthopaedic trauma patient. Demonstrate knowledge and application of AO principles of fracture fixation. Discuss the pertinent features, functions, and safety parameters of fluoroscopic imaging equipment.

XVI. Develop and demonstrate knowledge of the following trauma topics consistent with resident's level of training as outlined in resident role above:
   A. Tibial shaft fractures
   B. Femoral shaft fractures
   C. Acetabular fractures
   D. Tibial plateau fractures
   E. Pelvic ring fractures
   F. Femoral neck fractures
   G. Amputations
   H. Damage control orthopaedics
   I. Humeral shaft fractures
   J. Distal radius fractures
   K. Proximal humerus fractures
   L. Calcaneus fractures
   M. Intertrochanteric femur fractures
   N. Radius and ulna shaft fractures
   O. Compartment syndrome
   P. Tibial plafond fractures
   Q. Subtrochanteric fractures
   R. Clavicle fractures
   S. Gunshot wounds

Interpersonal and Communication Skills

I. Communicate with radiology and consulting physicians and services to coordinate patient care effectively
II. Invite questions from patients and their families providing education regarding the patient's condition and treatment plan
III. Create and sustain therapeutic and ethically sound relationships with patients and families
IV. Effectively use listening skills
V. Effectively provide information to patients and families via various methods
VI. Work effectively with others as a member or leader of a health care team
VII. Provide necessary reporting to more senior residents, fellows, and attending staff to ensure good patient care
VIII. Respond to patient phone calls and communication from allied health professionals

Practice-Based Learning and Improvement

I. Locate, appraise, and assimilate evidence from scientific studies related to patients' health issues
II. Be able to obtain and use information about his or her patient population and the larger population from which patients are drawn

III. Be able to apply knowledge of study designs and statistical methods to the appraisal of clinical studies
IV. Be able to use information technology to manage information access online medical information and support his/her own education
V. Facilitate the learning of medical students and other learners on the Oncology service as well as other healthcare professionals on an informal basis in clinics, operating rooms, and conferences
VI. Attend and participate in the morbidity and mortality conference, journal club, and multidisciplinary sarcoma conference
VII. Develop the ability to critically evaluate literature regarding patients with bone and soft tissue tumors
VIII. Develop the ability to analyze the circumstances surrounding a complication and to formulate an improvement plan to improve future care

Professionalism

I. Maintain the strictest confidence in any and all interactions dealing with all patients
II. Demonstrate compassion and empathy for those being evaluated for bone and soft tissue neoplasms
III. Demonstrate respect, compassion and integrity in response to the needs of patients and their families
IV. Demonstrate ethical principles pertaining to patient confidentiality issues
V. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities
VI. Provide compassion and understanding in dealing with end of life issues
VII. Promptly recognize and acknowledge complications that arise
VIII. Maintain adequate documentation and timely completion of medical records
IX. Complete teaching and rotation evaluations

Systems-Based Practice

I. Demonstrate knowledge of treatment plans and their impact on cost effectiveness and efficiency of patient care
II. Act as an advocate for quality of patient care
III. Assess, coordinate, and improve the care of patients within the current healthcare systems in the program (OT, PT, and rehab)
IV. Complete all requirements for compliance, risk management, and safety education

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation
VI. 360 degree evaluation

VII. Residents collect cases and present during rotations in weekly fracture conferences and monthly morbidity and mortality conferences. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.

Foot & Ankle Surgery - PGY3

Faculty Contact

Casey W. Pyle, DO
Orthopedic Surgeon, Foot & Ankle Specialist

Educational Goals and Objectives

Competency 1 - Patient Care:

1. Perform a thorough and accurate history and physical examination. The physical exam should include exam for identification of: peripheral nerve, tendon integrity and chronic tendon disorders (posterior tibial, achilles, peroneal, anterior tibial tendons), vascular status, skin and nail disorders, joint evaluation including stability and the presence of arthritis (ankle, subtalar, midfoot, forefoot) as well as specific and pertinent provocative maneuvers.
2. Apply the knowledge of the natural history of lower extremity disorders with and without surgical treatment.
3. Evaluate the following conditions thoroughly with history, physical examination and radiographs as appropriate: low and high ankle sprains, Lisfranc injuries, Jones fractures, metatarsal fractures, achilles tendon ruptures, peroneal tendon instability, tibialis anterior tendon rupture, posterior tibial tendon insufficiency, achilles tendonitis, plantar fasciitis, hallux valgus, hallux rigidus, turf toe, hallux varus, claw toes, hammer toes, mallet toes, plantar plate tears, bunionette, Freiberg's disease, osteochondral lesions of the talus, ankle arthritis, tibiotalar impingement, midfoot arthritis, diabetic foot ulcers, charcot neuroarthropathy, Morton's neuroma, tarsal tunnel syndrome, leg nerve entrapment syndromes, ankle instability, ankle fractures, pilon fractures, calcaneus fractures, and talus fractures.
4. Effectively communicate the history as taken from the patient and/or the patient's guardian or family in a succinct and accurate fashion.
5. Effectively communicate and demonstrate respectful and caring behavior when interacting with patients, their guardians and their families.
6. Competent in assuming responsibility for specifically inquiring about the presence or absence of systemic disease relevant to conditions commonly encountered in the foot and ankle such as diabetes mellitus, hypothyroidism, peripheral vascular disease, peripheral neuropathy, seropositive and seronegative arthritides.
7. Demonstrate knowledge and application of knowledge of non-operative treatment, which includes anti-inflammatories, physical therapy, application of heat and cold as well as basics of splinting and orthotics.
8. Perform simple invasive procedures for patients suffering from foot and ankle-related complaints – such as injections of the ankle, subtalar joint, plantar fascia, and 1st MTP joints.
9. Demonstrate the ability to systematically and accurately interpret plain and special view radiographs and other imaging methods (MRI, arthrography, computed tomography

imaging, angiography) commonly used in the evaluation of lower extremity disorders and understand the indications for ordering such exams, including their applications.
10. Assess foot and ankle surgery problems/injuries in the emergency department, obtain history, perform pertinent physical exam, develop differential diagnosis, and communicate findings in a succinct and professional manner.
11. Demonstrate facility in the more commonly encountered surgical procedure.
12. Generate an operative plan and perform a substantial portion of the corrective surgical procedures for the following conditions: low and high ankle sprains, Lisfranc injuries, Jones fractures, metatarsal fractures, achilles tendon ruptures, peroneal tendon instability, tibialis anterior tendon rupture, posterior tibial tendon insufficiency, achilles tendonitis, plantar fasciitis, hallux valgus, hallux rigidus, turf toe, hallux varus, claw toes, hammer toes, mallet toes, plantar plate tears, bunionette, Freiberg's disease, osteochondral lesions of the talus, ankle arthritis, tibiotalar impingement, midfoot arthritis, diabetic foot ulcers, charcot neuroarthropathy, Morton's neuroma, tarsal tunnel syndrome, leg nerve entrapment syndromes, ankle instability, ankle fractures, pilon fractures, calcaneus fractures, and talus fractures.
13. Demonstrate facility in the application of a thigh or calf tourniquet in the operating room, appropriate prepping and draping of the patient, and the appropriate application of a postoperative dressing to control edema and hematoma formation.
14. Manage the basic postoperative foot and ankle patient and inpatients with foot and ankle conditions including presenting the patients during rounds with the faculty/consultant.
15. Demonstrate knowledge of the basics of postoperative foot and ankle therapy and be able to generate appropriate orders for physical therapy, orthotics, and splinting.
16. Use information technology such as data from current clinical studies as well as information from current journals to support patient care decisions and patient education.
17. Demonstrate ability to practice culturally competent medicine.

Competency 2 - Medical Knowledge:

1. Be familiar with bony and soft tissue anatomy of the foot, ankle and lower extremity.
2. Be familiar with standard surgical approaches to the lower extremity.
3. Understand the basic science of fracture healing, wound healing, tendon healing, and nerve regeneration.
4. Possess an understanding of the scientific basis of evaluation, diagnosis and treatment of commonly encountered foot and ankle surgical conditions including: low and high ankle sprains, Lisfranc injuries, Jones fractures, metatarsal fractures, achilles tendon ruptures, peroneal tendon instability, tibialis anterior tendon rupture, posterior tibial tendon insufficiency, achilles tendonitis, plantar fasciitis, hallux valgus, hallux rigidus, turf toe, hallux varus, claw toes, hammer toes, mallet toes, plantar plate tears, bunionette, Freiberg's disease, osteochondral lesions of the talus, ankle arthritis, tibiotalar impingement, midfoot arthritis, diabetic foot ulcers, charcot neuroarthropathy, Morton's neuroma, tarsal tunnel syndrome, leg nerve entrapment syndromes, ankle instability, ankle fractures, pilon fractures, calcaneus fractures, and talus fractures.
5. Develop and discuss a differential diagnosis of foot, ankle and lower extremity conditions based on physical exam and history obtained from the patient.

6. Demonstrate a working knowledge of the presentation and radiographic findings of common foot, ankle and lower extremity conditions.
7. Demonstrate knowledge of complete history and physical exam results for patients on whom surgical treatment is being considered.
8. Demonstrate knowledge of the indications for basic surgical procedures in foot and ankle surgery conditions as listed above.
9. Demonstrate knowledge of non-operative treatment and initial management of the above conditions (anti-inflammatories, physical therapy, application of modalities as appropriate based on scientific evidence, basic splinting).
10. Demonstrate an understanding of simple invasive procedures for patients suffering from foot and ankle related complaints as listed such as injections, anesthetic blocks, partial or total matrixectomies, percutaneous flexor tenotomies, suture repair of lacerations, closed reductions.
11. Demonstrate basic understanding of the classic and contemporary literature pertaining to surgery of the foot and ankle and lower extremity.
12. Demonstrate knowledge of the basics of postoperative physical therapy.

Competency 3 - Communication Skills:

1. Develop interpersonal skills necessary to communicate effectively with patients, patient families, nursing staff, mid-level healthcare providers, ancillary staff, medical students, fellow residents and attending staff.
2. Create an atmosphere of collegiality and mutual respect with all providers involved in the care of patients.
3. Talk to family members about sensitive issues that relate to a patient's illness, e.g. coping with the patient's altered needs in his/her home setting.
4. Write an effective and timely consultation note that summarizes the findings and recommendations of the orthopedist and clarifies the continued role and responsibility of the consultant.
5. Describe the role of all members of a multidisciplinary team and show respect for the contributions of each.
6. Maintain comprehensive, timely and legible medical records.
7. Effectively provide information via various communication mediums.
8. Share your own knowledge with other members of the team to foster an environment of learning.
9. Demonstrates leadership and responsibility for overseeing the appropriate care of inpatients by the junior residents.

Competency 4 - Practice Based Learning and Improvement:

1. Demonstrate familiarity and understanding of reading materials describing the diagnosis and treatment of low and high ankle sprains, Lisfranc injuries, Jones fractures, metatarsal fractures, achilles tendon ruptures, peroneal tendon instability, tibialis anterior tendon rupture, posterior tibial tendon insufficiency, achilles tendonitis, plantar fasciitis, hallux valgus, hallux rigidus, turf toe, hallux varus, claw toes, hammer toes, mallet toes, plantar plate tears, bunionette, Freiberg’s disease, osteochondral lesions of the talus, ankle

arthritis, tibiotalar impingement, midfoot arthritis, diabetic foot ulcers, charcot neuroarthropathy, Morton's neuroma, tarsal tunnel syndrome, leg nerve entrapment syndromes, ankle instability, ankle fractures, pilon fractures, calcaneus fractures, and talus fractures.

2. Accurately locate, appraise and assimilate evidence from scientific studies relating to the patient's foot and ankle surgical problem, which requires knowledge of the pertinent recent literature, as may be obtained from the American and British Journal of Bone and Joint Surgery, Foot and Ankle International, and the Journal of the American Academy of Orthopaedic Surgeons.
3. Demonstrate facility in the critical reading of a manuscript, notably those from Foot and Ankle International
4. Demonstrate facility at using on-line search engines, such as MEDLINE or PUBMED, to locate and access appropriate educational materials and peer review reference articles relevant to patient care.
5. Successfully maintain a record of all operative cases via the resident operative log via the ACGME web site.
6. Self-evaluation of performance should include the ability to analyze the effectiveness of his/her own interpretative, problem solving, and surgical skills.
7. Search, retrieve, and interpret peer reviewed medical literature relevant to foot and ankle diseases and disorders.
8. Apply study and case report conclusions to the care of individual patients.
9. Reflective learning should include: communicate learned concepts to peers, receptive to constructive criticism, incorporation of feedback into improvement of clinical activity, utilize patient information systems to assess measurable clinical practices and outcomes.

Competency 5 - Professionalism:

1. Behavior that supersedes self-interest, demonstrates a commitment to excellence and improvement.
2. Demonstrate an understanding of the importance of patient primacy by placing the interest of the patient above their own interest, providing autonomy to their patients to decide upon treatment once all treatment options and risks have been outlines for them. Understand and demonstrate the ability to obtain an informed consent from a patient, which includes the presentation of the natural history of both surgical and non-surgical care of the patient's condition, giving equitable care to all patients, treating all patients with respect regardless of race, gender and socioeconomic background.
3. Interact in a professional manner with inpatients, outpatients, referring physicians, orthopaedic residents, attendings and all patients in the practice.
4. Demonstrate respect, compassion and integrity in response to the needs of patients and their families.
5. Demonstrate ethical principles pertaining to patient confidentiality issues.
6. Demonstrate sensitivity to the culture, age, gender and disabilities of patients and fellow health care professionals.
7. Possess some competency in effectively managing hospital patients.
8. Legible and timely documentation.

Competency 6 - System-Based Practice:

1. Demonstrate an understanding of health care systems and challenges.
2. Demonstrates knowledge of cost effectiveness in health care.
3. Practice cost-effective health care and resource allocation that does not compromise quality of care.
4. Advocates for patients when cost and quality issues present .
5. Demonstrate competency in coordinating all aspects of perioperative and postoperative rehabilitation and physical therapy.
6. Demonstrate an understanding of how his/her 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 his/her own practice.
7. Acts as an advocate for quality patient care and assists patients in dealing with system complexities.
8. Partners with administrative personnel, health care managers and health care providers to assess, coordinate and improve health care, and know how these activities can affect system performance. Specifically the resident should demonstrate the ability to interact in the most efficient manner with physical therapists, such that no time is lost in the provision of appropriate physical therapy after injury or surgery.
9. Demonstrate an understanding of the impact of correct coding during patient office visits.
10. Complete all records and paperwork

Hand Surgery - PGY 4

Description

The goal of the hand and upper limb rotation is to provide a breadth of experience and exposure to disorders affecting the hand and upper limb. Residents gain outpatient experience both at a local outpatient clinic and VCMC. The operative experience is divided between a local outpatient surgery center, VCMC, and CMH same day surgery. The rotation is 3 months in length and takes place during the PGY4 year.

Resident Role and Expectations

The resident on the hand service will be a primary member of the care team and provide patient care under the supervision of attending staff. The resident will gain proficiency in soft-tissue handling and microsurgery as well as in the treatment of a broad variety of hand and upper limb disorders. The resident will work directly with patients in both the clinic and operating room with increasing independence as, under teaching faculty guidance, he/she progresses in knowledge and skills during the rotation. Finally, the resident will understand the appropriate use of rehabilitation services.

Readings

Green's Operative Hand Surgery
Scott Wolfe

Faculty Contact

Josh Gluck, MD
Orthopaedic Hand Surgery

Educational Goals and Objectives

Patient Care and Procedural Skills

III. Develop clinical acumen in diagnosing and treating conditions involving the hand. Analyze available information to make diagnostic and therapeutic decisions based upon sound clinical judgment, best available evidence, and patient preferences. Perform at an upper resident's level in surgical techniques pertaining to soft tissue, nerve, skeletal structures, and microsurgical procedures. Reflect on performance in the microsurgery lab with a goal of self-evaluation and improvement of surgical skills.

IV. Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:
   A. Flexor tendon repair
   B. Four corner wrist fusion
   C. DCP plating for transverse metacarpal fractures
   D. Closed reduction and pinning of metacarpal fractures

E. Neutralization plate with lag screw fixation for short oblique metacarpal fractures
F. Metacarpal head fracture ORIF
G. Epineural nerve repair
H. Endoscopic carpal tunnel release
I. Open carpal tunnel release
J. Trigger finger/thumb release
K. Dupuytren's open fasciotomy
L. Excision of dorsal ganglion cyst

Medical Knowledge

III. Understand basic disorders that affect the upper extremity and the underlying anatomy, including alterations in the setting of trauma and disease. Interpret information from the history and physical examination, imaging, and laboratory studies to understand the patient's presenting problem. Develop an understanding of the indications for surgery and learn the methodology and range of procedural options available for appropriate treatment, including microsurgical procedures, techniques for soft tissue handling, the microvascular environment of the limb, and the pathology of systemic disease processes affecting the upper extremity.

IV. Demonstrate competency and understanding in the following topics:
A. Carpal tunnel syndrome
B. Trigger finger
C. De Quervain's tenosynovitis
D. 1st CMC joint arthritis
E. Animal and human bite injuries
F. Pyogenic flexor tenosynovitis
G. Ganglia of the wrist and hand
H. Mallet finger
I. Joint dislocations of the hand
J. SLAC wrist
K. SNAC wrist
L. Scaphoid fracture
M. Fingertip amputations and flaps
N. Distal radius fractures

Interpersonal and Communication Skills

II. Develop interpersonal skills necessary to communicate effectively with patients, families, nursing staff, mid-level healthcare providers, ancillary staff, medical students, fellow residents, and attending staff. Create an atmosphere of collegiality and mutual respect with all providers involved in the care of patients. Talk to patients and family members about sensitive issues that relate to a patient's illness, e.g. loss of function, need for major surgery, and coping with the patient's altered needs in his/her home setting. Write an effective and timely consultation note that summarizes the findings and recommendations of the orthopaedist and clarifies the continued role and responsibility of the consultant.

Share knowledge with team members to foster an environment of learning. Interpret and describe radiographic findings to peers effectively using commonly accepted descriptors.

Practice-Based Learning and Improvement

II. Investigate and evaluate patient care practices, appraise and assimilate scientific evidence, and reflect upon and incorporate this information to improve patient care practices. Record and track procedures. Be involved in the teaching of medical students and colleagues. Present patients for discussion during rounds and seminars, with appropriate literature references to support planned interventions. Understand the role of study design and the use/misuse of statistical analysis in reviewing the results of published research in orthopaedic surgery. Identify standardized guidelines for diagnosis and treatment of disorders of the upper limb and learn the rationale for adaptations that optimize treatment. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors and subordinates to improve patient care).

Professionalism

II. Demonstrate respect, compassion, honesty, and integrity. Have a commitment to ethical principles, including protecting the confidentiality of patient information and providing patients with informed consent. Demonstrate responsiveness to the needs of patients and society in a way which supersedes self-interest. Demonstrate accountability to patients, society, and to the profession. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities.

Systems-Based Practice

II. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing, without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the operating room, emergency department, and wards. Direct patients and their families toward individuals within the institution that can help them access support and resources.

Evaluation

VIII. Case and procedure logs as appropriate
IX. Attending evaluation of resident
X. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
XI. Mini-CEX evaluation
XII. Bedside procedural skills evaluation
XIII. 360 degree evaluation
XIV. Weekly case conference

Orthopaedic Trauma - PGY 4

Description

The orthopaedic trauma rotation is designed to expose residents to the intricacies of the patient with one or more musculoskeletal injuries. The PGY 4 trauma service is located at Cottage Hospital in Santa Barbara, and residents spend 3 months there in their PGY4 years.

Resident Role and Expectations

Residents on trauma service function as important members of the orthopaedic trauma team and work in collaboration with a multidisciplinary trauma surgery team and other medical specialties. The PGY4 residents will function progressively more independently in the clinic and operating room, but under attending supervision. Through guided progress, the residents are expected to develop and improve upon their knowledge and skills in the 6 core competencies.

PGY4 residents should be able to formulate appropriate, evidence-based treatment plans for simple and isolated fractures and develop treatment strategies for the polytrauma patient. In the operating room, the PGY4 will progress toward performing crucial parts of fracture cases with minimal guidance.

Readings

Rockwood and Green's Fractures in Adults
Charles Court-Brown et al

Handbook of Fractures
Kenneth Egol et al

OKU Trauma
Ricci & Ostrum

Faculty Contact

Thomas Golden, MD
Orthopaedic Surgery Program Director

Derek Moore, M.D.
SBCH Site Director

Eric Shepard
Orthopaedic Trauma

Michael Maguire, MD
Pediatric Orthopaedic Trauma

Emily Benson, MD
Associate Program Director
VCMC Orthopaedic Trauma

Greg Brunet, Trauma PA
SBCH Clinical Coordinator

Educational Goals and Objectives

Patient Care and Procedural Skills

I. Participate in the orthopaedic trauma service. Manage ward and postoperative patients. Plan discharge and follow up. Prioritize patient and patient injury based on acuity. Be able to apply Advanced Trauma Life Support principles in the care of the trauma patient. Attend trauma clinics.

II. Become proficient in the following skills consistent with the PGY4 resident level of training:
   A. Evaluation and management of Tier 1 and Tier 2 Trauma patients in the ED
   B. Fasciotomy for treatment of compartment syndrome
   C. Open treatment of scapula fractures
   D. Open treatment of clavicle fractures
   E. Open treatment of humerus fractures
   F. Open treatment of elbow fractures
   G. Open treatment of forearm fractures
   H. Open treatment of wrist and hand fractures
   I. Open treatment of pelvic fractures
   J. Open treatment of hip fractures
   K. Open treatment of femoral fractures
   L. Femoral shaft fracture intramedullary fixation
   M. Open treatment of patella fractures
   N. Open treatment of tibial fractures
   O. Tibial shaft fracture intramedullary fixation
   P. Open treatment of tibial pilon fractures
   Q. Open treatment of ankle and foot fractures
   R. Skeletal traction pin placement
   S. External fixator application
   T. Amputations

Medical Knowledge

I. Know and apply basic and clinical science principles as they relate to the trauma patient. Demonstrate knowledge of surgical anatomy of the neurological, vascular, and musculoskeletal system. Demonstrate knowledge of judicious use of antibiotics in both prophylaxis for and management of infections in the orthopaedic trauma patient.

Demonstrate knowledge and application of principles of fracture fixation. Discuss pertinent features, functions, and safety parameters of fluoroscopic imaging equipment.

II. Develop and demonstrate knowledge of the following trauma topics consistent with the PGY4 resident level of training:
    - Scapula fractures
    - Clavicle fractures
    - Humerus fractures
    - Elbow fractures
    - Forearm fractures
    - Wrist and hand fractures
    - Pelvic fractures
    - Hip fractures
    - Femoral fractures
    - Patella fractures
    - Tibial fractures
    - Ankle and foot fractures
    - Compartment syndrome
    - Gunshot wounds
    - Traumatic amputations

Interpersonal and Communication Skills

I. Create and sustain a therapeutic and ethically sound relationship with patients and families. Provide information to patients using effective nonverbal, explanatory, questioning, and writing techniques. Learn to calm patients undergoing procedures. Communicate patient information clearly to other health providers in documentation, secure messaging, and oral presentations. Work constructively and effectively with all members of the trauma care team, including nurse clinicians, floor nurses, social workers, fellow physicians, and therapists. Apply appropriate culturally-sensitive communication skills with patients and families (i.e. effective listening, awareness of nonverbal cues, and use of open-ended questions). Counsel and educate patients and families on treatment options, expected surgical outcomes and prognosis, and home care needs.

Practice-Based Learning and Improvement

I. Formulate future learning goals based on feedback gained from others; exposure to complications, medical errors, or “near misses;” personal awareness of knowledge gaps; and the experience gained on this rotation. Develop real time strategies for filling knowledge gaps that will benefit our patient population. Following an emergent consult or surgical procedure, debrief what went well and what could have been done differently. Become familiar with the educational resources available while working on the trauma service. Demonstrate ability to form a clinical question and identify available resources to resolve questions. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors, and subordinates to improve patient care). Over time and with progression through the program, advance from studying required readings to self-guided

research and exploration to, by the PGY5 year, incorporation of information and skills into a practice pattern that includes lifelong learning.

Professionalism

I. Demonstrate respect, compassion, honesty, and integrity. Reflect on biases toward particular illnesses or patient groups and take steps to assure that these biases do not interfere with patient care. Appreciate the psychosocial impact traumatic injuries can have on patients and families. Respect patient privacy, autonomy, and need to maintain a positive self-concept, irrespective of age, gender or health belief system, and regardless of acuity of disease. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities. Be sensitive to the ethical and legal dilemmas faced by providers working with patients on the trauma service. Demonstrate accountability to patients and society and to the profession. Acquire skills in basic responsibilities such as timeliness, appropriate attire, and empathetic interactions with patients, and with experience, move toward maintaining professional demeanor in stressful situations and observing and acting upon ethical violations. The PGY4 should demonstrate leadership by contributing to the education of others about organizational policies and by acting in compliance with the AAOS Standards of Professionalism.

Systems-Based Practice

I. Understand the role of a Level 1 trauma center in the management of simple and complex orthopaedic trauma problems. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the emergency department, trauma bay, patient care areas, and operating room. Understand the responsibility of the orthopaedic trauma surgeon in managing indigent patients with traumatic injuries. Direct patients and families toward individuals within the institution that can help them access support and resources. Understand the role of health care managers and surgeon extenders in the surgical management of patients. Advocate for quality patient surgical care within the system. Understand when, how, and why to request a consult from medical and surgical specialists, and how to use that information. Become fluent in appropriate and timely documentation. Over time, progress to understand and negotiate economic differences within health care systems. Participate in quality improvement projects, anticipate and facilitate operating room team flow in a multi-case day, and manage the documentation and order submission tasks of junior residents.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation

IV. 360 degree evaluation
V. Patient satisfaction survey
VI. Presentation evaluation: residents collect cases and present during rotations in trauma and fracture conferences.

Pediatric Orthopaedics - PGY 4

Description

The PGY4 pediatric orthopaedic rotation focuses on the evaluation and care of pediatric patients with orthopaedic concerns related to congenital, overuse, trauma, or systemic diseases. The 3-month rotation will build upon the foundation provided in the PGY2 rotation at CHLA, providing progressive autonomy commensurate with this level of training. This rotation will be based at Santa Barbara Cottage Hospital. Local housing will be provided to limit the need for travel to and from Ventura.

Resident Role and Expectations

Residents function as important members of the pediatric orthopaedic service and collaborate with residents from other pediatric services to evaluate and manage pediatric patients with orthopaedic concerns. Residents will have a wide range of clinical and operative responsibilities and participate in outpatient procedures and inpatient surgeries in both primary and assistant roles, progressively gaining both clinical acumen and surgical skills under supervision of teaching attending faculty. This rotation will function in an apprenticeship/mentorship model, helping prepare residents for the transition to actual clinical practice. The surgeons in this community provide coverage to a large geographic region of California and function as tertiary referral providers. The PGY4 will progressively gain independence and autonomy in the clinical and surgical setting and under attending faculty guidance, learn to apply their skills in the pediatric realm. PGY4 residents should be able to formulate appropriate, evidence-based treatment plans for both operative and non operative pediatric orthopaedic injuries and conditions. They will be expected to develop skill and increased independence in the manipulation, closed reduction, and casting of fractures in the outpatient and ER setting. In the operating room, the PGY4 will be expected to demonstrate competence in set-up, approach, soft tissue handling, and closures of cases. As they gain familiarity with pediatric procedures, they will perform increasingly difficult portions of procedures, such as pin placement, tendon harvesting, benign bone excisions, insertion of hardware, and decompression and insertion of implants in scoliosis cases. The resident will participate in a minimum of 4 hours of regularly scheduled didactics covering pediatric orthopaedic with local orthopaedic faculty present to facilitate discussion. Working at Cottage Hospital also provides our PGY4 residents with the opportunity to work closely with pediatric residents and faculty from Cottage Children's Medical Center Pediatric Residency Program, which resides at Cottage Hospital, to care for pediatric patients in a collaborative fashion. PGY4 residents will also attend weekly formal didactics with the Cottage pediatric residents and pediatric faculty, which include education on general pediatric topics and pediatric orthopaedics as well as pediatric M&M and case conference.

Readings

Practice of Pediatric Orthopaedics
Diab & Staheli

Tachdjian's Pediatric Orthopaedics

John A. Herring

OKU Pediatrics
Jeffrey E. Martus

Faculty Contact

Derek Moore, M.D.
SBCH Site Director

Michael Maguire, MD
Pediatric Orthopaedic Surgery

Sean Early, MD
Pediatric Orthopedic Surgery

Educational Goals and Objectives

Patient Care and Procedural Skills

I. The orthopaedic resident must be able to provide patient care that is compassionate, age appropriate, and effective for the treatment of health problems and the promotion of healing following an injury or illness. Through meeting the following objectives, the resident will achieve this goal:
    - 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 and review those with the attending pediatric orthopaedic surgeon.
    - 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. Provide anticipatory guidance to patients and their families.
    - Demonstrate competence in the diagnosis and management of adult and pediatric orthopaedic disorders.
    - Observation and treatment of both inpatients and outpatients with a wide variety of orthopaedic disorders.
    - Demonstrate competence in their ability to perform all medical and invasive procedures considered essential for the area of practice.
    - Demonstrate their ability to work with other healthcare professionals, including those from other disciplines to provide patient-focused care.
    - Demonstrate responsibility for both acutely and chronically ill patients so as to

learn the natural history of pediatric orthopaedic disorders as well as the effectiveness of treatment programs and the impact of growth on these disorders.

Medical Knowledge

I. 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 pediatric patient care. The following objectives are milestones in achieving this goal:
   - Demonstrate expertise in the knowledge of those areas appropriate for an developing PGY4 orthopaedic surgeon.
   - Demonstrate investigatory and analytical thinking approach to clinical situations.
   - Become educated in pediatric orthopaedic trauma (acute and reconstructive), metabolic and genetic conditions, tumors, neuromuscular conditions, spinal conditions, hip conditions, foot and ankle conditions, amputations and prosthetics, hand conditions, athletic injuries and general pediatric orthopaedics.
   - Develop a scholarly approach to clinical problem solving, self-directed study, development of analytic skills and surgical judgment and research.
   - Understand the role of physical and occupational therapists and of orthotists and prosthetists in the rehabilitation and ongoing management of pediatric orthopaedic disorders.
   - Understand normal physiologic mechanisms and the pathogenesis and complications of pediatric orthopaedic disorders.
   - Understand the indications, risks and limitations of the commonly performed procedures in the subspecialty.
   - Understand the anatomy, diagnose, and manage children and adolescents with brachial plexus palsies.
   - Comprehend the embryology, diagnosis, and treatment of children with congenital limb differences.
   - Interpret x-rays, diagnose, and formulate a treatment algorithm for pediatric fractures of the upper extremity.
   - Understand the injury pattern, anatomy, diagnose, acute problems, and manage persons with spinal cord injuries.
   - Comprehend the acute and chronic problems of persons with spinal cord injury.
   - Understand, recognize, and manage simple bone cysts and benign tumors that occur in the growing child.
   - Understand the etiology, diagnosis and treatment of clubfoot and other common foot disorders in children.
   - Understand the characteristics, pathogenesis, diagnostic features, classification and management of common neuromuscular disorders.
   - Understand the clinical manifestations, treatment, and long-term prognosis of limb length inequality and deformity.

Practice-Based Learning and Improvement

I. 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. The following objectives serve as elements of achieving these goals:

- 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.
- Acknowledge gaps in personal knowledge and expertise and frequently ask for feedback from teachers and colleagues.
- Demonstrate computer literacy and basic computer skills in clinical practice.
- Describe basic concepts in clinical epidemiology, biostatistics, and clinical reasoning.
- Categorize the study design of a research study.
- Continually assess performance by evaluating feedback and assessments.
- Develop a learning plan based on feedback with some external assistance.
- Demonstrate use of published review articles or guidelines to review common topics in practice.
- Use patient care experiences to direct learning.
- Rank study designs by their level of evidence.
- Identify bias affecting study validity.
- Formulate a searchable question from a clinical question.

Interpersonal and Communication Skills

I. 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. The following are component objectives towards this goal:

- 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 in 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.
- Communicate with patients about routine care (e.g., actively seek and understands the patient's/family's perspective; focus in on the patient's chief complaint and

ask pertinent questions related to that complaint).
- Recognize and communicate the role as a team member to patients and staff.
- Respond to requests for information.
- Communicate competently within systems and other care providers and provide detailed information about patient care (e.g., demonstrate sensitivity to patient and family-related information gathering or information sharing within the social cultural context; begin to engage patient in patient-based decision making, based on the patient's understanding and ability to carry out the proposed plan; demonstrate empathic response to patient's and family's needs; actively seek information from multiple sources, including consultations; avoid being a source of conflict; obtain informed consent [risks, benefits, alternatives, and expectations]); actively participate in team-based care; support activities of other team members, communicate their role to the patient and family.

Professionalism

I. The orthopaedic resident must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.
   - 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 patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities.
   - Demonstrate commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent and business practice.
   - Consistently demonstrate behavior that conveys caring, honesty, and genuine interest in patients and families.
   - Recognize the importance and priority of patient care, with an emphasis on the care that the patient wants and needs; demonstrate a commitment to this value.
   - Understand and ask for assistance when needed.
   - Exhibit 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.
   - Understand basic principles and aspects of the general maintenance of emotional, physical, mental health, and issues related to fatigue/sleep deprivation.
   - Demonstrate an understanding of the importance of compassion, integrity, respect, sensitivity, and responsiveness while exhibiting these attitudes consistently in common and uncomplicated situations.
   - Consistently recognize ethical issues in practice.
   - Discuss and address socioeconomic barriers in the evaluation and treatment of patients.
   - Recognize limits of knowledge in common clinical situations and asks for

assistance.
- Recognize the value of humility and respect towards patients and associate staff.
- Demonstrate adequate management of personal, emotional, physical, mental health, and fatigue.

Systems-Based Practice

I. 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.
   - Work effectively in various health care delivery settings and systems relevant to orthopaedics.
   - Coordinate patient care within the healthcare system relevant to their orthopaedics.
   - Practice cost-effective health care and resource allocation that does not compromise quality of care.
   - Advocate for quality patient care and optimal patient care systems.
   - Participate in identifying system errors and implementing potential system solutions.
   - Describes basic levels of systems of care (e.g., self-management to societal).
   - Understand the economic challenges of patient care within our healthcare system.
   - Recognize the importance of complete and timely documentation in teamwork and patient safety.
   - Explain the role of the Electronic Health Record (EHR) and Computerized Physician Order Entry (CPOE) in prevention of medical errors.
   - Give examples of cost and value implications of care he or she provides (e.g., give examples of alternate sites of care resulting in different costs for individual patients).
   - Use checklists and briefings to prevent adverse events in health care.
   - Appropriately and accurately enter patient data in EHR.
   - Effectively use electronic medical records in patient care.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation
VI. Residents collect cases and present during rotations in weekly fracture conferences and monthly morbidity and mortality conferences. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.

Reconstruction/Sports - PGY 4

Description

The joint reconstruction/sports service is focused on the inpatient and outpatient care of the patient with degenerative disease of the hips and/or knees and to expose residents to the clinical evaluation and surgical care of the sports patient from adolescence into adulthood. The reconstruction rotation takes place at CMH and residents participate in this rotation in their PGY3, PGY4, and PGY5 years and the sports rotation takes place in their PGY2, PGY4, and PGY5 years. As a PGY4, the emphasis is on transitioning from the knowledge accrued from the previous reconstruction rotation and building upon its foundations. This is facilitated by a mentorship block with the Program Director, which allows for further guided progression in autonomy.

Resident Role and Expectations

The resident's primary role will be to perform major and minor operations in the capacity of assistant or primary surgeon under the supervision of the teaching attending physician for simple and complex primary joints. The PGY4 will become proficient in templating cases as well as mature in their understanding of implant design and choice. Furthermore, they will participate in the initial evaluation, perioperative care, and nonoperative management of degenerative joint disease of the hips and knees along with management of complications seen in the post-arthroplasty patient. They will also participate in the initial evaluation, perioperative care and nonoperative management of orthopaedic sports injuries and diseases, including those of the shoulder, elbow, hip, knee, and ankle. Resident clinical and operative responsibilities are as follows:

I. The PGY4 is expected to function in a more autonomous fashion in clinics while still being supervised and be able to perform common and complex reconstruction surgeries with minimal to moderate intervention or guidance. This expectation includes the management of complex surgical complications and coordination of the surgical team. The PGY4 will contribute to the education of junior residents on service as well, providing support and feedback. Through the rotation, the PGY4 resident will continue to develop leadership skills and practice autonomy consistent with a junior attending while under continued supervision and guidance. There will be emphasis on pre-operative optimization as well as becoming proficient at templating for cases. The resident will develop guidelines for treating with intra and post-operative complications.
II. The sports experience for the PGY4 resident will be focused on developing skills and knowledge to manage the athletic patient pre- and postoperatively, along with developing acumen in evaluating and consulting on the orthopaedic patient with common shoulder, elbow, hip and knee complaints. In the outpatient setting, the PGY4 is expected to formulate evidence-based treatment plans with attending guidance and gain experience in the nonoperative management of certain orthopaedic diseases and injuries. The PGY4 operating room experience will focus on OR setup, arthroscopic portal placement, basic arthroscopy techniques, suture management, closures, and postoperative immobilization

application. Finally, the resident will understand the appropriate use of inpatient and outpatient rehabilitation services.

Readings

Essentials in Total Hip Arthroplasty
Parvizi & Klatt

Total Knee Arthroplasty
Richard Scott

Operative Techniques in Orthopaedic Surgery
Wiesel et al

DeLee and Drez's Orthopaedic Sports Medicine: Principles and Practices
Miller & Thompson

OKU-Sports

Orthopaedic Knowledge Update Hip and Knee Reconstruction

Faculty Contact

Ross Burge, DO
Joint Reconstruction Orthopaedics

Thomas Golden, MD
General Orthopaedics

Stephan Sweet, MD
Sports Orthopaedics

Kentaro Suzuki, MD
Sports Orthopaedics

Petros Frousiakis, DO
Sports Orthopaedics

Anthony DeGiacomo, MD
Sports Orthopaedics

Educational Goals and Objectives

Patient Care and Procedural Skills

I. Identify key elements in the history and exam to evaluate patients presenting with conditions involving degeneration of the hip and knee joints. Counsel patient regarding exam findings and nonoperative management of various forms of joint degeneration. Order and interpret (with the assistance of the radiologist) the following common diagnostic imaging procedures when evaluating and managing patients with orthopaedic conditions: plain radiographs, body MRI, CT scan, radionuclide bone scans, and ultrasound.

II. Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:
    - Physical examination to identify typical findings of degenerative joint disease to the hips and knees
    - Primary total knee arthroplasty
    - Revision total knee arthroplasty
    - Unicompartmental knee arthroplasty
    - Total hip arthroplasty
    - Revision hip arthroplasty
    - Periprosthetic fracture management
    - Explantation of total hip and knee arthroplasty in the setting of infection
    - Critically evaluating evolving literature and its clinical significance
    - Establish a consistent work up for patients with pain

III. Identify key elements in the history and exam to evaluate athletes presenting with conditions involving the musculoskeletal system. Counsel athletes regarding risks and prevention of orthopaedic injuries sustained from playing sports. Order and interpret (with the assistance of the radiologist) the following common diagnostic imaging procedures when evaluating and managing patients with orthopaedic conditions: plain radiographs, body MRI, CT scan, radionuclide bone scans, and ultrasound.

IV. Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:
    - Physical examination to identify typical findings of sports medicine injury to the shoulder, elbow, hip, knee, and ankle
    - Operating room setup for knee and shoulder arthroscopy procedures
    - Subacromial and intra-articular shoulder joint injections
    - Knee joint injections
    - Rotator cuff repair principles
    - Suture management
    - Bankart/labral repair principle
    - Knee arthroscopy portal placement and basic principles
    - Perform diagnostic knee arthroscopy
    - Shoulder arthroscopy portal placement
    - Perform diagnostic shoulder arthroscopy
    - Meniscectomy
    - Meniscus repair principles
    - ACL reconstruction steps and graft prep
    - Discoid meniscus saucerization principles
    - MPFL reconstruction principles
    - Microfracture techniques

- Portal site closures
- Applications of slings and braces.

Medical Knowledge

I. Understand key elements in the history and physical exam that are pertinent to effectively evaluating hip and knee pain in adult patients. Interpret advanced imaging studies commonly used to evaluate musculoskeletal conditions. Understand and demonstrate necessary operative steps to be competent in surgical approaches to the hip and knee. Develop a postoperative "checklist" to provide consistent, competent care of postoperative patients and to identify and treat postoperative complications.
II. Anticipate necessary steps to formulate a long-term patient care plan.
III. Develop and demonstrate knowledge of the following reconstruction topics:
    - Wear and osteolysis
    - Prosthetic joint infection
    - THA periprosthetic fracture
    - TKA periprosthetic fracture
    - THA dislocation
    - TKA sagittal plane balancing
    - THA revision
    - TKA revision
    - Unicompartmental knee replacement
    - THA stability techniques
    - Primary TKA
    - Primary THA
    - Postoperative VTE prophylaxis
IV. Demonstrate broad understanding of the anatomy and biomechanics of the shoulder, elbow, hip, knee and ankle as it relates to common sports medicine injuries. Exhibit intermediate knowledge of the typical mechanisms of injury for common sports medicine problems. Possess a working knowledge of arthroscopic and open surgical approaches, including those of the shoulder, elbow, knee and ankle.
V. Develop and demonstrate knowledge about the following sports topics, consistent with the resident's level of training as outlined in resident role above:
    - ACL tear
    - Rotator cuff tears
    - Shoulder instability
    - Total shoulder arthroplasty
    - Reverse shoulder arthroplasty
    - Meniscal injury
    - PCL tears
    - Collateral ligament tears
    - Posterolateral corner injury
    - Femoroacetabular impingement
    - Ulnar collateral ligament injury
    - Patellar instability
    - Biceps tendinitis

- Superior Capsular Reconstruction

Interpersonal and Communication Skills

I. Develop interpersonal skills necessary to communicate effectively with patients, families, nursing staff, mid-level healthcare providers, ancillary staff, medical students, fellow residents, and attending staff. Create an atmosphere of collegiality and mutual respect with all providers involved in patient care. Talk to family members about sensitive issues that relate to a patient's illness, e.g. coping with the patient's altered needs in his/her home setting. Demonstrate skills to counsel patients regarding arthroplasty and the risks and benefits. Write an effective and timely consultation note that summarizes the findings and recommendations of the orthopaedist and clarifies the continued role and responsibility of the consultant. Maintain comprehensive, timely and legible medical records. Progress in the ability to educate and counsel patients from the PGY2 to PGY5 year from addressing routine care issues to discussing such complex and difficult issues as loss of limb, diagnosis of prosthetic joint infection, and the need for staged procedures. By PGY4 year, demonstrate evolving leadership and act as a role model to junior residents and provide feedback to help guide their development in this competency.

Practice-Based Learning and Improvement

I. Formulate future learning goals based on feedback gained from others; exposure to complications, medical errors, or "near misses;" personal awareness of knowledge gaps; and the experience gained on this rotation to formulate future learning goals. Develop real time strategies for filling knowledge gaps that will benefit our patient population. Following an emergent consult or following a surgical procedure, debrief what went well and what could have been improved. Become familiar with the educational resources available while working on the reconstruction service. Demonstrate ability to form a clinical question and identify available resources to resolve questions. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors and subordinates to improve patient care). Over time and with progression through the program, advance from studying required readings to self- guided research and exploration to, by the PGY5 year, incorporation of information and skills into a practice pattern that includes lifelong learning. The PGY4 reconstruction rotation will serve as a transition for this goal.

Professionalism

I. Demonstrate respect, compassion, honesty, and integrity. Maintain a commitment to ethical principles, including protecting the confidentiality of patient information and providing patients with informed consent. Demonstrate responsiveness to the needs of patients and society which supersedes self-interest. Demonstrate accountability to patients and society and to the profession. Respect patient privacy, autonomy, and need to maintain a positive self-concept, irrespective of age, gender, or health belief system, and regardless of acuity of diseases. Demonstrate sensitivity and responsiveness to patient

culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities. Demonstrate sensitivity to the ethical and legal dilemmas faced by providers working with patients with orthopaedic problems and strive to understand how the orthopaedist and care team deal with these dilemmas. Promptly recognize and acknowledge complications that arise. Maintain adequate documentation and timely completion of medical records. Acquire skills in basic responsibilities such as timeliness, appropriate attire, and empathetic interactions with patients, and with experience, move towards maintaining professional demeanor in stressful situations and observing and acting upon ethical violations. By the PGY4 year, the resident should ultimately demonstrate leadership by contributing to the education of others about organizational policies and by acting in compliance with the AAOS Standards of Professionalism.

Systems-Based Practice

I. Understand the role of inpatient and outpatient surgical care for the reconstructive orthopaedic patient. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the emergency department, patient care areas, and operating room. Direct patients and families toward individuals within the institution that can help them access support and resources. Understand the role of health care managers and surgeon extenders in the surgical management of patients. Advocate for quality patient surgical care within the system. Understand when, how, and why to request a consult from medical and surgical specialists, and how to use the information. Become fluent in appropriate and timely documentation. Over time, progress to understand and negotiate economic differences within health care systems. Participate in quality improvement projects. By the PGY5 year, anticipate and facilitate operating room team flow in a multi- case day and manage the documentation and order submission tasks of junior residents.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation
VI. Residents collect cases and present during rotations in weekly fracture conference and monthly morbidity and mortality conference. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.

Research Rotations PGY 2-5

Description

The orthopaedic research rotation provides an opportunity to build the foundation to pursue scholarly work at CMH as well as beyond residency graduation. The goal is to introduce the resident to the thoughtful investigation of medical, quality improvement and psychosocial questions that affect individual and/or population health, as well as issues affecting the delivery of quality care. The purpose of the rotation is to advance the residents' knowledge of the basic principles of scientific inquiry, research design and evaluation, as well as how research is explained to patients.

Each week the residents will be provided at least 0.5 days of research time to develop, implement and complete research. The goal is to provide ample research time for each resident with at least 120 days of protected time for research throughout the five years.

Resident Role and Expectations

Following the completion of the PGY1 research rotation, the focus of the PGY2-5 research rotation is to refine your research knowledge and skills. Residents should focus on conducting data analysis or a structured literature review on an important topic, preparing an article for peer-review publication, and/or preparing a research presentation for a regional or national meeting. All residents are strongly encouraged to present their work in a public forum upon completion.

All residents, including residents on rotations away from CMH, will be required to meet and discuss the progress of their projects on a monthly basis. The first Monday of every month the residents, program director, and research coordinator will meet to review all planned, current and recently completed research projects. The research meeting will serve as a forum to spur discussion on research questions and methodology. There will be dedicated time to aid junior residents in the IRB submission process by the research support staff and senior residents.

Each resident must actively participate in research through at least one of the following activities; Preparation of an article for a peer-reviewed publication, presentation of research at a regional or national meeting, or participation in a structured literature review of an important topic. All residents are required to be part of a quality improvement initiative or project during residency. It is mandatory that each resident will complete at least one peer-reviewed publication, and highly encouraged to prepare one poster presentation by completion of their PGY5 year.

Readings

Research readings will be self-directed, but may include:

I. CMHS intranet resources
   - Community Memorial Medical Library
   - Community Memorial Research Support

II. Online educational resources
- American College of Physicians (ACP) High Value Care Curriculum: Utilizing Biostatistics in Diagnosis, Screening, and Prevention
- ACP Writing a Research Abstract
- American Osteopathic Association (AOA) Research and Grants
- Agency for Healthcare Research and Quality (AHRQ): Comparative Effectiveness Reviews
- CONSORT Transparent Reporting of Trials
- International Committee of Medical Journal Editors (ICMJE) Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals
- JAMA Guide to Statistics and Methods
- PRISMA Transparent Reporting of Systematic Reviews and Mata-Analyses
- The NNT: Quick summaries of evidence-based medicine
- STROBE Statement Strengthening the Reporting of Observational Studies in Epidemiology

III. Qualitative research resources

GME will provide support to residents interested in conducting qualitative or mixed method research studies. Introductory resources include:
- Qualities of Qualitative Research: Part I
- Qualitative Research Part II: Participants, Analysis, and Quality Assurance
- Thematic analysis

IV. Specialty college resources
- American College of Physicians guideline for poster presentations
- AOAO Guidelines for the Resident Literature Review, Case Report, Scientific Paper, or Poster Presentation

Faculty Contact

Graal Diaz, PhD
Research Coordinator

Amanda Frugoli, DO
Research Team Member

Mickel Paris, MLIS
Medical Librarian

Thomas Golden, MD
Program Director
Orthopaedic Surgery

Educational Goals and Objectives

Patient Care and Procedural Skills

I. All residents will learn to identify questions that impact daily patient care and become familiar with the use of information management tools to access pertinent data.

Medical Knowledge

I. Residents will
   A. Apply general guidelines for conducting biomedical research and implement concepts such as study design, measurement, and analysis
   B. Know Institutional Review Board works and implement guidelines for the protection of human subjects
   C. Apply skills in understanding statistical concepts behind evidence-based medicine, including
      1. Absolute and relative risk reduction
      2. Confidence intervals
      3. Hazard ratio
      4. Intention to treat
      5. Likelihood ratios
      6. Number needed to treat
      7. Odds ratio
      8. Power
      9. Pretest probability
      10. p-value
      11. Sensitivity and specificity
      12. Spectrum bias
      13. Type I and II errors
   D. Implement opportunities for scholarly inquiry, define a clinical question, and develop and execute a research plan
   E. Apply critical appraisal of published medical research
   F. Apply experimental design, hypothesis testing, and other current research methods, as well as participation in clinical or basic research

II. Implement an efficient, rapid approach to finding information resources related to the musculoskeletal system (e.g. on the web, in the literature or textbooks, or other electronic media) to obtain information relevant to a presenting patient problem.

Interpersonal and Communication Skills

I. Residents will
   A. Hone presentation skills and be able to answer questions in a public forum
   B. Distill salient information from published studies and be able to counsel patients regarding impact on their care
   C. Hone writing skills by providing a narrative description of their scholarly activity and where appropriate, writing a scientific paper suitable for publication
   D. Obtain informed consent for research when appropriate

Practice-Based Learning and Improvement

I. Residents should
    A. Be able to access current clinical practice guidelines, electronic databases, published studies, and computer-based diagnostic reasoning programs to answer clinical questions
    B. Foster intellectual inquiry through self-directed learning

Professionalism

I. All residents must demonstrate a commitment to using evidence-based data to shape research and patient care.

Systems-Based Practice

I. All residents should perform quality improvement projects to improve care within our healthcare system.

Evaluation

I. Residents will be evaluated on the progress of their research projects
II. Attending evaluation of resident
III. Monthly research meetings with all residents, program director and research coordinator present

Reconstruction - PGY 5

Description

The joint reconstruction service is focused on the inpatient and outpatient care of the patient with degenerative disease of the hips and/or knees. The rotation takes place at CMH and residents participate in this rotation in their PGY2 and PGY5 years. As a PGY5, there will be an emphasis on maturing knowledge and comfort level with revision cases as well as mentorship of junior residents on the service.

Resident Role and Expectations

The resident's primary role will be to perform major and minor operations in the capacity of primary surgeon under the supervision of the teaching attending physician for simple and complex primary joints. There is an emphasis on gaining exposure to revision total joints and will work with attendings to become comfortable devising a plan and templating for cases. Furthermore, they will participate in the initial evaluation, perioperative care, and nonoperative management of degenerative joint disease of the hips and knees along with management of complications seen in the post-arthroplasty patient. Resident clinical and operative responsibilities are as follows:

I. The PGY5 is preparing for transition to independent practice and should function near that level. They are expected to function in an autonomous fashion in clinics while still being supervised and be able to perform common and complex reconstruction surgeries with minimal intervention or guidance. This expectation includes the management of complex surgical complications and coordination of the surgical team. The PGY5 will contribute to the education of junior residents on service as well, providing support and feedback. Through the rotation, the PGY5 resident will hone leadership skills and practice autonomy consistent with a junior attending while under continued supervision and guidance. There will be emphasis on pre-operative optimization as well as pre-operative planning in the form of templating and discussing implant choices that may be unique patient to patient. The Resident will be comfortable dealing with complex intraoperative and postoperative complications.

Readings

Essentials in Total Hip Arthroplasty
Parvizi & Klatt

Total Knee Arthroplasty
Richard Scott

Operative Techniques in Orthopaedic Surgery
Wiesel et al

Orthopaedic Knowledge Update Hip and Knee Reconstruction

Faculty Contact

Ross Burge, DO
Joint Reconstruction Orthopaedics

Thomas Golden, MD
General Orthopaedics

Educational Goals and Objectives

Patient Care and Procedural Skills

I. Identify key elements in the history and exam to evaluate patients presenting with conditions involving degeneration of the hip and knee joints. Counsel patient regarding exam findings and nonoperative management of various forms of joint degeneration. Order and interpret (with the assistance of the radiologist) the following common diagnostic imaging procedures when evaluating and managing patients with orthopaedic conditions: plain radiographs, body MRI, CT scan, radionuclide bone scans, and ultrasound. A PGY5 will be expected to effectively and efficiently help run an arthroplasty resident clinic with the attending supervising.
II. Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:
    - Physical examination to identify typical findings of degenerative joint disease to the hips and knees
    - Primary total knee arthroplasty
    - Revision total knee arthroplasty
    - Unicompartmental knee arthroplasty
    - Total hip arthroplasty
    - Revision hip arthroplasty
    - Periprosthetic fracture management
    - Explantation of total hip and knee arthroplasty in the setting of infection
    - Critically evaluating evolving literature and its clinical significance
    - Establish a consistent work up for patients with pain

Medical Knowledge

I. Understand key elements in the history and physical exam that are pertinent to effectively evaluating hip and knee pain in adult patients. Interpret advanced imaging studies commonly used to evaluate musculoskeletal conditions. Understand and demonstrate necessary operative steps to be competent in surgical approaches to the hip and knee. Develop a postoperative "checklist" to provide consistent, competent care of postoperative patients and to identify and treat postoperative complications.
II. Anticipate necessary steps to formulate a long-term patient care plan.
III. Develop and demonstrate knowledge of the following reconstruction topics:

- Wear and osteolysis
- Prosthetic joint infection
- THA periprosthetic fracture
- TKA periprosthetic fracture
- THA dislocation
- TKA sagittal plane balancing
- THA revision
- TKA revision
- Unicompartmental knee replacement
- THA stability techniques
- Primary TKA
- Primary THA
- Postoperative VTE prophylaxis

Interpersonal and Communication Skills

I. Develop interpersonal skills necessary to communicate effectively with patients, families, nursing staff, mid-level healthcare providers, ancillary staff, medical students, fellow residents, and attending staff. Create an atmosphere of collegiality and mutual respect with all providers involved in patient care. Talk to family members about sensitive issues that relate to a patient's illness, e.g. coping with the patient's altered needs in his/her home setting. Demonstrate skills to counsel patients regarding arthroplasty and the risks and benefits. Write an effective and timely consultation note that summarizes the findings and recommendations of the orthopaedist and clarifies the continued role and responsibility of the consultant. Maintain comprehensive, timely and legible medical records. Progress in the ability to educate and counsel patients from the PGY2 to PGY5 year from addressing routine care issues to discussing such complex and difficult issues as loss of limb, diagnosis of prosthetic joint infection, and the need for staged procedures. By PGY5 year, demonstrate leadership and act as a role model to junior residents and provide feedback to help guide their development in this competency. There will be an emphasis on being able to guide and mentor the junior residents through their rotation goals.

Practice-Based Learning and Improvement

I. Formulate future learning goals based on feedback gained from others; exposure to complications, medical errors, or “near misses;” personal awareness of knowledge gaps; and the experience gained on this rotation. Develop real time strategies for filling knowledge gaps that will benefit our patient population. Following an emergent consult or surgical procedure, debrief what went well and what could have been improved. Become familiar with the educational resources available while working on the reconstruction service. Demonstrate ability to form a clinical question and identify available resources to resolve questions. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors and subordinates to improve patient care). Over time and with progression through the program, advance from studying required readings to self- guided research and exploration to, by the PGY5 year,

incorporation of information and skills into a practice pattern that includes lifelong learning.

Professionalism

I. Demonstrate respect, compassion, honesty, and integrity. Maintain a commitment to ethical principles, including protecting the confidentiality of patient information and providing patients with informed consent. Demonstrate responsiveness to the needs of patients and society which supersedes self-interest. Demonstrate accountability to patients and society and to the profession. Respect patient privacy, autonomy, and need to maintain a positive self-concept, irrespective of age, gender, or health belief system, and regardless of acuity of diseases. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities. Demonstrate sensitivity to the ethical and legal dilemmas faced by providers working with patients with orthopaedic problems and strive to understand how the orthopaedist and care team deal with these dilemmas. Promptly recognize and acknowledge complications that arise. Maintain adequate documentation and timely completion of medical records. Acquire skills in basic responsibilities such as timeliness, appropriate attire, and empathetic interactions with patients, and with experience, move toward maintaining professional demeanor in stressful situations and observing and acting upon ethical violations. By the PGY5 year, demonstrate leadership by contributing to the education of others about organizational policies and by acting in compliance with the AAOS Standards of Professionalism.

Systems-Based Practice

I. Understand the role of inpatient and outpatient surgical care for the reconstruction orthopaedic patient. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the emergency department, patient care areas, and operating room. Direct patients and families toward individuals within the institution that can help them access support and resources. Understand the role of health care managers and surgeon extenders in the surgical management of patients. Advocate for quality patient surgical care within the system. Understand when, how, and why to request a consult from medical and surgical specialists, and how to use that information. Become fluent in appropriate and timely documentation. Over time, progress to understand and negotiate economic differences within health care systems. Participate in quality improvement projects. By the PGY5 year, anticipate and facilitate operating room team flow in a multi-case day and manage the documentation and order submission tasks of junior residents.

Evaluation

I. Case and procedure logs as appropriate

II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation
VI. Residents collect cases and present during rotations in weekly fracture conference and monthly morbidity and mortality conference. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.

Chief Rotation - PGY 5

Description

The chief rotation takes place in the PGY5 year and is geared toward preparing the resident for transition to independent unsupervised practice. Surgical focus will be on exposure to high level/complex cases and placing the resident in a position of leadership. This rotation takes place at CMH and is 3 months long.

Resident Role and Expectations

The chief resident is expected to take on challenging cases across a broad range of orthopaedic subspecialties at CMH and assume a primary role in the operative and clinical management of these patients. The chief resident will also be responsible for the management of the junior residents; coordinating case assignments, call coverage and clinic coverage; and contributing formally through didactic presentations to the education of more junior residents and medical students.

Readings

Operative Techniques in Orthopaedic Surgery
Wiesel et al

Pain management and addiction resource:
https://journals.lww.com/jorthotrauma/Fulltext/2019/05000/Clinical_Practice_Guidelines_for_Pain_Management.11.aspx

Faculty Contact

Thomas Golden, MD
Program Director
Orthopaedic Surgery

Educational Goals and Objectives

Patient Care and Procedural Skills

I. The chief resident is expected to function at the level of a junior attending, demonstrating the ability to create appropriate surgical plans for complex cases and perform common orthopaedic surgeries with minimal intervention from supervising attendings.
II. The chief resident will act as an attending physician in the resident clinic, overseeing junior residents and helping generate operative and nonoperative treatment plans for patients. This clinical practice will take place under the ultimate supervision and guidance of the attending physician.
III. The chief resident will demonstrate junior attending level skill in the following procedures:

A. Total knee arthroplasty
B. Total hip arthroplasty
C. Knee arthroscopy
D. Shoulder arthroscopy
E. ACL reconstruction
F. Hip fracture in-situ screw fixation
G. Hip hemiarthroplasty
H. Intramedullary nail fixation of intertrochanteric femur
I. Carpal tunnel release
J. ORIF of ankle fractures
K. CRPP of pediatric supracondylar humerus fracture

IV. The chief resident will use inpatient and outpatient rehabilitation services appropriately.

Medical Knowledge

I. Demonstrate junior attending level knowledge in the breadth of orthopaedic conditions encountered in a general orthopaedic surgery practice, from pathophysiology to diagnosis and treatment. Understand controversies within the field regarding orthopaedic conditions and surgeries. Demonstrate junior attending level knowledge of musculoskeletal anatomy, physiology, biomechanics, and orthopaedic instrumentation and materials. Exhibit junior attending level knowledge of the medical management of infections, use of blood products, VTE prophylaxis, and the role of the interdisciplinary team in management of common orthopaedic conditions.

Interpersonal and Communication Skills

I. Communicate competently in complex and/or adversarial situations. Create an atmosphere of collegiality and mutual respect with all providers involved in the care of patients. Lead team-based care activities and communications, including being able to identify and rectify problems with team communication.

Practice-Based Learning and Improvement

I. Perform self-directed learning without external guidance. Critically evaluate and use patient outcomes to improve patient care. Apply evidence-based interventions in clinical care.

Professionalism

I. Mentor and model personal and professional responsibility to colleagues. Recognize signs of physician impairment and be aware of institutional protocols to address impairment in colleagues. Demonstrate respect, compassion, honesty, and integrity. Have a commitment to ethical principles. Demonstrate responsiveness to the needs of patients and society in a way which supersedes self-interest. Demonstrate accountability to patients, society, and to the profession. Demonstrate sensitivity and responsiveness to

patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities.

Systems-Based Practice

I. Effectively manage clinic team and schedules for patient and workflow efficiency. Use and help institute evidence-based guidelines for cost-effective care. Incorporate quality improvement and patient safety practices into the operating room, emergency department, and wards. Maintain team situational awareness and promote "speaking up" with concerns. Report identified system problems to reduce automation and computerized systems risks.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation
VI. 360 degree evaluation
VII. Chief residents coordination of the selection of articles and presentations at Journal clubs.
VIII. Chief residents leadership of the weekly fracture conference, specialty conference, and monthly morbidity and mortality conference.

Orthopaedic Trauma - PGY 5

Description

The orthopaedic trauma chief rotation takes place in the PGY5 year and is geared toward preparing the resident for transition to independent unsupervised fracture management. Surgical focus will be on exposure to high level/complex fracture cases and placing the resident in a position of leadership. This rotation takes place at VCMC and is 3 months long.

Resident Role and Expectations

Residents on trauma service function as important members of the orthopaedic trauma team and work in collaboration with a multidisciplinary trauma surgery team and other medical specialties. Typically PGY2 residents will be focused on the inpatient and outpatient workup of trauma patients and assist in the operating room. The PGY5 resident will guide the PGY2 through this process and further develop their own skillset and sense of clinical autonomy. Through guided progress, the residents are expected to develop and improve upon their knowledge and skills in the 6 core competencies.

I. PGY5 - The PGY5 is preparing for transition to independent practice and should achieve that level. They are expected to be able to function in an autonomous fashion in clinics while still being supervised. In the operating room, the PGY5 should be able to perform common fracture surgeries, including the management of complex surgical complications and coordination of the surgical team. The PGY5 will contribute to the education of junior residents on service, providing support and feedback. Through the rotation, the PGY5 resident will develop leadership skills and practice in an independent fashion consistent with a junior attending, while under continued supervision and guidance.

Readings

Rockwood and Green's Fractures in Adults
Charles Court-Brown et al

Handbook of Fractures
Kenneth Egol et al

OKU Trauma
Ricci & Ostrum

Faculty Contact

Emily Benson, MD
Orthopaedic Trauma

Damayea Hargett, MD
Orthopaedic Trauma

Educational Goals and Objectives

The PGY 5 resident will be able to evaluate, diagnose, and create treatment plans for patients with musculoskeletal injuries in the in-patient and out-patient setting, ranging from low energy/acuity to high energy/acuity, poly-trauma patients. These goals and objectives are further delineated in the categories below.

Patient Care and Procedural Skills

I. Participate in the orthopaedic trauma service. Coordinate and collaborate with the trauma surgery service and other inpatient services. Evaluate preoperative patients. Manage ward and postoperative patients. Plan discharge and follow up. Prioritize patient and patient injury based on acuity. Manage ward emergencies. Be able to apply Advanced Trauma Life Support principles in the care of the trauma patient.

II. Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:
    - Patient site preparation, patient positioning, aseptic draping, and sterile technique with regards to treatment of the trauma patient
    - Wound care, dressing technique, wound vac and drain management
    - Suturing technique, including multi-layer wound closure and complex wound management
    - Basic instrument skills (tools for exposure, hemostasis, retraction, tissue handling, closure)
    - Below knee amputations
    - Fasciotomy for treatment of compartment syndrome
    - Clavicle fracture ORIF
    - Humerus shaft fracture ORIF
    - Distal humerus fracture ORIF
    - Olecranon fracture ORIF
    - Both bone forearm fracture ORIF
    - Distal radius fracture ORIF
    - Femoral shaft fracture antegrade/retrograde intramedullary fixation
    - Patella fracture ORIF
    - Tibial plateau fracture ORIF
    - Tibial shaft fracture intramedullary fixation
    - Tibial pilon fracture ORIF
    - Ankle fracture ORIF
    - Skeletal traction pin placement
    - External fixator application

Medical Knowledge

I. Know and apply basic and clinical science principles as they relate to the trauma patient. Demonstrate knowledge of surgical anatomy of the neurological, vascular, and musculoskeletal system. Demonstrate knowledge about judicious use of antibiotics in

both prophylaxis for and management of infections in the orthopaedic trauma patient. Demonstrate knowledge and application of AO basic and advanced principles of fracture fixation. Discuss the pertinent features, functions, and safety parameters of fluoroscopic imaging equipment.

II. Develop and demonstrate knowledge of the following trauma topics consistent with resident's level of training as outlined in resident role above:
    - Tibial shaft fractures
    - Femoral shaft fractures
    - Acetabular fractures
    - Tibial plateau fractures
    - Pelvic ring fractures
    - Femoral neck fractures
    - Amputations
    - Damage control orthopaedics
    - Humeral shaft fractures
    - Distal radius fractures
    - Proximal humerus fractures
    - Calcaneus fractures
    - Intertrochanteric femur fractures
    - Radius and ulna shaft fractures
    - Compartment syndrome
    - Tibial plafond fractures
    - Subtrochanteric fractures
    - Clavicle fractures
    - Gunshot wounds

Interpersonal and Communication Skills

I. Create and sustain a therapeutic and ethically sound relationship with patients and families. Provide information to patients using effective nonverbal, explanatory, questioning, and writing techniques. Learn to calm patients undergoing procedures. Communicate patient information clearly to other health providers in written notes and oral presentations. Work constructively and effectively with all members of the trauma care team, including nurse clinicians, floor nurses, social workers, fellow physicians, and therapists. Apply appropriate culturally-sensitive communication skills with patients and families (i.e. effective listening, awareness of nonverbal cues, and use of open-ended questions). Counsel and educate patients and families on their treatment options, expected surgical outcomes and prognosis, and home care needs. The resident's skill in this domain is expected to progress and develop as they advance in standing from PGY2 to PGY5, with junior residents addressing routine care issues and progressing with more difficult discussions, such as end of life or loss of limb care. The PGY5 will demonstrate leadership to the junior residents and provide feedback to help guide their development in this competency.

Practice-Based Learning and Improvement

I. Formulate future learning goals based on feedback gained from others; exposure to complications, medical errors, or "near misses;" personal awareness of knowledge gaps; and the experience gained on this rotation. Develop real time strategies for filling knowledge gaps that will benefit our patient population. Following an emergent consult or surgical procedure, debrief what went well and what could have been done differently. Become familiar with the educational resources available while working on the trauma service. Demonstrate ability to form a clinical question and identify available resources to resolve questions. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors, and subordinates to improve patient care). Over time and with progression through the program, advance from studying required readings to self-guided research and exploration to, by the PGY5 year, incorporation of information and skills into a practice pattern that includes lifelong learning.

Professionalism

I. Demonstrate respect, compassion, honesty, and integrity. Reflect on biases toward particular illnesses or patient groups and take steps to assure that these biases do not interfere with patient care. Appreciate the psychosocial impact traumatic injuries can have on a patient and families. Respect patient privacy, autonomy, and need to maintain a positive self-concept, irrespective of age, gender or health belief system, and regardless of acuity of diseases. Demonstrate sensitivity and responsiveness to patient culture, age, gender, race, religion, national origin, socioeconomic status, sexual orientation, and disabilities. Be sensitive to the ethical and legal dilemmas faced by providers working with patients on the trauma service. Demonstrate accountability to patients and society and to the profession. Acquire skills in basic responsibilities such as timeliness, appropriate attire, and empathetic interactions with patients, and with experience, move toward maintaining professional demeanor in stressful situations and observing and acting upon ethical violations. By the PGY5 year, demonstrate leadership by contributing to the education of others about organizational policies and by acting in compliance with the AAOS Standards of Professionalism.

Systems-Based Practice

I. Understand the role of a Level 2 trauma center in the management of simple and complex orthopaedic trauma problems. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the emergency department, trauma bay, patient care areas, and operating room. Understand the responsibility of the orthopaedic trauma surgeon in managing indigent patients with traumatic injuries. Direct patients and families toward individuals within the institution that can help them access support and resources. Understand the role of health care managers and surgeon extenders in the surgical management of patients. Advocate for quality patient surgical care within the system. Understand when, how, and why to request a consult from medical and surgical specialists, and how to use that information. Become fluent in appropriate and timely

documentation. Over time, progress to understand and negotiate economic differences within health care systems. Participate in quality improvement projects. By the PGY5 year, anticipate and facilitate operating room team flow in a multi-case day and manage the documentation and order submission tasks of junior residents.

Evaluation

I. Case and procedure logs as appropriate
II. Attending evaluation of resident
III. Verbal feedback is provided by attending staff in both the operating room and the clinic and more formally mid-way through the rotation
IV. Mini-CEX evaluation
V. Bedside procedural skills evaluation
VII. 360 degree evaluation
VIII. Residents collect cases and present during rotations in weekly fracture conferences and monthly morbidity and mortality conferences. Junior residents present the cases and senior residents participate actively in discussion to improve patient management and outcomes.

Sports Orthopaedics - PGY 5

Description

The sports medicine rotation is designed to expose patients to the clinical evaluation and surgical care of the sports patient from adolescence into adulthood. The rotation takes place at CMH and residents participate in this rotation in their PGY 2, PGY3, and PGY5 years.

Resident Role and Expectations

The resident's primary role will be to perform major and minor operations in the capacity of assistant or primary surgeon under supervision of teaching attending faculty. Furthermore, they will participate in the initial evaluation, perioperative care and nonoperative management of orthopaedic sports injuries and diseases, including those of the shoulder, elbow, hip, knee, and ankle. Resident clinical and operative responsibilities are as follows:

I. The PGY5 is preparing for transition to independent practice and should function near that level. They are expected to be able to function in an autonomous fashion in clinics while under supervision and perform common sports and arthroscopic surgeries with minimal intervention or guidance, including the management of complex surgical complications and coordination of the surgical team. The PGY5 will contribute to the education of junior residents on service, providing support and feedback. Through the rotation, the PGY5 resident will develop leadership skills and practice in an autonomous fashion consistent with a junior attending, under continued supervision and guidance.

Readings

DeLee and Drez's Orthopaedic Sports Medicine: Principles and Practices
Miller & Thompson

Operative Techniques in Orthopaedic Surgery
Wiesel et al

OKU-Sports

Faculty Contact

Stephan Sweet, MD
Sports Orthopaedics

Kentaro Suzuki, MD
Sports Orthopaedics

Petros Frousiakis, DO
Sports Orthopaedics

Anthony DeGiacomo, MD
Sports Orthopaedics

Educational Goals and Objectives

Patient Care and Procedural Skills

I. Identify key elements in the history and exam to evaluate athletes presenting with conditions involving the musculoskeletal system. Counsel athletes regarding risks and prevention of orthopaedic injuries sustained from playing sports. Order and interpret (with the assistance of the radiologist) the following common diagnostic imaging procedures when evaluating and managing patients with orthopaedic conditions: plain radiographs, body MRI, CT scan, radionuclide bone scans, and ultrasound.

II. Become proficient in the following skills consistent with the resident's level of training as outlined in resident role above:
    - Directing operating room personnel in a safe and efficient manner
    - Physical examination to identify typical findings of sports medicine injury to the shoulder, elbow, hip, knee, and ankle
    - Subacromial and intra-articular shoulder joint injections
    - Knee joint injections
    - Complex rotator cuff repair
    - Bankart/labral repair
    - Total shoulder arthroplasty
    - Reverse total shoulder arthroplasty
    - Ulnar collateral ligament reconstruction
    - Complex Knee arthroscopy
    - Complex Shoulder arthroscopy
    - Hip arthroscopy
    - Elbow arthroscopy
    - Meniscectomy
    - Meniscus repair
    - ACL reconstruction
    - Discoid meniscus saucerization
    - MPFL reconstruction
    - Microfracture

Medical Knowledge

I. Demonstrate broad understanding of the anatomy and biomechanics of the shoulder, elbow, hip, knee and ankle as it relates to common sports medicine injuries. Exhibit advanced knowledge of the typical mechanisms of injury for common sports medicine problems. Possess a strong working knowledge of arthroscopic and open surgical approaches, including those of the shoulder, elbow, knee and ankle.

II. Develop and demonstrate knowledge about the following sports topics, consistent with the resident's level of training as outlined in resident role above:
    - ACL tear

- Rotator cuff tears
- Massive rotator cuff tear treatment options
- Shoulder instability
- Total shoulder arthroplasty
- Reverse shoulder arthroplasty
- Meniscal injury
- PCL tears
- Collateral ligament tears
- Posterolateral corner injury
- Femoroacetabular impingement
- Ulnar collateral ligament injury
- Patellar instability
- Biceps tendinitis
- Superior Capsular Reconstruction

Interpersonal and Communication Skills

I. Create and sustain a therapeutic and ethically sound relationship with patients and families. Provide information to patients using effective nonverbal, explanatory, questioning, and writing techniques. Learn to calm patients undergoing procedures. Communicate patient information clearly to other health providers in written notes and oral presentations. Work constructively and effectively with all members of the trauma care team, including nurse clinicians, floor nurses, social workers, fellow physicians, and therapists. Apply appropriate culturally-sensitive communication skills with patients and families (i.e. effective listening, awareness of nonverbal cues, and use of open-ended questions). Counsel and educate patients and families on treatment options, expected surgical outcomes and prognosis, and home care needs. Progress in the ability to educate and counsel patients from the PGY2 to PGY5 year from addressing routine care issues to discussing such complex and difficult issues as injuries that could end a patient's sports career. By PGY5 year, demonstrate leadership and act as a role model to junior residents and provide feedback to help guide their development in this competency.

Practice-Based Learning and Improvement

I. Use feedback gained from others; exposure to complications, medical errors or "near misses;" personal awareness of knowledge gaps; and the experience gained on this rotation to formulate future learning goals. Develop real time strategies for filling knowledge gaps that will benefit this patient population. Following an emergent consult or following a surgical procedure, debrief what went well and what could have been improved. Become familiar with the educational resources available while working on the sports service. Demonstrate ability to form a clinical question and identify available resources to resolve questions. Seek and incorporate feedback and self-assessment into a plan for lifelong professional growth and practice improvement (e.g. use evaluations provided by patients, peers, superiors and subordinates to improve patient care). Over time and with progression through the program, advance from studying required readings

to self- guided research and exploration to, by the PGY5 year, incorporation of information and skills into a practice pattern that includes lifelong learning.

Professionalism

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Systems-Based Practice

I. Understand the role of inpatient and outpatient surgical care for the sports orthopaedic patient. Practice cost-effective health care and resource allocation, specifically reducing the use of unnecessary preoperative and postoperative screening and/or testing without compromising patient care. Participate in hospital initiatives to improve quality and efficiency in the emergency department, patient care areas, and operating room. Direct patients and families toward individuals within the institution that can help them access support and resources. Understand the role of health care managers and surgeon extenders in the surgical management of patients. Advocate for quality patient surgical care within the system. Understand when, how, and why to request a consult from medical and surgical specialists, and how to use that information. Become fluent in appropriate and timely documentation. Over time, progress to understand and negotiate economic differences within health care systems. Participate in quality improvement projects. By the PGY5 year, anticipate and facilitate operating room team flow in a multi-case day and manage the documentation and order submission tasks of junior residents.

Evaluation

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