“Good fences make good neighbors.” *Mending Wall*, by Robert Frost.*

The provision of yet another handbook containing requirements, rules, and regulations may seem to men and women of goodwill as unnecessary and vaguely insulting. The recipient may feel that his integrity is called into question by the provision of rules and regulations. The person who is selected for orthopaedic residency ought to be counted upon to do what is medically, ethically, and educationally correct.

Ironically, it is for the honest person that contracts are written. It is said in the legal profession that contracts keep honest people honest by providing a list of what was agreed to. It is the dishonest individual who will attempt to find a way around what was agreed to.

It is also not the purpose of the handbook to fixate the resident’s attention on rules and regulations as this in itself may distract from the resident’s own ethical and educational passion. It has also been reported that the highest rate of book theft from university libraries occurs in law schools and seminaries. These are two institutions where individuals may be concerned only with the letter of the law rather than the spirit of the law.

It is therefore hoped that the recipient of the handbook will receive it in the spirit in which it is issued. Cicero said that, “Ninety-nine percent of the time we can rely on our judgment to know what is the right thing to do”. It is not to be read and memorized at a single sitting but to provide the resident with a reference. This will allow him or her to answer questions year round when occasions of uncertainty arise.

Christopher M. Jobe, M.D.  
Montri D. Wongworawat, M.D.

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INSTITUTIONS AND FACULTY
FACULTY

Loma Linda University Medical Center

Core Faculty Members
- Nirav Amin, M.D.
- Thomas Burgdorff, M.D.
- Olumide Danisa, M.D.
- Corey Fuller, M.D.
- Joey Johnson, M.D.
- Joseph Liu, M.D.
- Martin J. Morrison, III, M.D.
- Scott C. Nelson, M.D.
- Wesley P. Phipatanakul, M.D.
- Rebecca Rajfer, M.D.
- Barth B. Riedel, M.D.
- Arthur Thiel, M.D.
- Nadine Williams, M.D.
- Montri D. Wongworawat, M.D.
- Diana Young, MD

Other Faculty Members
- DuWayne Carlson, M.D.
- John Chrisler
- Serkan Inceoglu, Ph.D.
- Mohan Subburaman, Ph.D.

Arrowhead Regional Medical Center

Core Faculty Member
- James Matiko, M.D.

Other Faculty Members
- Jonathan Allen, M.D.
- Paul Burton, D.O.
- Peter Elsissy, M.D.
- Barry Grames, M.D.
- Zachary Hadley, M.D.
- Gail Hopkins, M.D.
- Ken Jahng, M.D.
- Conner LaRose, M.D.
- Sang Le, M.D.
- Clifford Merkel, M.D.
- M. Kenneth Mudge, M.B.,Ch.B.
- Daniel Patton, M.D.
- John Skubic, M.D.
- Jason Solomon, M.D.
- John Steinmann, D.O.
- Andrew Wong, M.D.

Jerry L. Pettis Memorial Veterans Administration Medical Center

Core Faculty Members
- Hasan M. Syed, M.D.
- Barry E. Watkins, M.D.
- Lee M. Zuckerman, M.D.

Other Faculty Members
- Wayne K. Cheng, MD
- Thomas Donaldson, M.D.
- James E. Shook, M.D.
PARTICIPATING INSTITUTIONS AND CONTACT INFORMATION

Loma Linda University Medical Center

Program Director
- Montri D. Wongworawat, M.D.
- Loma Linda University, East Campus
- 11406 Loma Linda Drive, Suite 223A
- Loma Linda, CA 92354
- Phone: (909) 558-6444 x62705
- Fax: (909) 558-6118
- E-mail: dwongworawat@llu.edu

Residency Program Coordinator
- Lora Benzatyan
- E-mail: lbenzatyan@llu.edu

Arrowhead Regional Medical Center

Site Director
- James Matiko, M.D.
- Department of Orthopedics
- 400 N. Pepper Avenue, 6th Floor South
- Colton, CA 92324
- Phone: (909) 580-6362
- Fax: (909) 580-6369

Site Secretary
- Vida Pence
- E-mail: vida.pence@armc.sbcounty.gov

Jerry L. Pettis Memorial Veterans Administration Medical Center

Site Director
- Lee M. Zuckerman, M.D.
- Department of Orthopedics
- 11201 Benton Street
- Loma Linda, CA 92357
- Phone: (909) 583-6073
- Fax: (909) 777-3291
PROGRAM AND BOARD REQUIREMENTS
REQUIREMENTS FOR TAKING BOARD EXAMINATIONS

The certifying examination is divided into two parts. Part I is a written examination which may be taken after the completion of the educational requirements. Part II is an oral examination which may be taken after passing Part I, completion of the 22-month practice requirement, evaluation of the applicant’s practice, and admission to the examination. A candidate must pass both parts of the certifying examination to be certified.

After taking and passing the written examination, candidates have five years to take or retake the oral examination. Candidates who do not pass the oral examination within those five years must retake and repass the written examination before applying to take the oral examination. Time spent in fellowship education after passing Part I will not count as a part of the five-year time limit.

An applicant seeking certification by the American Board of Orthopaedic Surgery must satisfy the educational requirements that were in effect when he or she first enrolled in an accredited orthopaedic residency. For all other requirements, an applicant must meet the specifications in effect at the time of application.

Educational requirements

An applicant must satisfactorily complete and document the minimum educational requirements in effect when he or she first enrolled in an accredited orthopaedic residency.

Upon successful completion of 51 of the 60 months of required education and upon the recommendation of the program director, a candidate may apply to take Part I of the examination.

In order to be admitted to the examination, the candidate must complete the full 60 months of required education by June 30th of the year of the exam.

An applicant who has received orthopaedic surgery residency education in Canada must have fulfilled the requirements of the American Board of Orthopaedic Surgery and must have passed the qualifying examination in orthopaedic surgery of the Royal College of Physicians and Surgeons of Canada before applying for either part of the Board’s certifying examination by June 30th of the year of the exam.

License requirement

Applicants who are in practice at the time they apply for Part I and all applicants for Part II must either possess a full and unrestricted license to practice medicine in the United States or Canada or be engaged in full-time practice in the United States federal government for which licensure is not required. An applicant will be rendered ineligible for any part of the certifying examination by limitation, suspension, or termination of any right associated with the practice of medicine in any state, province, or country (“jurisdiction”) due to violation of a medical practice act or other statute or governmental regulation; to disciplinary action by any medical
licensing authority; by entry into a consent order; by voluntary surrender while under investigation; or suspension of license; provided that an applicant shall not be disqualified solely on the basis of a limitation, suspension, termination or voluntary surrender of a license in any jurisdiction where the applicant does not practice, and where the action of such jurisdiction is based upon and derivative of a prior disciplinary action of/taken by another jurisdiction and the applicant has cleared any such prior disciplinary action and/or has had his or her full and unrestricted license to practice restored in all jurisdictions in which the applicant is practicing and, provided further that any jurisdiction granting the applicant a full and unrestricted license was made aware of and took into account any outstanding disciplinary restrictions and/or license restrictions in other jurisdictions in granting such full and unrestricted license. Entry into and successful participation in a non-disciplinary rehabilitation or diversionary program for chemical dependency authorized by the applicable medical licensing authority shall not, by itself, disqualify an applicant from taking a certification examination.

Board eligible status

Effective July 1, 1996 the Board recognizes those candidates who have successfully completed Part I and are awaiting to take Part II as being “Board Eligible.” The limit of Board Eligibility is the five years candidates have to take or retake the oral examination (Part II) after passing Part I. Candidates who do not pass the oral examination (Part II) within those five years will lose their Board Eligible status.
APPLICATION FOR ABOS PART I

Checklist of Requirements for Program Director Sign-off

Time requirements

Anticipated completion of five years (60 months) of accredited post-doctoral residency
  - One year (12 months) must be served in an accredited graduate medical education program whose curriculum fulfills the content requirements for the PGY-1 and is determined or approved by the director of an accredited orthopaedic surgery residency program. An additional four years (48 months) must be served in an accredited orthopaedic surgery residency program whose curriculum is determined by the director of the accredited orthopaedic surgery residency program.

Anticipated satisfactory completion of at least 46 weeks of full-time orthopaedic education for each of the four years by June 30 (i.e., maximum leave: 4 weeks vacation and 2 weeks sick leave)

Content requirements

Approved first year rotations
12 months adult orthopaedics
12 months fractures/trauma
6 months pediatric orthopaedics
6 months basic and/or clinical specialties

Sufficient scope
  - Children’s orthopaedics
  - Anatomic areas—upper and lower extremities, spine, and pelvis
  - Acute and chronic care
  - Related clinical subjects
  - Research
  - Basic science

Completion of research manuscript requirements

Professional requirements

Maintain up-to-date ACGME case logs
Maintain up-to-date time logs
Comply with ACGME core curriculum requirements
Demonstrate sufficient professional ability to practice competently and independently, as evidenced by passing every clinical rotation as outlined by Rotation-Specific Goals and Objectives
TEACHING PROGRAM
# Didactic Conferences

## Overall Schedule

<table>
<thead>
<tr>
<th></th>
<th>Core Teaching</th>
<th>Satellite</th>
<th>Subspecialty</th>
<th>Misc</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Grand Rounds</td>
<td>Indications</td>
<td>PGY-2 Core</td>
<td>PGY-3 Core</td>
<td>ARMC Conference</td>
</tr>
<tr>
<td>Core</td>
<td>Basic Science (2 hrs/wk)</td>
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<td></td>
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<tr>
<td></td>
<td>PGY2</td>
<td></td>
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<tr>
<td></td>
<td>PGY3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGY4</td>
<td>S&amp;J/Basic Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGY5</td>
<td>Hand/Foot (LLU1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| PGY2 | Spine | x | x | x | x | | | | | x |
| Sports/Joints | x | x | x | x | | | | | |
| Night Float | x | x | x | x | | | | | |
| Hand/UE/Foot | x | x | x | x | | | | x |
| Tumor/Trauma | x | x | x | x | | | | | |

| PGY3 | ARMC | x | x | x | x | | | | |
| Pediatrics Jr. | x | x | x | x | | | | x |
| VAH | x | x | x | x | x | | | |
| Pediatrics/Research | x | x | x | x | x | | x | x |
| Research | x | x | x | x | | | | |

| PGY4 | S&J/Basic Science | x | x | x | | | x | x | x |
| ARMC | x | x | | | | | | |
| VAH | x | x | | x | x |
| Pediatrics Senior | X | X | X | | x |

| PGY5 | Hand/Foot (LLU1) | x | x | x | | x | x |
| Peds/Trauma (LLU2) | x | x | x | | x | x |
| ARMC | x | x | | x | x |
| VAH | x | x | | x | x |
Core Teaching

Grand Rounds

This conference is conducted on Wednesday mornings, from 6:30 to 7:30.

The educational objectives of this conference enable the participant to:

- Understand compliance issues pertaining to orthopaedic practice; gain breadth of knowledge in orthopaedics—trauma, pediatric issues, adult reconstructive challenges, spine diseases, and upper and lower extremity musculoskeletal problems; learn radiation and x-ray applications for diagnosis; and develop cultural/linguistic competency.

The curriculum is based on core topics, which are repeated every two years. Miscellaneous lectures are also added to complete the schedule. Core topics include (0 = every year, 1 = odd year [2014-2015], 2 = even year [2013-2014]):

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>TOPIC</th>
<th>YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Evaluation and management services</td>
<td>0</td>
</tr>
<tr>
<td>General</td>
<td>Principles of coding</td>
<td>0</td>
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<tr>
<td>Radiography</td>
<td>Fundamentals of MRI evaluation</td>
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<tr>
<td>Ankle</td>
<td>Ankle fractures</td>
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<tr>
<td>Elbow</td>
<td>Elbow fractures and dislocations</td>
<td>1</td>
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<tr>
<td>Elbow</td>
<td>Shoulder and elbow pathology in the throwing athlete</td>
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<tr>
<td>Foot</td>
<td>Calcaneal fractures</td>
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<tr>
<td>Foot</td>
<td>Fractures and dislocations of the mid and forefoot</td>
<td>1</td>
</tr>
<tr>
<td>General</td>
<td>Principles of bone fixation</td>
<td>1</td>
</tr>
<tr>
<td>General</td>
<td>Soft tissue coverage of the upper extremity</td>
<td>1</td>
</tr>
<tr>
<td>General</td>
<td>Open fracture treatment</td>
<td>1</td>
</tr>
<tr>
<td>General</td>
<td>Compartment syndrome</td>
<td>1</td>
</tr>
<tr>
<td>Hand</td>
<td>Fingertip injuries</td>
<td>1</td>
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<tr>
<td>Hand</td>
<td>Carpal instability</td>
<td>1</td>
</tr>
<tr>
<td>Hand</td>
<td>Upper extremity nerve injuries, paralysis, and tendon transfers</td>
<td>1</td>
</tr>
<tr>
<td>Hand</td>
<td>Brachial plexus palsy, obstetrical and adult</td>
<td>1</td>
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<tr>
<td>Hand</td>
<td>Extensor tendon injury, repair, and late reconstruction</td>
<td>1</td>
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<tr>
<td>Hand</td>
<td>Infections of the hand</td>
<td>1</td>
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<tr>
<td>Hand</td>
<td>Degenerative arthritis of the hand and wrist</td>
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<tr>
<td>Hand</td>
<td>Distal radius fracture</td>
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<tr>
<td>Hip</td>
<td>Concepts of total hip arthroplasty</td>
<td>1</td>
</tr>
<tr>
<td>Hip</td>
<td>Femoral neck and intertrochanteric fractures</td>
<td>1</td>
</tr>
<tr>
<td>Inflam</td>
<td>Seronegative spondyloarthropathies</td>
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</tr>
<tr>
<td>Knee</td>
<td>Basic concepts of total knee arthroplasty</td>
<td>1</td>
</tr>
<tr>
<td>Knee</td>
<td>Unicompartmental knee arthroplasty</td>
<td>1</td>
</tr>
<tr>
<td>Knee</td>
<td>Ligamentous injuries of the knee</td>
<td>1</td>
</tr>
<tr>
<td>Knee</td>
<td>Cartilage and meniscus surgery</td>
<td>1</td>
</tr>
<tr>
<td>Peds</td>
<td>Pediatric spine disorders, scoliosis, kyphosis, instability</td>
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<tr>
<td>Peds</td>
<td>Neuromuscular disorders</td>
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<tr>
<td>Peds</td>
<td>Developmental dysplasia of the hip</td>
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<tr>
<td>Peds</td>
<td>Slipped capital femoral epiphysis</td>
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<tr>
<td>Category</td>
<td>Description</td>
<td>Frequency</td>
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<tr>
<td>Peds</td>
<td>Pediatric foot deformities</td>
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<td>Pelvis</td>
<td>Acetabular fractures</td>
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<tr>
<td>Radiography</td>
<td>Spinal imaging</td>
<td>1</td>
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<tr>
<td>Shoulder</td>
<td>Shoulder instability</td>
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<tr>
<td>Shoulder</td>
<td>Fractures and dislocations of the shoulder girdle</td>
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<tr>
<td>Spine</td>
<td>Cervical spondylosis and stenosis</td>
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<tr>
<td>Spine</td>
<td>Fractures of the spine</td>
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<tr>
<td>Spine</td>
<td>Spondylolisthesis</td>
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<tr>
<td>Tibia</td>
<td>Tibial shaft fractures</td>
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</tr>
<tr>
<td>Tumors</td>
<td>Soft tissue tumors</td>
<td>1</td>
</tr>
<tr>
<td>Tumors</td>
<td>Benign bone tumors</td>
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</tr>
<tr>
<td>Tumors</td>
<td>Pediatric tumors</td>
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<td>Ankle</td>
<td>Tibial plafond fractures</td>
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<tr>
<td>Ankle</td>
<td>Ankle instability</td>
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<tr>
<td>Elbow</td>
<td>Elbow arthroscopy</td>
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<tr>
<td>Femur</td>
<td>Femoral shaft fractures, adult and pediatric</td>
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<tr>
<td>Foot</td>
<td>Talar fractures and dislocations</td>
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<tr>
<td>Foot</td>
<td>Hallux valgus and hallux rigidis</td>
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<td>Forearm</td>
<td>Radius and ulnar shaft fractures</td>
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<tr>
<td>General</td>
<td>Flaps and soft tissue coverage of the lower extremity</td>
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<td>General</td>
<td>Gait, amputations, and prosthesis</td>
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<td>Orthopaedic infections</td>
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<td>Electrodiagnostic studies</td>
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<tr>
<td>Hand</td>
<td>Replantation</td>
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<td>Hand</td>
<td>Scaphoid fracture</td>
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<td>Hand</td>
<td>Compressive neuropathies of the upper extremity</td>
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<tr>
<td>Hand</td>
<td>Flexor tendon injury, repair, and late reconstruction</td>
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<tr>
<td>Hand</td>
<td>Rheumatoid arthritis, upper extremity</td>
<td>2</td>
</tr>
<tr>
<td>Hand</td>
<td>Dupuytren’s disease</td>
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<tr>
<td>Hand</td>
<td>Fractures of the hand</td>
<td>2</td>
</tr>
<tr>
<td>Hip</td>
<td>Concepts of revision hip arthroplasty</td>
<td>2</td>
</tr>
<tr>
<td>Humerus</td>
<td>Humeral shaft fractures</td>
<td>2</td>
</tr>
<tr>
<td>Inflam</td>
<td>Rheumatoid arthritis</td>
<td>2</td>
</tr>
<tr>
<td>Inflam</td>
<td>Metabolic bone disease</td>
<td>2</td>
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<tr>
<td>Knee</td>
<td>Revision knee arthroplasty</td>
<td>2</td>
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<tr>
<td>Knee</td>
<td>ACL reconstruction</td>
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<td>Knee</td>
<td>Patellar malalignment and instability</td>
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<td>Tibial plateau fractures</td>
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<td>Peds</td>
<td>Cerebral palsy</td>
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<td>Deformities of the lower extremity, rotational, alignment, length</td>
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<td>Peds</td>
<td>Legg-Calve-Perthes disease</td>
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<td>Peds</td>
<td>Lower limb deficiencies</td>
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<td>Pelvis</td>
<td>Pelvic ring fractures</td>
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<td>Radiography</td>
<td>Nuclear medicine</td>
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<td>Shoulder</td>
<td>Prosthetic shoulder reconstruction</td>
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<tr>
<td>Shoulder</td>
<td>Shoulder impingement and rotator cuff pathology</td>
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<tr>
<td>Spine</td>
<td>Spinal cord injuries</td>
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<tr>
<td>Spine</td>
<td>Spinal stenosis</td>
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</tbody>
</table>
**Basic Science**

This is a two-hour conference, held on Tuesday evenings, from 6:30 to 8:30.

The content of this conference includes instruction in anatomy, biomechanics, pathology, oncology, physiology, embryology, immunology, pharmacology, biochemistry, microbiology, and radiology, as they relate to the musculoskeletal system and the practice of orthopaedic surgery.

Anatomy sessions include formal lectures and anatomic dissections.

Pathology lectures encompass gross and microscopic pathology with correlations with clinical and radiographic findings.

Biomechanical instruction focuses on principles, terminology, and musculoskeletal applications.

Radiographic sessions include formal lectures relating roentgenographic findings, computed tomography and magnetic resonance imaging interpretation and clinical correlation.

Journal clubs, scheduled throughout the year, include discussion on specific topics and critical evaluation of historic and current literature.

Other lectures cover the breadth of orthopaedic basic science. Occasionally, core competency lectures are included in this series, including but not limited to: ethics, patient relations, and communication.

**Indications**

This conference is held on Wednesday mornings, from 7:30 to 8:30.

The focus of this conference is on surgical indications, mechanisms of disorders, operative approaches, complications, and clinical outcomes.

One Wednesday of the month is reserved for Morbidity and Mortality Conference. Cases are presented by senior residents for each service, are critically reviewed, and referred to QI committee as necessary. Cases that should be reported to Morbidity and Mortality Conference include, but are not limited to:

- Unplanned return to the operating room during the same hospitalization
- Unplanned readmission for a related problem within 30 days
- Intraoperative/postoperative complication (e.g., infection, deep venous thrombosis, etc.)
- Death
**PGY-2 Core**

This conference is held on Thursday mornings, from 6:30 to 7:30, and moderated by an orthopaedic attending.

It is attended by members of the PGY-2 class. The content focuses on the basic orthopaedic fracture text.
- Rockwood and Green’s Fractures in Adults
- Rockwood and Wilkins’ Fractures in Children.

**PGY-3 Core**

This conference is held on Thursday mornings, from 6:30 to 7:30, and moderated by an orthopaedic attending.

It is attended by members of the PGY-3 class. The content focuses on pediatric orthopaedics and basic orthopaedic surgical technique. The texts used for this conference are:
- Lovell and Winter’s Pediatric Orthopaedics
- Campbell’s Operative Orthopaedics

**Satellite**

**ARMC Clinical Care Conference**

This conference is held on Tuesday mornings, from 8:00 to 9:00.

The content of this conference includes review of cases, patient management, operative techniques, and case presentations.

**VA Indications**

This conference is held on Tuesday afternoons, at the end of clinic.

The focus of this conference is on surgical indications, mechanisms of disorders, operative approaches, complications, and clinical outcomes relating to the upcoming cases of the week.

**VA Sports Conference**

This conference is held on Thursdays during the noon hour.

The focus of this conference is on didactic teaching in Sports topics along with case-based discussions.

**Subspecialty**

**Hand**

This conference is held on Tuesday mornings, from 6:30 to 7:30.
Interesting hand surgery cases for the upcoming week are presented and discussed at this conference. Furthermore, a rotating topics list for core Hand material is covered during the course of each rotation.

**Pediatrics**
This conference is held on Monday mornings, from 6:30 to 7:30.
Interesting Pediatric orthopaedic cases for the week and their indications are discussed. Specific topics may also be assigned.

**Spine**
This conference is held on Monday mornings, from 6:45 to 8:00.
The content of this conference revolves around a core reading curriculum, which covers the basics of spine surgery.

**Sports**
This conference is held on Friday mornings, from 6:30 to 7:30.
The content of this conference revolves around a core reading curriculum, which covers the basics of sports medicine.

**Joints**
These conferences are held on Monday and Friday mornings, from 6:30 to 7:30.
Total joint cases of the week are presented along with pre- and post-operative radiographs. Discussion is led by attending staff.

**Miscellaneous**

**QI**
This conference is held every other month, usually on Wednesday evenings, usually from 6:00 to 7:00.
The agenda is set by the QI chair in conjunction with the Quality Resource Management staff. This allows the residents to participate in a forum to gain experience in professionalism and systems-based practice.

**Research**
This conference is held as scheduled by the research committee and research faculty.
The content includes discussions based on selected papers focused on research and information analysis and assimilation. Furthermore, under staff supervision, the resident will critically analyze research papers. The educational objectives are to enable the learner to:

- Locate and appraise and use evidence from scientific studies; apply knowledge of study designs and statistical methods; and use information technology to access medical information to support their own education.

**Remediation and Corrective Procedures**

**Remediation**

Any resident that attends less than 90% of required conferences when averaged over three months (excluding vacation and formal leave days) shall be required to perform remedial work.

Remediation for any missed conference shall include a one-page single-spaced typewritten report pertaining to the topic discussed in the missed conference. The minimum content requirement shall be no less than a summary of standard textbook recommendations and review of current literature.

**Disciplinary Action**

A Letter of Warning shall be sent to any resident that attends less than 80% of required conferences when averaged over three months (excluding vacation and formal leave days).

When any resident has two consecutive quarters with less than 80% attendance, or when attendance falls below 70% in any quarter, that resident shall be placed on probation for one year and/or suspended for one month, at the Program Director’s discretion.
**Clinical Performance Expectations**

**Daily Schedule**

Residents shall start clinical activity no earlier than 06:00 when not on call and when not on night float.

The attending will make rounds at his/her discretion. After hospital rounds and didactic conferences, the resident will proceed with other responsibilities (clinic, surgery).

**Inpatient Ward**

**Role of the Junior Resident**

The junior resident on each service shall round on all patients on the service. Junior residents should be in communication with the responsible senior resident. Ultimate decisions regarding patient care shall be coordinated with the attending physician.

Each evening and prior to leaving for the weekend or other extended period, each junior resident shall conduct a verbal sign-out with the incoming on-duty resident.

**Role of the Intern**

The intern shall assist in gathering information (follow-up on labs and x-rays) and performing minor bedside procedures.

**The Trauma Team**

The Trauma Team shall consist of the intern, nurse practitioner, chief resident, and the Orthopaedic Trauma attending. The on-call night resident and the day team will participate in formalized hand-offs.

**Rounding**

Upon arriving at a bedside, the resident responsible for the patient should present an abbreviated status report including vital signs, test reports and plan of treatment including changes since the previous day.

The general care plan for the patient(s) will ultimately be determined by the attending physician who was on call and accepted responsibility for the care of the patient.

All inpatients that have had surgery should have a documented post-op check by either the resident on the respective service or the on-call resident. Any patient admitted for observation (e.g. for monitoring compartment syndromes) should also have documented checks every few hours.
The resident involved in the surgical case shall make rounds, see the patient, and be involved in the post-operative inpatient care.

**Weekend Rounds**

The senior resident’s role on weekends and holidays is to coordinate the entire service. The senior may leave the hospital only after all rounding has been completed and in the absence of surgical cases.

Junior residents off duty shall sign out to the on-call resident prior to leaving for the weekend.

**Notification to Attending Physician**

It is the responsibility of the resident on call to notify the attending orthopaedic surgeon on call of any admissions, potential operative cases, changes of medical status (such as transfer to ICU) as soon as possible.

It is the responsibility of the resident to consult with the patients’ family members and keep them updated on the status of the patient.

It is the responsibility of the resident to maintain documentation of information and consults on the patient’s chart.

**Interdisciplinary Rounds**

Interdisciplinary rounds are instituted to maximize resident learning in the domains of Patient Care, Communication, Professionalism, and Systems-Based Practice. Residents are given opportunity to develop skills in working effectively as a member of the health care team. Members of the team include the nurse practitioner, charge nurse, bedside nurse, physical therapist, pharmacist, case manager, chaplain, and social worker. The responsibility of the resident is to streamline each patient’s experience through coordinating activities. This encompasses communication skills at the bedside, between healthcare professionals, and systems-based facilitation of patient care.

**On-call Duties**

**Inpatient Consults**

Consults are to be performed on a timely basis by the intern or resident on call. Following notification, the intern or resident is to assess the patient including the physical exam, review of pertinent lab values and x-rays. A differential diagnosis and treatment plan should be prepared. A synopsis of this information should be presented in an organized fashion with selected x-rays (when appropriate) to the orthopaedic junior resident, senior resident, or attending on call. The junior orthopaedic resident is responsible for supervising all intern-performed consultations.
The formal consult shall be confirmed by the attending on call within 24 hours. It is the responsibility of the intern/resident to notify the appropriate attending.

**Emergency Department Consults**

The intern or junior resident shall evaluate consults from the Emergency Department in a timely manner. In most cases, this shall be within two hours. All manipulative procedures and all cases requiring surgery shall be evaluated and supervised by the junior resident.

Scheduling of cases from the Emergency Department shall be coordinated by the senior resident, with appropriate communication with the on-call attending.

Chiefing of consultations shall proceed along the following chain: intern/PA, junior resident, senior resident, attending staff.

For patients that need to be seen by Ortho (clinic or surgery) after discharge from the ED/Hospital, do the following:

- Tell the patient that we will let our clinic know, and the clinic will reach out to try to make an appointment; however, eligibility will be checked as well, to make sure that we are in their insurance’s network.
- If needing surgery by the HAND SERVICE, go ahead and put in the case request. Otherwise, go to #3.
- Send a chart message to Davina Duchesne (Clinic Manager), or write an email (best is probably a single email in the morning after sign-out) to DMDuchesne@llu.edu. Include: (a) name and MRN, (b) what is needed, (c) time frame, and (d) anything else, such as case request placed.

This does not apply to patients who don’t need to see Ortho (such as, minor lacerations for primary care, out of state patients leaving town).

Also, do not promise patients that they will get an appointment or surgery; they will have their eligibility verified first, and they may need to see their own orthopedist within their insurance network.

**Surgeries**

The senior resident shall coordinate all operative cases. To facilitate hands-on learning, the junior resident should learn to work efficiently so as to take advantage of operative opportunities while on call.

**Nightly Check Out and Duties**

The senior resident on call shall receive a check out from the day call junior resident. This will allow the senior to check to see if any traumas or other consults have occurred. The senior resident will also check with the operating room to see if there has been trauma that has bypassed the day call resident and will also analyze the coverage of attending surgery in the operating room. The senior resident shall only be utilized for trauma coverage.

From Monday through Friday, the intern(s) on the orthopaedic service shall commence signout to the night call resident at 18:00, and an additional 30 minutes may be utilized to complete sign
out. The senior on-call resident shall ensure that the intern should be off duty at 18:30 but no later than 19:00. The exception is on Tuesday, where the intern may be used to cover until 20:00. The senior resident shall coordinate dismissal strategies for the other residents while assigning responsibility to the night float resident.

**Backup Call**
The backup call resident shall remain in the vicinity, no more than 90 minutes away.

**Orthopaedic Emergencies**
All orthopaedic emergencies require notification of the surgeon on call as soon as possible. These include, but are not limited to:
- Open fractures
- Displaced supracondylar fractures
- Compartment syndrome
- Ischemic extremity
- Hip dislocations
- Flexor tendon injuries
- Spine injuries with progressive nerve loss

**Transfers**
All requests for transfer(s) of patient(s) from other facilities are to be referred to the attending on call.

**Clinic Appointments**
Return appointments to the clinic are scheduled on the basis of urgency of diagnosis and possibility of changes during the interim. Therefore, all fractures which may displace are to be seen weekly for the first three weeks following reduction. Those that are not likely to displace (because of no original displacement, etc.) should be scheduled as availability permits.

**Post-call Duties**

**Post-call Sign-out Rounds**
Sign-out Rounds shall be carried out during weekdays at 06:00 am, in room A511. The intern, all junior residents, the post-call senior resident, and the Trauma senior resident are required to attend. Attending presence is discretionary. When present, the responsible attending at morning sign-out rounds shall engage and include the entire team in the hand-off conversation. To foster learning in the domains of Communication and Professionalism, the senior resident(s) shall remain a critical part of the decision-making before reaching the attending level and be responsible for presenting consultations and cases at Sign-out Rounds. Before Sign-out Rounds, the junior resident shall gather information and prepare for presentation.
Transfer of Care

In transferring care of a patient to another orthopaedic surgeon, communication should be directed from the current attending physician to the attending physician assuming care of the patient. Residents shall not be used to shop other attendings to solicit care transfers.

Patient List

The Orthopaedic Service patient list shall be updated before 06:00 am on the morning following call.

Pagers

Residents are encouraged to wear their pagers, turned on, while awake and on duty.

Attending Physician Expectations

Priorities

Because one resident cannot be in more than one place at any given time, and because there are more attendings than there are residents, the utilization of residents shall be prioritized.

Attendance priorities for the junior residents are in the following order, from most important to least important:

- Conference attendance
- Emergency Department coverage
- Inpatient ward coverage
- Clinic coverage

Attendance priorities for the senior residents are in the following order, from most important to least important:

- Conference attendance
- Surgical experience
- Coordination of inpatient and emergency care
- No less than one-half day of clinic experience

Attending Vacations

Attendings shall communicate with each other, such as during faculty and departmental meetings, to coordinate utilization of residents during attending vacation time. Sharing of the free resident shall be pre-arranged, prior to the 15th day of the month before.

Coverage

Attendings are not expected to demand coverage for operative and clinic assistance when their resident is on vacation, unless pre-arrangements have been made prior to the 15th day of the month before. Attendings should not expect coverage when they choose to operate during
academic time. Research and Basic Science time is protected; however, residents on these rotations may be used in limited cases for special circumstances, with approval from the Program Director and/or Department Chair. For further details, see the Leave Policies and Procedures.

Operating Room

Patient preparation
Each resident is expected to see the patient no later than 20 minutes before surgery. If required, the resident shall complete the 24-hour Update Form and verify the Informed Consent. The resident shall also mark the surgical site after appropriate assessment.

Educational preparation
The resident should under no circumstances expect to simply walk in and operate. Furthermore, in scheduled cases, the resident is expected to have read up on the case. Adequate preparation includes, but is not limited to, familiarity with the patient’s history and exam findings, diagnostic studies, indications for surgery, surgical approach, common complications, and post-operative care.

The scheduled cases can be anticipated by contacting the surgery scheduler.

Clinic
Residents are expected to arrive to clinic on time.

Clinic responsibilities vary from service to service, and shall be dictated by the supervising attending physician.
RESIDENT SUPERVISION PROCESS

The Orthopaedic Surgery Residency Program adheres to the basic policy established by the Graduate Medical Education Committee of Loma Linda University Medical Center and the Bylaws of the Medical Staffs of LLUMC and ARMC.

Inpatient duties
Residents shall be supervised by members of the Medical Staff with appropriate privileges and with the authorization of the Program Director. This supervision shall be exercised by daily rounds, telephone consultations, and other means when needed.

Documentation of this supervision shall be demonstrated by counter-signing the resident’s notes.

Patient evaluation
The supervising physician shall personally interview and examine the patient on a regular basis to confirm the resident’s findings and to provide the opportunity to evaluate and educate the resident in clinical care.

Procedures
The supervising physician shall be physically present for any procedures for which the resident is not capable of performing without direct supervision. If another resident has been designated as being capable of performing this procedure without direct supervision, that resident can be designated to substitute for the presence of the supervising physician.

Admissions, transfers, and discharges
The designated member of the Medical Staff must approve any admission of a patient to the service. This will allow discussion of the resident’s preliminary medical decision making.

The designated member of the Medical Staff shall be informed immediately of any unexpected transfer of a patient to another service or to another level of care (ICU, intermediate, basic).

The designated member of the Medical Staff shall be informed immediately of any unexpected discharge or death of a patient.

The designated member of the Medical Staff must approve of any recommendation to discharge a patient from the Emergency Department.
Consultation and testing
The resident shall order consultations and testing on behalf of the attending physician following discussion with the attending physician. This may be documented by the resident or by the attending in the physicians’ orders or in the doctors’ notes.

Any consultation requested by another service may be initially seen by the intern. All consults should also be discussed with the junior orthopaedic resident on duty. The resident shall immediately discuss the consultation with the designated member of the Medical Staff for any critically ill patient. The consulting physician shall personally evaluate the patient within one day of the request for consultation, or sooner if warranted.

Outpatient Clinics

The attending physician shall be present and supervise all evaluation and management services, including key components of the history, physical examination, and medical decision making.

Exceptions to attending physician presence and supervision include
- Pre-op evaluations
- Post-op care within the 90-day global period for major surgeries

Surgery

The supervising physician shall be physically present and in the operating room for the critical portion of the case. The critical portion of the case shall be determined by the supervising physician. Other than during the critical portion, the attending physician must be immediately available within five minutes and remain within the same building.

Compliance and Oversight

The purpose of the Resident Supervision Process is to allow for maximum educational effectiveness in patient care related instruction. It is the responsibility of the attending physician to provide an adequate level of supervision.

When there is non-compliance with the Resident Supervision Process and the policies outlined herein, the resident shall report such behavior to the Department Chair, Program Director, and Quality Resource Management.

Non-compliant behavior includes, but is not limited to:
- Failure to chief inpatient consults within 24 hours.
- Allowing residents to perform surgery without being immediately available.
- Allowing residents to perform evaluation and management services without verifying the history, physical examination, and medical decision making.
CASE LOG SYSTEM

Purpose
Systems are reviewed by the Program Director when completing the final Record of Resident Assignment forms for the American Board of Orthopaedic Surgery.
This is to confirm that a resident is prepared for the independent practice of operative orthopaedics

What Should Be Reported
All operative procedures
Manipulative reductions

What Should Not Be Reported
Closed treatments without manipulation
Simple splint or cast applications
Joint aspirations
Steinmann pin placements

Time Frame
Residents shall be no more than two weeks behind when logging in cases. Ideally, residents should enter all their data for one rotation before beginning the next rotation.

Minimum Cases
The ACGME has established minimum case numbers for each category. Details are posted at http://www.acgme.org/acWebsite/RRC_260/260_ORS_Case_Log_Minimum_Numbers.pdf
- Knee arthroscopy 30
- Shoulder arthroscopy 20
- ACL reconstruction 10
- Total hip arthroplasty 30
- Total knee arthroplasty 30
- Hip fractures 30
- Carpal tunnel release 10
- Spine decompression/posterior spine fusion 15
- Ankle fracture fixation 15
- Closed reduction forearm/wrist 20
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<td>Supracondylar humerus percutaneous treatment</td>
<td>5</td>
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<tr>
<td>Femur and tibia intramedullary fixation</td>
<td>25</td>
</tr>
<tr>
<td>All pediatric procedures</td>
<td>200</td>
</tr>
<tr>
<td>All oncology procedures</td>
<td>10</td>
</tr>
</tbody>
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RESEARCH ACTIVITY GUIDELINES

Purpose
The research program is designed to enable the resident to develop abilities to critically evaluate medical literature, research, and other scholarly activity. Activities include instruction on experimental design, hypothesis testing, research methods, and information dissemination.

Program Structure

Research time
While residents may participate in research at any time during residency, dedicated research time is provided during PGY-3 and/or PGY-4 training.

In addition to research, the resident on the research rotation may be scheduled to have call duties. Use of the research resident to simply cover cases and clinics is discouraged. Protection of research time is a priority.

When clinical duty coverage by the research resident is anticipated, arrangements shall be made by the 15th of the month prior. Coverage shall be arranged through joint discussion of (1) the resident going on leave, (2) the research resident, and (3) the Program Director. Whether the research resident is used for the requested coverage shall be determined at the discretion of the Program Director. Factors involved in such determination shall be based on (1) the progress of the research resident’s project and (2) the educational value of anticipated coverage duties.

Educational materials
Materials used for instruction shall include, but are not limited to:
- Selected reading materials describing research methods and authorship standards
- Information supplied by the Office of Sponsored Research, available at research.llu.edu
- Information systems, such as Pubmed

Record of research activity
The Orthopaedic Research Coordinator shall keep a record of departmental research activity. Research in publishable form, submitted for publication, or already published, shall be filed in printed form in the respective resident’s chart.
Research Steps and Process Flow

Project selection
This can be from a list, generated by the department and attached with a Primary Investigator, or it may come from the resident’s own idea.

Types of projects
Research may be clinical/human, animal, biomechanical, or miscellaneous.

Specific steps involved
Some steps may or may not apply, depending on the project.
- Detailed literature search
- Discussion with Primary Investigator
- Proposal
  - Introduction of the problem
  - Hypothesis
  - Methods
  - Statistical tests to be used
  - Power calculation
  - Expected findings and results
  - Anticipated grant application
  - Anticipated presentation/publication venue
  - Budget calculations
  - References
- Proposal approval by the Orthopaedic Research Committee
- IRB/IACUC approval if applicable
- Grant proposal submission
- Begin project
- Gather data
- Analyze data
- Write the abstract
- Submit the abstract to the Orthopaedic Research Committee
- Write the manuscript
- Submit manuscript to a journal
- Revise manuscript
- Publication

Research Requirements
Before engaging in the research activity, the resident shall propose the research to the Orthopaedic Research Committee. Such proposal shall include, at the minimum, an introduction, anticipated materials and methods (including statistical analysis), potential funding sources, and references. The resident is expected to defend the rationale behind the
research and to provide an explanation regarding clinical significance. Proposal presentation shall be formal, which would include the use of PowerPoint or other presentation platform. Approval shall be granted by the Orthopaedic Research Committee once clinical relevance and scientific soundness has been determined, and the Committee shall determine whether the research is considered as a two-point major project or a one-point minor project. Residents shall not be granted credit for research performed outside of Orthopaedic Research Committee oversight and approval. Prior to advance beyond PGY-2, the resident shall have at least one project reviewed and approved by the Orthopaedic Research Committee.

Once the research project is completed, the resident shall submit an abstract to the Orthopaedic Research Committee for approval. In order to be eligible to present at the Orthopaedic Research Seminar, the resident shall submit the abstract prior to the due date set by the Committee, which shall be before March 1 of the same year. Furthermore, one month prior to the Orthopaedic Research Seminar, the resident shall turn in a full length manuscript in a form ready for submission to a specific peer-reviewed journal of the resident’s or faculty’s choice, including formatting in adherence to the journal’s Instructions for Authors. Specific deadlines shall be set by the Orthopaedic Research Committee.

The resident shall present one of the projects on or before the Seminar of the PGY-4 year, and shall present the second project on or before the Seminar of the PGY-5 year. See Specific Criteria for Advancement under Outcomes Evaluations and Promotions for more details.

The research project shall be deemed to be completed after (1) approval of research proposal by the Orthopaedic Research Committee, (2) completion of data gathering and analysis, (3) approval of abstract by the Orthopaedic Research Committee, (4) submission of full manuscript to a peer-reviewed journal, (5) approval of full manuscript by the faculty advisor and the Orthopaedic Research Committee, and (6) presentation at the Orthopaedic Research Seminar.

A point system shall be utilized for credit-based evaluation. Two points shall be awarded to research involving hypothesis testing performed to completion as outlined in the paragraph above. Non-hypothesis testing projects such as case reports, review papers, anatomic descriptions, completed according to the above guidelines shall be awarded one point. An additional point is awarded upon successful acceptance of a manuscript (either a hypothesis or non-hypothesis testing projects). Assistance in another resident’s project may be awarded one-half point, subject to Orthopaedic Research Committee approval. Patient safety quality improvement (QI) projects will be awarded one point, subject to approval. The above designation is determined and granted by the Orthopaedic Research Committee. In addition, one month of international or mission elective, with oral presentation and manuscript submission to a non-profit or charitable organization (e.g., AIMS, Scope, LLU Today) for publication shall be awarded one point, which may be used to offset one of the hypothesis-testing research required. A total of four points is required for completion of residency research requirements, and at least one of which must be from a two-point project.
Summary of General Deadlines

Research proposal
At least one project must be presented, discussed, and approved by the Orthopaedic Research Committee prior to the end of PGY-2 training. This is a requirement for advancement into the PGY-3 level.

First research project
Submit first research proposal for Orthopaedic Research Committee review and approval by early PGY-4 training, but preferably before.
Perform approved research during or before December, PGY-4.
Submit research abstract (including introduction, materials/methods, results, discussion, conclusion, and references) to the Orthopaedic Research Committee by the deadline set by said Committee, which shall be no later than March 1, PGY-4.
After approval of the research abstract, submit a full manuscript (in a form ready for submission to a specific peer-reviewed journal as specified above) to the Orthopaedic Research Committee by the deadline set by said Committee, which shall be no later than May 1, PGY-4.
Present the approved research at the Orthopaedic Research Seminar, PGY-4. The date shall be set by the Orthopaedic Research Committee.
In lieu of the above, the resident may substitute the requirement with two points from minor projects or assistance credit per the section above.

Second research project
Submit first research proposal for Orthopaedic Research Committee review and approval by early PGY-5 training, but preferably before.
Perform approved research during or before December, PGY-5.
Submit and receive manuscript confirmation from a journal’s online manuscript system by December, PGY-5, for both the first and second research projects.
Submit research abstract (including introduction, materials/methods, results, discussion, conclusion, and references) to the Orthopaedic Research Committee by the deadline set by said Committee, which shall be no later than March 1, PGY-5.
After approval of the research abstract, submit a full manuscript (in a form ready for submission to a specific peer-reviewed journal as specified above) to the Orthopaedic Research Committee by the deadline set by said Committee, which shall be no later than May 1, PGY-5.
Present the approved research at the Orthopaedic Research Seminar, PGY-5. The date shall be set by the Orthopaedic Research Committee.
In lieu of the above, the resident may substitute the requirement with one-point and half-point projects per the section above, but at least one hypothesis-testing research project must be completed prior to said deadline in this section.

**Deadline for proof of manuscript submission**

Submission to a peer-reviewed journal is one of the requirements of research project completion. For each project, the submission confirmation email and PDF generated by the journal’s online manuscript system shall be used as proof of submission. Submission is defined as (1) successful submission and provisional acceptance to a journal listed in PubMed, including PMID designation for articles, or (2) resubmission to such a journal after rejection. Therefore, any manuscript that is rejected needs to be resubmitted to one additional journal. Before ABOS application can be signed (this is usually due in December, PGY-5), both research projects must have proof of manuscript submission. This requirement may be waived at the request of the Primary Investigator and approval of the Orthopaedic Research Committee.

**Meetings**

Residents are encouraged to submit their work to regional and national meetings with approval from the principle investigator. Residents do not need to pre-submit travel budgets when applying to present research at meetings on the pre-approved list (see below). The maximum travel / registration budget for reimbursement for all expenses is $1200. Expenses beyond that will need to be presented to the Orthopedic Research Committee for approval (extra expenses must be requested PRIOR to submitting to the meeting). Research must be accepted for a podium presentation (not poster or simple abstract listing).

For meetings not on the pre-approved list, residents need get approval PRIOR to applying and will need a faculty member to support the legitimacy of the meeting itself.

The following list serves as a guideline of meetings that residents may submit to:
- AAOS - American Academy of Orthopaedic Surgeons
- AOA - American Orthopaedic Association
- AOFAS - American Orthopaedic Foot and Ankle Society
- ASSH - American Society for Surgery of the Hand
- AAHS - American Association for Hand Surgery
- OTA - Orthopaedic Trauma Association
- SRS - Scoliosis Research Society
- LLRS - Limb Lengthening and Reconstruction Society
- MSIS - Musculoskeletal Infection Society
- MSTS – Musculoskeletal Tumor Society
- CTOS – Connective Tissue Oncology Society
- ISOLS – International Society of Limb Salvage
- ASES - American Shoulder and Elbow Society
- AANA - Arthroscopy Association of North America
- AOSSM - American Orthopaedic Society for Sports Medicine
- NASS - North American Spine Society
- AANS - American Association of Neurological Surgeons
- LSRS - Lumbar Spine Research Society
- WOA - Western Orthopaedic Association
OUTCOMES EVALUATION AND PROMOTION

Introduction
The Orthopaedic Surgery Residency Program adheres to the basic policy established by the GMEC of LLUMC. Outcomes measurements as recommended by the ACGME shall be incorporated into the evaluation process.

Evaluation

Rotation evaluation
Each resident shall be evaluated by each supervising attending at the end of the rotation. The evaluation shall be a face-to-face encounter. An opportunity for resident feedback shall be provided.

Annual evaluation
Utilizing the Clinical Competency Committee’s recommendations, the Program Director shall summarize for the faculty the resident’s progress in educational attainment, clinical skills, professionalism and other areas. Based on the criteria set forth, the faculty as a whole shall determine whether promotion shall occur. The faculty may instruct the Program Director to notify the resident of specific concerns or conditions for advancement. The faculty may recommend to the GMEC one or more of the following:
- Promote the resident
- Place the resident on probation
- Require a portion of the year or the entire year to be repeated
- Not renew the resident’s contract
- Terminate the resident

General Criteria
To be promoted to the next PGY level, or to graduate from residency, the resident must pass every rotation. The resident must also demonstrate competency in all six core domains. It is recognized that many of these domains have overlapping areas.

Patient care outcomes evaluation
The resident must demonstrate patient care that is compassionate, appropriate, and effective for the treatment of health programs and the promotion of health.
- Caring, respectful, and compassionate behavior shall be assessed through patient surveys.
- Informed decision making and patient management skills shall be evaluated through direct observation in the clinical setting.
- The ability to work within a team shall be assessed using the 360° Global Rating tool.

The resident must have mastered the appropriate surgical skills for level of training.
- Surgical skills are evaluated on an ongoing basis and documented at the end-of-rotation evaluation.
- Case logs must be maintained for PGY-2 residents and above.

**Medical knowledge outcomes evaluation**

The resident must possess medical knowledge about established and evolving biomedical, clinical, and cognate sciences, as well as the application of this knowledge to patient care, appropriate for the level of training.
- Investigatory and analytical thinking shall be assessed by formal or informal oral examinations given by the supervising faculty or Program Director.
- Knowledge and application of basic sciences shall be determined through the Orthopaedic In-Training Examination.

The resident must have adequately attended educational conferences (no less than four hours per week).

Residents scoring below the 40th percentile on the Orthopaedic In-training Examination shall be required to participate in a remediation program set forth by the Program Director. Failure to comply with remediation program or unsatisfactory remediation performance may result in reappointment without advancement to the next training level.

**Practice-based learning and improvement outcomes evaluation**

The resident must utilize practice-based learning and improvement that involves the investigation and evaluation of care for their patients, the appraisal and assimilation of scientific evidence, and improvements in patient care.
- Progressive learning as related to patient care management and improvement should be evident, as assessed by formal or informal oral examinations by the supervising faculty.

**Interpersonal and communication skills outcomes evaluation**

The resident must effectively exchange information and collaborate with patients, their families, and other health professionals.

The resident must receive positive evaluations concerning their professionalism, communication skills and teamwork from nurses, staff, residency coordinator, students, and fellow residents.
- Effectiveness of communication with patients shall be measured through patient surveys.
- Interpersonal and communication skills within the healthcare team shall be evaluated through the 360° Global Rating tool.
Professionalism outcomes evaluation

The resident must demonstrate professionalism, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to patients of diverse backgrounds.

- Professionalism in the patient care setting, including respectful attitude and sensitivity to the patients’ situations, shall be assessed using patient surveys.
- Professionalism in the workplace shall be evaluated using the 360° Global Rating tool.
- For PGY-2 and higher levels, additional assessments of professionalism include audits of the resident’s ability to maintain time logs, case logs, and sign-in sheets for conferences. Up-to-date maintenance is expected, and delinquencies are noted during spot audits when records are more than two weeks behind.

Systems-based practice outcomes evaluation

The 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.

- Patient advocacy shall be evaluated using the patient survey.
- Facilitation of patient care in the larger context of healthcare and the practice of cost-effective care shall be assessed by direct observation and documentation by the supervising faculty.

The resident is expected to appropriately code patient encounters and surgeries, in compliance with the current health care regulations.

Specific Criteria for Advancement

Advancement to the next training level is determined by successful completion of specific criteria as detailed in this Handbook and by the House Staff Office. Final determination shall be made by the Residency Program Evaluation Committee. The following criteria shall serve as guidelines.

PGY-1
- Pass every clinical rotation
- Pass USMLE Step III
- Complete all Core Curriculum assignments given by the House Staff Office

PGY-2
- Pass every clinical rotation as outlined by Rotation-Specific Goals and Objectives
- Possess a valid California Medical License
- Possess a California Fluoroscopy Supervisor/Operator Permit
- Maintain Professional behavior, as exhibited by audits relating to conference attendance, case and time logs, and sign-in sheets upkeep
- Obtain approval from the Orthopaedic Research Committee for at least one project
- Obtain satisfactory marks in all Competencies as adjudicated by the Clinical Competency Committee
- Complete all Core Curriculum assignments given by the House Staff Office

PGY-3
- Pass every clinical rotation as outlined by Rotation-Specific Goals and Objectives
- Possess a valid California Medical License
- Possess a California Fluoroscopy Supervisor/Operator Permit
- Maintain Professional behavior, as exhibited by audits relating to conference attendance, case and time logs, and sign-in sheets upkeep
- Obtain satisfactory marks in all Competencies as adjudicated by the Clinical Competency Committee
- Complete all Core Curriculum assignments given by the House Staff Office

PGY-4
- Pass every clinical rotation as outlined by Rotation-Specific Goals and Objectives
- Possess a valid California Medical License
- Possess a California Fluoroscopy Supervisor/Operator Permit
- Maintain Professional behavior, as exhibited by audits relating to conference attendance, case and time logs, and sign-in sheets upkeep
- Fulfill research requirements for fourth-year level
- Obtain satisfactory marks in all Competencies as adjudicated by the Clinical Competency Committee

PGY-5
- Pass every clinical rotation as outlined by Rotation-Specific Goals and Objectives
- Possess a valid California Medical License
- Possess a California Fluoroscopy Supervisor/Operator Permit
- Maintain Professional behavior, as exhibited by audits relating to conference attendance, case and time logs
- Fulfill research requirements for fifth-year level
- Demonstrate sufficient professional ability to practice competently and independently.

Disciplinary Action
Failure to meet Core Curriculum, Licensing, or other requirements may result in disciplinary action. The resident may be suspended until requirements are met, or other arrangements may be made at the discretion of the Program Director and the House Staff Office.
PROGRAM ADMINISTRATION
PROGRAM ADMINISTRATION

Calendar of Tasks

July
- Publish important dates
- Publish Improvement Implementation Plan

August
- Convene the Resident Representation Committee
- Conduct Patient Surveys, 360° Evaluations, and Case Management Evaluations

September
- Assemble Resident Selection Committee

November
- Orient members of the Resident Selection Committee
- Draft agenda for the Residency Program Evaluation Committee, to include duty hours report and fatigue education
- Draft agenda for the Resident Forum
- Perform practice audits for residents
- Convene the Resident Representation Committee
- Conduct Patient Surveys, 360° Evaluations, and Case Management Evaluations
- Convene Clinical Competency Committee
- Remind senior residents regarding ABOS and graduation requirements

December
- Consider nomination of one or more residents to Alpha Omega Alpha Honor Medical Society
- Conduct the Residency Program Evaluation Committee
- Meet with individual residents for semi-annual review

January
- Interview residency applicants and submit rank order list
- Arrange boards review course for PGY-5 residents
- Remind faculty members about attending School of Medicine commencement

February
- Confirm Grand Rounds scheduling
- Arrange AO Course for upcoming PGY-3 residents
- Convene the Resident Representation Committee
- Conduct Patient Surveys, 360° Evaluations, and Case Management Evaluations
- Review abstracts submitted to the Orthopaedic Research Committee for presentation at the Orthopaedic Research Seminar
March
- Send out goals and objectives to all services for updates and revisions
- Schedule Orthopaedic Research Seminar activity details

April
- Draft conference schedules for the next academic year
- Plan residency graduation events

May
- Update Residency Program Policies and Procedures
- Draft agenda for the Residency Program Evaluation Committee, to include duty hours report and fatigue education
- Draft agenda for the Resident Forum, to include guest professor nomination
- Invite guest professor for next year’s Orthopaedic Research Seminar
- Solicit evaluations from faculty members, residents, and past graduates regarding the training program
- Perform practice audits for residents
- Convene the Resident Representation Committee
- Conduct Patient Surveys, 360° Evaluations, and Case Management Evaluations
- Convene Clinical Competency Committee
- Attend School of Medicine commencement events

June
- Perform exit interviews with senior residents
- Conduct the Residency Program Evaluation Committee
- Meet with individual residents for semi-annual review
- Attend residency graduation
- Meet with the Chair to discuss faculty development and advancement
RESIDENT ADMINISTRATIVE DUTIES

Chief Residents

LLUMC
Coordinate resident vacations at LLUMC.
Formulate senior resident call schedule for LLUMC, which is due before the 15th of the month prior.
Participate in Morbidity/Mortality Conference and QI Committee.
Participate in the Residency Program Evaluation Committee.

ARMC
Coordinate resident vacations at ARMC.
Formulate senior resident call schedule for ARMC.

VAH
Coordinate resident vacations at VAH.
Formulate senior resident call schedule for VAH.

Basic Science Resident
Coordinate conference activities, which include: facilitating needs of the speakers, managing coverage for dinners, assuring audiovisual setup for Basic Science and Indications Conference, and maintaining responsibility for said equipment.
Take attendance for Basic Science, Indications Conference, and Grand Rounds.
With the assistance of the sponsoring faculty, select peer-reviewed articles for Journal Club.

Junior Resident on the Trauma Rotation
Formulate junior resident call schedule at LLUMC, which shall be turned in before the 15th of the month prior.
Take attendance for the PGY-2 Core Conference.
Residents on Hand, Spine, Sports, Pediatrics, ARMC, and Junior VAH Rotations

Take attendance for the respective specialty conferences: Hand, Spine, Sports, Pediatrics and Pediatric Indications, ARMC Clinical Conference, and VAH Indications and Joints.

Resident Representation

One resident from each year (PGY-1 through PGY-5) shall be elected from within each PGY-year to serve on the Resident Representation Committee.
RESIDENCY PROGRAM COMMITTEES

Residency Program Evaluation Committee

Purpose
The purpose of this committee is to formally evaluate the teaching effectiveness of the residency program.

Composition
All physician and non-physician faculty from LLUMC, ARMC, and VAH
Chief resident at LLUMC (ex officio)

Process
The Residency Program Evaluation Committee shall meet on a semi-annual basis.

The first meeting shall take place before beginning the third quarter of the academic year. The specific areas of review include, but are not limited to:

- Resident progress
- Conference attendance oversight
- Duty hour oversight
- Fatigue and stress oversight
- Boards pass rate from the July administration

The second meeting shall take place near the close of the academic year. The specific purpose is to conduct a formal comprehensive evaluation of the teaching program. Areas included in this review are:

- Resident evaluations and individual progress
- Conference attendance oversight
- Faculty evaluations
- Service evaluations
- Program evaluations from residents
- Program evaluations from faculty members
- Program evaluations from post-graduates
- Duty hour oversight
- Fatigue and stress oversight

When deficiencies are found, the committee shall prepare an explicit plan of action.
Resident Representation Committee

Purpose
The purpose of this committee is to provide a forum for residents to voice concerns regarding their own educational experience.

Composition
Members of each PGY-year (1 through 5) shall elect one representative to serve on this committee.
This committee shall be composed of five residents and the Program Director. One additional faculty representative may be present.

Process
The Resident Representation Committee shall meet on a quarterly basis or as needed.
The meeting shall be called by the Program Director, and shall serve as a forum for residents to provide feedback regarding the program setup, educational value, and other concerns.

Orthopaedic Research Committee

Purpose
The purpose of this committee is to ensure that quality research is performed by the residents.

Composition
Program Director
Department Chair
Additional faculty member(s) as designated by the Program Director

Process
The Orthopaedic Research Committee shall meet no less than twice a year, usually in the spring and in the fall quarters. Additional meetings may be called as necessary. Prior to starting on a research project, the resident shall present the project idea, supporting evidence, proposed methods, and expected findings to the Committee for approval. Residents will not receive credit for research performed outside of Committee approval. Prior to the Resident Research Seminar, the resident is expected to present research findings to the Committee. Final determination of whether a research meets minimum standards for presentation shall be made by the Committee.
Clinical Competency Committee

Purpose
The purpose of this committee is to oversee global evaluation of each resident based on clinical milestones and other metrics deemed appropriate.

Composition
Program Director
Assistant Program Director
Additional faculty member(s) as designated by the Program Director

Process
The Clinical Competency Committee shall meet twice a year, usually in May and in November.
Duty Hours and Leave
RESIDENT DUTY HOURS

Specific regulations
See the Appendix under ACGME Program Requirements for Graduate Medical Education in Orthopaedic Surgery.

Moonlighting
Moonlighting is prohibited, with one exception.
Residents may participate in the C&P Program at the VA Hospital. To participate, the resident must meet the following criteria:
- Latest OITE score above 50th percentile.
- Not more than 50% delinquent on case log and time log audits, year-to-date (delinquent defined as being more than two weeks behind).
- In good standing, without being on probationary or disciplinary status (formal or informal).
- An upper level resident, being in the 4th or 5th postgraduate level.
- Up-to-date case logs and time records (no more than two weeks behind), with minimums of 750 cases for PGY-4 residents and 1000 cases for PGY-5 residents.

Specific process
- PGY-2 residents will be assigned primarily for Emergency Department coverage beginning at 13:00 each afternoon. (Starting with April, the PGY-2 day call schedule will be pre-determined, such that a certain service’s resident will take a particular weekday.) Clinic and operating room coverage will be secondary—only when there are no pending consults.
- Consults shall be supervised by a PGY-2 resident within 60 minutes of the consult order being placed and called in. The nurse should be asked to document the arrival time of the PGY-2 resident.
- Evening sign-out shall be face-to-face, at 18:30 in A511, with the senior on call resident chieving the sign-out. The senior on call, intern, day call PGY-2, and night float residents are expected to be present. Exception is made for Tuesdays, where sign-out shall take place before Basic Science Conference. During sign-out, the on call senior shall delegate unfinished work and shall leave no earlier than the day call team’s departure.
- Day duty residents (not on night float) shall be relieved of their duties ideally by 20:00 and must not be later than 22:00.
- In line with existing policy, there shall be no pre-rounding before 06:00 by day duty residents.
- Residents should only cover attendings on their assigned service. If cross-service coverage is requested, the administrative senior resident may make the reassignments beforehand, prior to the beginning of the month. For instance, Hand/Foot service junior resident should only cover Hand/Foot attendings during the weekday, unless on call.
- Existing policy shall be upheld, where protected time is granted to the Research, Basic Science, and Peds/Research residents, unless approved by Dr. Botimer.
Oversight

Compliance with duty hour guidelines shall be monitored on a monthly basis to ensure an appropriate balance between education and service.

Residents and faculty shall be educated to recognize the signs of fatigue and to apply policies to prevent and counteract the potential negative effects.
**Leave Policies and Procedures**

**Vacation**

**Days available**
Residents are entitled to one week (5 days) of leave rotation block, not including weekends. Carry-over of time into the next rotation will not be approved except for unusual circumstances. The same policy applies to the intern rotating on the Orthopaedic Service. Leave is not to be taken during the first or last month of your residency, except by special arrangement.

The PGY-2 through 5 residents may each take up to one week (5 days) during each quarterly block, except as make-up days for holiday coverage as outlined by the House Staff Office. The total annual allowance is 20 days.

In each quarter, PGY-2 residents shall take vacation days consecutively, beginning on a Monday and including the four days following. If a holiday falls within this period, the resident may extend the vacation by the same number of days.

No vacation is granted to residents during the Night Float Trauma rotation.

**Holidays**

**Educational Leave**

**Regular meetings**
The only regular meeting times allowed without using leave days are as follows:
- PGY-5 AAOS
- PGY-5 Boards review course of choice
- PGY-2/3 AO Fracture course or equivalent

**Research presentations**
If presenting at a national or regional meeting, subject to distance, the resident is allowed three days (one for presentation and two for travel). More days may be granted at the discretion of the Program Director.
Approved meetings

These include the American Orthopaedic Association Resident Leadership Forum for a selected PGY-4 resident each year.

Also included are pre-approved meetings to foster interest in generalization or subspecialization. See the Meeting Allowance section.

Leave Procedures

Form completion

Fill out the leave request according to the printed directions. Account for each day of leave, including weekends, presentations, meetings, and personal days.

It is the residents responsibility, with the assistance of the Chief Resident (PGY-5 Senior I), to find coverage during their absence for all clinic, O.R, and inpatient rounds responsibilities. Attending surgeons are reminded that resident coverage may not be possible, and according to current policy, pulling the Research or Basic Science or other resident to cover is prohibited. Coverage gaps are assigned by the Chief Resident.

Leave Request must be signed by:
- Resident requesting leave (house staff physician).
- Chief Resident on service (residents who are rotating at ARMC or VA must have seniors who are rotating there sign leave requests.)
- Program Director.

Vacation requests shall be due by the 10th of the month before the beginning of each quarter. When the request is not received by the 10th, the resident shall be assigned the vacation time by the attending(s)/Program Director. Requests are processed on a first come, first served basis.

Vacation calendar

A vacation calendar is maintained by the Residency Coordinator. Please consult this when considering your vacation request.

Miscellaneous Rules

Days where no vacation is allowable

Vacations will not be granted for the following days
- First and last month of your residency (July of PGY-1 and June of PGY-5)
- Week of the American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting
- Sunday and Monday of the Alumni Post-graduate Convention
- Orthopaedic Research Seminar
- Miller Review Course
- Orthopaedic Residency Graduation Banquet
- ACGME site visit
- Orthopaedic In-Training Examination day

**Service Coverage**

No more than one resident from any given service (Sports, Hand, Pediatrics, ARMC, VA, etc.) may be away on any given workday (except in cases of regular meetings; i.e., PGY-3 residents to AO conference, PGY-5 residents to AAOS). This includes junior and senior residents on the same service.

No more than one resident from the LLUMC junior call/service may be away on any given non-holiday weekday. The orthopaedic intern and the PGY-2 residents may not take vacation at the same time.

**Sick leave procedure**

Residents are allowed ten sick leave days per year. On the morning of calling in sick, the resident shall notify the service-specific senior resident, who shall then notify the Program Director and Residency Coordinator.

**Maximum allowable leave**

Due to American Board of Orthopaedic Surgery regulations, no more than six weeks shall be granted for vacation, educational leave, and sick leave.

The resident shall make up time for any leave exceeding a total of six weeks, regardless of reason. This shall be arranged by the Program Director.
MEETING ALLOWANCE

Conference Attendance Period
Residents will be able to attend another conference during PGY-3 to PGY-4 time. This is in addition to the other pre-approved conferences, which include; for all residents: (1) basic fracture course, (2) boards review course, (3) American Academy of Orthopaedic Surgeons annual meeting; and for select residents, (4) research presentations according to set policy, and (5) American Orthopaedic Association Resident Leadership Forum.

Approved Meetings
The list below represents the pre-approved meetings you may choose from, with the idea of fostering interest in generalization or subspecialization. Choose one meeting, and attendance is to occur during the PGY-3 or PGY-4 level. Prior to course registration and attendance, submit a leave request and a budget to include fees, travel, lodging, and per diem expenses. The department will reimburse up to $1,200. Requests for meetings not listed here will be considered on a case-by-case basis.

- American Academy of Orthopaedic Surgeons
- American Association for Hand Surgery
- American Association of Hip and Knee Surgeons
- American Orthopaedic Foot and Ankle Society
- American Orthopaedic Society for Sports Medicine
- American Shoulder and Elbow Surgeons
- American Society for Surgery of the Hand
- American Spinal Injury Association
- AO North America Trauma Advanced Course
- Arthroscopy Association of North America
- Cervical Spine Research Society
- Current Concepts in Joint Replacement
- Hip Society
- International Congress for Joint Reconstruction
- Knee Society
- Limb Lengthening and Reconstruction Society
- Lumbar Spine Research Society
- Musculoskeletal Tumor Society
- North American Spine Society
- Orthopaedic Rehabilitation Association
- Orthopaedic Research Society
- Orthopaedic Trauma Association
- Pediatric Orthopaedic Society of North America
- Scoliosis Research Society
- Society of Military Orthopaedic Surgeons
FATIGUE AND STRESS POLICY

Introduction
Fatigue and stress are expected to occur periodically in the setting of residency training. Not unexpectedly, residents may, on occasion, experience some effects of inadequate sleep and/or stress. The concern is caused by residents who are so fatigued that they may make serious errors in medical care.

Signs and symptoms of fatigue
Inconsistent performance
Overt sleepiness
Verbal complaints
  - Not having the energy to perform routine tasks
  - Feelings of irritability
  - Difficulty concentrating
Concerns from colleagues’ observations

Education
Faculty and residents shall be educated to recognize the signs of fatigue, and adopt and apply policies to prevent and counteract its potential negative effects.
Such education shall take place in the following settings:
  - Grand Rounds and other conference presentation(s)
  - Committee discussions
  - Review of printed materials

Response

Resident responsibilities
Residents who perceive that they are manifesting excess fatigue or stress shall immediately notify the supervising attending, the chief resident of their service, and the program director, without fear of reprisal.
Residents recognizing signs of fatigue or stress in fellow residents shall immediately report their observations and concerns to the supervising attending, the chief resident of their service, and the Program Director.
Residents shall report all traffic accidents and near-accidents related to fatigue to the Program Director’s office.
Attending physician responsibilities

Recognition that a resident is demonstrating evidence of excess fatigue or stress requires the attending to consider immediate release of the resident from any further patient care responsibilities at the time of recognition.

The supervising attending shall privately discuss with the resident, attempt to identify the reason for excess fatigue or stress, and estimate the amount of rest that will be required to alleviate the situation.

Once the decision to release the resident from further patient care responsibilities has been made, the supervising attending shall notify the Program Director’s office.

If applicable, the supervising attending may advise the resident to rest for a period that is adequate to relieve the fatigue before operating a motorized vehicle. This may mean that the resident should first go to the call room for a sleep interval of no less than thirty minutes. The resident may also be advised to consider calling someone to provide transportation home.

The backup call resident may be utilized in cases where the primary call resident is relieved of duties due to fatigue.

Oversight

Registry

The Program Director’s office shall compile statistics regarding (1) release of residents from clinical responsibilities due to fatigue or stress and (2) traffic accidents or near-accidents related to resident fatigue.

Program Director responsibilities

Following removal of a resident from duty, the Program Director, in association with the chief resident, shall determine the need for program adjustments and duty assignments. The Program Director shall also review the resident’s call schedules, work hour time cards, extent of clinical responsibilities, any known personal problems, and stressors contributing to this resident’s situation.

In situations of resident stress, the Program Director shall direct the resident for evaluation and treatment by the Employee Assistance Program, which provides confidential counseling services. If the problem is not resolved in a timely manner, or if the problem is recurrent, the Program Director, in conjunction with an evaluation from the Employee Assistance Program representative, shall have the authority to release the resident from patient care duties. In such situations, the Program Director shall allow the resident back to resume patient care only upon acceptable advisement from the Employee Assistance Program representative. When the resident is undergoing continued counseling, the Program Director shall receive periodic updates from the Employee Assistance Program representative. Extended periods of release
from duty assignments that exceed requirements for completion of training must be made up to meet ACGME and ABOS training guidelines.

Committee review

The Program Director shall present the above compiled statistics at least on a semi-annual basis, during the Residency Program Evaluation Committee.

At least on an annual basis, and prior to the year-end Residency Program Evaluation Committee, the Program Director shall assess the level of burnout among residents. One validated instrument includes the Maslach Burnout Inventory. An additional instrument is the Epworth Sleepiness Scale. Results shall be reported at Committee proceedings.
MISCELLANEOUS POLICIES
RESPONSIVENESS TO CALLS

Living Proximity

Benefits of closer living proximity
Benefits include better safety with driving shorter distances, especially after overnight duty; availability for home call; and availability in the event of disasters.

Maximum distance
All residents are expected to live within a driving distance of within 30 miles to LLUMC. Residents who live more than 30 miles must provide a plan for mitigating any concerns. Residents who take call from home must be available at the hospital within 20 minutes of being called. Residents who feel it unwise for them to drive home after duty should take a cab home. LLUMC will reimburse round-trip cab fare to and from home if presented with a receipt within one week. Cab fare reimbursement is limited to addresses within 45 miles driving distance of LLUMC.

Pagers

Responsiveness
Residents are responsible for maintaining active pagers during working hours. This means making sure the pager is working, changing/charging the battery when necessary. In addition, residents are expected to return pages within five minutes, but not to exceed ten minutes. When in the operating room or in other situations where answering is not possible, the resident must be responsible to ask the nurse or other personnel to return the page in timely fashion.

Duties while on Research and Basic Science Rotations
Even though much of the Research and Basic Science rotations involve self-motivated study and work, residents are on duty and expected to respond to pages. Proximity rules apply. Residents are not considered to be on vacation while on these rotations.

The unreachable resident
In cases where the resident cannot be reached because the resident turns off the pager and behaves as if on vacation, or in cases when the resident travels away beyond the
aforementioned exceptions, the resident will be recorded as an absence without approved leave. This shall be considered a suspension without pay or as a vacation day, to be determined at the discretion of the Program Director.
**DISCIPLINARY ACTION**

**Introduction**

This document outlines the rules and procedures pertaining to disciplinary action toward a resident. Additional stipulations from the House Staff Office may apply.

**Provisions**

**Types of disciplinary action**

*Letter of Warning* documents the cause for concern and becomes part of the resident’s permanent record.

*Probation* involves placement of the resident on probationary status, which will be specified together with the following stipulations:

- Length of probation
- Reason for placement on probation
- The criteria the resident must meet to satisfy the terms of probation
- The approximate date at which the resident’s probationary status will be reviewed

*Suspension* involves the temporary removal of the resident from the residency program for a definite period of time.

*Reappointment without advancement* involves reappointment of the resident to the residency program without advancement to the next training level.

*Decision not to reappoint* involves a decision not to reappoint the resident following the expiration of the term of the current contract.

*Termination* involves permanent dismissal from the residency program.

**Criteria for initiation**

Failure of the resident to fulfill all obligations as imposed by the terms of employment and residency training.

Any action, conduct, or health status of the resident that is adverse to the best interests of patient care or the institutions to which the resident is assigned.

**Specific criteria and examples**

Breach of professional ethics, as defined by the American Academy of Orthopaedic Surgeons, in *Code of Medical Ethics and Professionalism for Orthopaedic Surgeons*.

Violation of the rules of the residency program, the institution to which the resident is assigned, or the law, which include, but not limited to the following:
- Absence without approved leave
- Unacceptable level of attendance to scheduled educational activities
- Unacceptable completion of medical records
- Failure to adequately complete Core Curriculum assignments

Inadequate medical knowledge, deficient application of medical knowledge to either patient care or research, deficient technical skills, or any other deficiency that adversely affects the resident’s performance.

Misrepresentation of research results.

Unacceptable level of conference attendance.

**Parties who may initiate corrective action**

Any of the following parties may initiate corrective action:
- Department Chair
- Program Director
- Department or section chief to which the resident is assigned

Separate corrective action
- In addition to the corrective action described above, the resident may, in accordance with the policies and procedures of the hospital, have his or her privileges limited, restricted, suspended, or revoked. Such action by the hospital does not require the initiation of corrective action under this policy.

**Notice**

The resident shall be notified in writing, with reference to the specific activity, conduct, deficiency, or other basis constituting grounds for disciplinary action.

Specific procedures are outlined by the House Staff Office.
RESIDENT RECOGNITION AND AWARDS PROTOCOL

Annual Orthopaedic Surgery Research Seminar Awards

Evaluation
Evaluation forms are given to Loma Linda University faculty and guest faculty. The two residents, irrespective of PGY, who receive the two highest marks are awarded first and second place.

Awards
The first place recipient receives a check for $1000 and a plaque or certificate at the Orthopaedic Residency Graduation Banquet. The second place recipient receives a check for $500 and a plaque or certificate at the Orthopaedic Residency Graduation Banquet. The monetary award shall be drawn from the research seminar budget, which may include the Orthopaedic Research Center account.

Election for AOA Resident Leadership Forum
The faculty shall elect one PGY-4 resident to attend the AOA Resident Leadership Forum. This election shall be based on the individual’s overall performance and potential to participate in academic leadership.

Nomination to the Alpha Omega Alpha Honor Medical Society
There may be one or more residents that are deemed to be exceptional in all aspects, including academic performance, leadership ability, and scholarly activity. The Program Director and the faculty may choose to nominate outstanding residents to the Alpha Omega Alpha Honor Medical Society.
RESIDENT SELECTION POLICY

Introduction
The Program Director of the Orthopaedic Surgery Department, Loma Linda University Medical Center (LLUMC) sponsored Graduate Medical Education programs must assure that each resident admitted into the program is qualified on the basis of previous education and experience to assume the responsibilities that she/he will be given as a resident. This assurance must be based on an evaluation of the credentials of each applicant. Medical education recognizes the criteria of knowledge, skills (including judgment), values and attitudes as separately important in the evaluation of students. The quality of each applicant for a resident position should be evaluated in light of these separate criteria. The program director must comply with the criteria for resident eligibility as specified in the Institutional Requirements. The Orthopaedic Surgery Residency Program recognizes the value and importance of recruiting qualified men, women and minority students.

Program Directors of LLUMC sponsored GME programs are to fulfill the Mission of LLUMC to support the international medical efforts of the Seventh-day Adventist Church.

All residents and fellows must be able to support the Mission of LLUMC “to continue the healing ministry of Jesus Christ, ‘to make man whole’ in a setting of advancing medical science and to provide a stimulating clinical and research environment for the education of physicians, nurses, and other health professionals.” Further, they must agree to be subject to the standards or conduct and ethics which are not in conflict with the ethics, principles and philosophy of the Seventh-day Adventist Church.

Basic Criteria

Quality assessment
The Orthopaedic Surgery faculty and Program Director of LLUMC sponsored residency programs are most familiar with the relationship between undergraduate performance and success as a resident when the applicant is a recent graduate of Loma Linda University School of Medicine (LLUSM). Because of the accreditation process and standards shared by the Liaison Council on Medical Education (LCME) accredited medical schools, similar familiarity is recognized with the relationship between undergraduate performance and resident performance when the applicant is a graduate of a LCME accredited medical school. These two groups, first, recent graduates of LLUSM and second, recent graduates of other LCME accredited medical schools form the “reference group” against which Program Directors should try to infer the relative quality of all other applicants.
Data gathering

The most accurate information for those individuals applying to enter a residency immediately after graduating from medical school, will be the academic record of the applicant while in medical school. Students presenting credentials from schools that have not been subjected to the same accreditation process and standards as LCME accredited medical schools may be more difficult to evaluate. The Program Director must use tools available to allow a qualitative comparison with the “reference group” in evaluating such students. A Dean’s letter provided by LCME schools contains evaluations by multiple preceptors that should address such areas as skills, values, attitudes, etc.

Subjective evaluation tools such as review of an applicant’s CV, Personal Statement or evaluation of applicants by interview should be considered as supplementary tools.

Equal employment opportunity

Graduate medical education has no gender specific requirements and discrimination on the basis of gender will not be practiced.

Discrimination on the basis of race, national origin or ethnicity will not be practiced.

Selection criteria

Appointments will be based on the ability of the individual to perform the tasks required for that position. Discrimination based on disability will not be practiced. All potential residents must possess the minimal physical and cognitive requirements (with reasonable accommodations if needed) for this residency program. These include but are not limited to:

- Mental, emotional and social attributes to be a successful orthopaedic surgeon.
- Vision—ability to see out of both eyes, with adequate acuity for the fine techniques involved in surgery, including working under a microscope or viewing/working through microsurgical equipment.
- Team Effort—must possess ability to work well with colleagues, medical personnel and auxiliary personnel as well as have a good rapport with the patients and families under our care.
- Dexterity—must be adept in fine movements of both hands with the ability to perform microsurgical techniques.
- Stamina—must possess the ability to sit or stand for long periods of time with maximum concentration on the procedure at hand. This endurance could be limited due to neurological or skeletal muscular impairment.

Physical and mental requirements

Candidates must be able to perform the following activities, with or without the use of accommodation:

- Seeing (both eyes)
- Hearing
- Manual Tasks (one hand)
- Manual Tasks (two hands)
- Fine Motor Skills
- Sitting
- Standing
- Walking
- Lifting
- Reaching
- Concentrating
- Interaction/others under stressful situations
- Writing
- Reading
- Maintaining consciousness
- Thinking
- Learning

**Selection pool**

The Orthopaedic Surgery Department will consider applications for residency or fellowship programs from qualified physicians who meet one of the following criteria:

- Graduates of medical schools accredited by the LCME;
- Graduates of osteopathic schools accredited by the American Osteopathic Association (AOA);
- Graduates of medical schools actively affiliated with LLUSM including Montemorelos University, Universidad Adventista del Plata, Kasturba Medical College, Obafemi Awalowo University and Christian Medical College;
- Graduates of other medical schools who have successfully completed one or more years of a residency program approved by the Accreditation Council for Graduate Medical Education (ACGME);
- Graduates of other medical schools who have successfully passed the CSA examination offered by ECFMG;
- Graduates of other medical schools who are under contract with Seventh-day Adventist institutions affiliated with Loma Linda University may nominate physicians who require residency training in order to enhance their employment for such entities. In order to be eligible to make application based upon such nomination, a copy of a binding contract between the entity and applicant must be provided with an application. Such nomination and contract will allow the physician to be considered for a residency position, but does not guarantee that the applicant will be accepted for training at Loma Linda University Medical Center.

LLUMC will NOT consider applications of individuals who have violated the rules of the National Resident Matching Program.

**Application Process**

**Documentation**

All applicants are required to provide all documentation as required by the Electronic Residency Application Service (ERAS) application with a signed statement indicating that the information in the application is true and correct. Required information includes:

- Photocopy of medical school diploma (or evidence of anticipated graduation prior to appointment) from a medical school acceptable to the State of California
- Official medical school transcript(s), and translation if not in English
- Evidence of having achieved a passing score on at least one of the following examinations:
  - USMLE Step 1
  - NBME Part 1
  - FLEX Component 1 and 2
  - COMLEX 1
- Recommendation letters from each of the following
- Dean’s letter from the medical school of graduation
- Program Director for each prior training program
- Letter(s) of good standing from licensing board of any state where applicant has been licensed
- A letter from the Medical Staff Office of any facility where staff privileges have been held
- Minimum of two reference letters from physicians currently acquainted with applicant

**Foreign Medical Graduates**

International Medical School Graduates are required to submit the following additional documentation:
- “Evaluation Status Letter” from the Medical Board of California (MBC) dated within the past year, indicating acceptance of their medical education in meeting MBC requirements and eligibility to commence postgraduate training in California, should a position be offered.
- ECFMG Standard Certificate with valid date (must include an indication that the CSA was passed successfully, if applicant has no prior U.S. ACGME residency training).
- Scores for examinations used to qualify for the ECFMG Certificate.
- NOTE: LLUMC accepts ONLY the J-1 visa, sponsored by ECFMG.

**Application and pre-employment requirements**

All applicants must have successfully completed the appropriate training prescribed for beginning orthopaedic residency or fellowship program by the Accreditation Council for Graduate Medical Education.

Additional documentation may be required by House Staff Office, the Graduate Medical Education Committee, or the specific GME program prior to acting on a completed application.

Prior to beginning the orthopaedic residency program at LLUMC the accepted individual must at a minimum:
- Present evidence that he/she is legally employable in the State of California;
- Present evidence of an unrestricted license to practice medicine in the State of California if he/she has completed training as noted below:
- US Graduate: 24 months of ACGME accredited training;
- International Medical Graduate: 36 months of ACGME accredited training;
- Pass a LLUMC pre-employment physical examination including a urine drug screen
- Pass an extensive background check
- Present evidence of an unexpired Basic CPR Certificate
- Attend required Orientation activities
- Complete all required in-services, including, but not limited to, B.L.U.E. BOOK, P.U.R.P.L.E. BOOK, Compliance, and HIPAA training, as instructed by House Staff Office.
Selection Process

Introduction
This is a multi-faceted process with generalized evaluations and ratings as noted below superseded by an overall plan to best incorporate a cohesive orthopaedic team consistent with working in the realm of Loma Linda University Medical Center and its affiliates for the provision of orthopaedic care and residency training.

Selection committee composition
The selection committee is comprised of the residency director (Dr. Wongworawat), the department chair (Dr. Botimer), one or two attending from LLUMC Orthopaedics, and one attending from our affiliates, Arrowhead Regional Medical Center (Dr. Matiko) and Veterans Administration Medical Center (Dr. Shook or Dr. Syed). Resident(s) may be asked to participate as well. Additional committee members may be selected at the Program Director’s discretion.

Preliminary evaluation and screening
We participate in the National Resident Matching Program (NRMP) and accept four residents per year with inclusion of the intern year as is participated through the Department of General Surgery as coordinated under the direction of Orthopaedic Surgery. Applicants submit their application through the Electronic Residency Application Services (ERAS). These conditions and applications must be in compliance with House Staff Office and LLUMC requirements. The importance of recognizing LLUMC mission and affirmative action is considered. We average between 250-300 applications. A Step I Board on the USMLE of approximately 235 is used as a general screening tool.

Satisfactory completion of Part I of the Boards depends on being able to compete on the cognitive level with their peers in the orthopaedic surgery residency. This screening process reduces the number of applicants to approximately 100. The ERAS applications are then reviewed by each of the five physicians on the selection committee.

Each committee member individually reviews the ERAS applications for what they feel are important characteristics. This can include the USMLE scores, education, class ranking, AOA status, Dean’s letter, letters of recommendation, personal statements and rotation grades, if available. Research and volunteer work are also evaluated. No special consideration will be given for students who rotate with our department. Approximately 35 students will be selected for interview.

Interview process
Interviews are also granted to those people doing fourth-year medical student rotations here and LLUMC medical students. Interviewing is performed in one day in January and are coordinated as much as possible with the other orthopaedic residency programs in Southern California. Approximately 35 candidates are interviewed personally by the Residency Selection
Committee members on an individual basis. The scoring sheet is used according to the discretion of the interviewer.

**Rank list generation**

At the conclusion of the interview process, the committee meets with all participants having equal input and then decides on the rank order list using merits as noted above. By general agreement, the rank order list is composed after approximately two hours of discussion and input is elicited from each of the Committee members. The rank order list is submitted by the residency coordinator to the House Staff Office via ERAS.
GOALS AND OBJECTIVES
OVERALL PROGRAM GOALS AND OBJECTIVES

Overall Goal
To provide an orthopaedic residency program dedicated to the superior care of orthopaedic patients with an appropriate associated program of scientific research and teaching. Our primary concern is in the superior care of orthopaedic patients and the total commitment of returning people to functional lives. Through investigation and restoration, we hope to rehabilitate and restore function and form.

Patient Care

Goals
The orthopaedic resident will develop patient care that is compassionate, appropriate, and effective for the treatment of health programs and the promotion of health for orthopaedic patients.

Objectives
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families regarding general orthopaedic, trauma, and medical issues.
- Gather essential and accurate information about their patients.
- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date orthopaedic scientific evidence, and clinical judgment.
- Develop and carry out patient management plans.
- Counsel and educate patients and their families regarding orthopaedic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology to support patient care decisions and patient education.
- Perform competently all medical and invasive procedures considered essential to orthopaedic surgery.
- Provide health care services aimed at preventing health problems or maintaining health.
- Work with health care professionals, including those from other disciplines, to provide patient-focused care.

Medical Knowledge

Goals
The orthopaedic resident will gain medical knowledge about established and evolving biomedical, clinical, and cognate sciences, as well as the application of this knowledge to patient care.
Objectives
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty and on in-training examination performance.
- Know and apply the basic and clinically supportive sciences which are appropriate to orthopaedic surgery.

Practice-based Learning and Improvement

Goals
The orthopaedic resident will incorporate practice-based learning and improvement that involves the investigation and evaluation of care for their patients, the appraisal and assimilation of scientific evidence, and improvements in patient care.

Objectives
- Analyze practice experience and perform practice-based improvement activities using a systematic methodology.
- Locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems.
- Obtain and use information about their own population of patients and the larger population from which their patients are drawn.
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness.
- Use information technology to manage information, access on-line medical information, and support their own education.
- Facilitate the learning of students and other health care professionals.

Interpersonal and Communication Skills

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

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member or leader of a healthcare team or other professional group.
Professionalism

Goals
The orthopaedic resident will demonstrate professionalism, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to patients of diverse backgrounds.

Objectives
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical and orthopaedic needs of patients and society that supersedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities that may have resulted from musculoskeletal injury.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

Systems-based Practice

Goals
The orthopaedic resident will assimilate systems-based practice, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

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

Overall Goal
To provide an orthopaedic surgery service program dedicated to the superior care of the orthopaedic patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with orthopaedic problems and total commitment to returning people to useful life.

Patient Care

Goals
The orthopaedic surgery intern will experience inpatient care of orthopaedic patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families regarding general orthopaedics, trauma, and medical issues.
- Gather essential and accurate information about their patients.
- With careful supervision, make informed decisions about diagnostic and therapeutic interventions based on patient information and attending guidance.
- Counsel and educate patients and their families regarding orthopaedic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology, such as electronic medical records and electronic radiographic retrieval systems, to support patient care decisions and patient education.
- Under appropriate supervision, perform competently all medical and invasive procedures considered essential for the area of practice.
- Work with health care professionals, including those from other disciplines, such as the Trauma Service, to provide patient-focused care.

Medical Knowledge

Goals
The orthopaedic surgery intern will obtain specific knowledge in problems related to musculoskeletal problems. This is through the use of clinical materials, biomedical research data, and didactic learning. The orthopaedic surgery intern will apply this knowledge to patient care.
Objectives
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty.
- Know and apply basic and fundamental medical knowledge to orthopaedic surgery.

Practice-based Learning and Improvement

Goals
The orthopaedic surgery intern will appraise and assimilate scientific evidence for the care of the musculoskeletal patient. This involves investigation and evaluation of patient care.

Objectives
- Locate, appraise, and assimilate evidence from standard orthopaedic textbooks to improve the patient’s care.
- Use information technology to manage information, access on-line medical information, and support their own education.

Interpersonal and Communication Skills

Goals
The orthopaedic surgery intern will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member of a healthcare team, acting as a liaison between the Orthopaedic Service and the Emergency Department and the Trauma Service.

Professionalism

Goals
The orthopaedic surgery intern will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.
Objectives

- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical and orthopaedic needs of patients and society that supersedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities that may have resulted from musculoskeletal problems.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

Systems-based Practice

Goals

The orthopaedic surgery intern will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the orthopaedic surgery intern will effectively call on other resources in the system to provide optimal health care.

Objectives

- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Advocate for quality patient care and assist patients in dealing with system complexities.
- Know how to partner with health care managers and other healthcare providers to assess, coordinate, and improve health care and know how these activities can affect system performance.
**INTERN RHEUMATOLOGY ROTATION**

**Overall Goal**
To provide a rheumatology program dedicated to the provide education in the fundamentals of rheumatologic diseases and their impact on overall musculoskeletal health.

**Patient Care**

**Goals**
The rheumatology intern will participate in the care of the rheumatology patient, under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

**Objectives**
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families regarding rheumatologic issues.
- Gather essential and accurate information about their patients.
- With careful supervision, make informed decisions about diagnostic and therapeutic interventions based on patient information and attending guidance.
- Counsel and educate patients and their families regarding rheumatologic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology, such as electronic medical records and electronic radiographic retrieval systems, to support patient care decisions and patient education.
- Under appropriate supervision, perform competently all medical and invasive procedures considered essential for the area of practice.
- Work with health care professionals, including those from other disciplines to provide patient-focused care.

**Medical Knowledge**

**Goals**
The rheumatology intern will obtain specific knowledge in problems related to rheumatologic disease and how these impact musculoskeletal health. This is through the use of clinical materials, biomedical research data, and didactic learning.

**Objectives**
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty.
- Know and apply basic and fundamental medical knowledge to rheumatology.
Practice-based Learning and Improvement

Goals
The rheumatology intern will appraise and assimilate scientific evidence for the care of the rheumatology patient.

Objectives
- Locate, appraise, and assimilate evidence from standard textbooks to improve the patient’s care.
- Use information technology to manage information, access on-line medical information, and support their own education.

Interpersonal and Communication Skills

Goals
The rheumatology intern will develop an effective exchange of information and collaboration with patients and their families and other health professionals.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member of a healthcare team.

Professionalism

Goals
The rheumatology intern will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients and other healthcare professionals of diverse backgrounds.

Objectives
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical needs of patients and society that supersedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities that may have resulted from rheumatologic problems.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.
Systems-based Practice

Goals

The rheumatology intern will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the rheumatology intern will effectively call on other resources in the system to provide optimal health care.

Objectives

- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Advocate for quality patient care and assist patients in dealing with system complexities.
- Know how to partner with health care managers and other healthcare providers to assess, coordinate, and improve health care and know how these activities can affect system performance.
**INTERN ORTHOPAEDIC REHABILITATION ROTATION**

**Overall Goal**
To provide an orthopaedic rehabilitation program dedicated to the provide education in the fundamentals of musculoskeletal diseases and their impact on overall function, and to understand the role of rehabilitation in returning patients to maximum function.

**Patient Care**

**Goals**
The orthopaedic rehabilitation intern will participate in the care of the musculoskeletal rehabilitation patient, under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

**Objectives**
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families regarding rehabilitation issues.
- Gather essential and accurate information about their patients.
- With careful supervision, make informed decisions about diagnostic and therapeutic interventions based on patient information and attending guidance.
- Counsel and educate patients and their families regarding musculoskeletal and neurologic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology, such as electronic medical records and electronic radiographic retrieval systems, to support patient care decisions and patient education.
- Under appropriate supervision, perform competently all medical and invasive procedures considered essential for the area of practice.
- Work with health care professionals, including those from other disciplines to provide patient-focused care.

**Medical Knowledge**

**Goals**
The orthopaedic rehabilitation intern will obtain specific knowledge in problems related to disability and treatment modalities to return patient to maximum function. This is through the use of clinical materials, biomedical research data, and didactic learning.
Objectives
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty.
- Know and apply basic and fundamental medical knowledge to orthopaedic rehabilitation.

Practice-based Learning and Improvement

Goals
The orthopaedic rehabilitation intern will appraise and assimilate scientific evidence for the care of the rehabilitation patient.

Objectives
- Locate, appraise, and assimilate evidence from standard textbooks to improve the care of the musculoskeletal and neurological patient.
- Use information technology to manage information, access on-line medical information, and support their own education.

Interpersonal and Communication Skills

Goals
The orthopaedic rehabilitation intern will develop an effective exchange of information and collaboration with patients and their families and other health professionals.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member of a healthcare team.

Professionalism

Goals
The orthopaedic rehabilitation intern will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients and other healthcare professionals of diverse backgrounds.

Objectives
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical needs of patients and society that supersedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

**Systems-based Practice**

**Goals**

The orthopaedic rehabilitation intern will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the orthopaedic rehabilitation intern will effectively call on other resources in the system to provide optimal health care.

**Objectives**

- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Advocate for quality patient care and assist patients in dealing with system complexities.
- Know how to partner with health care managers and other healthcare providers to assess, coordinate, and improve health care and know how these activities can affect system performance.
**Intern Musculoskeletal Radiology Rotation**

**Overall Goal**
To provide a musculoskeletal radiology program dedicated to the provide education in the fundamentals of diagnostic imaging.

**Patient Care**

**Goals**
The musculoskeletal radiology intern will participate in diagnostic imaging related to patient care, under staff supervision.

**Objectives**
- Gather essential and accurate information about their patients.
- With careful supervision, understand diagnostic modalities based on patient information and attending guidance.
- Use information technology, such as electronic medical records and electronic radiographic retrieval systems, to support patient care decisions and patient education.
- Work with health care professionals, including those from other disciplines, to provide patient-focused care.

**Medical Knowledge**

**Goals**
The musculoskeletal radiology intern will obtain specific knowledge in problems related to orthopaedic problems. This is through the use of clinical materials, biomedical research data, and didactic learning.

**Objectives**
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty.
- Know and apply basic and fundamental medical knowledge to musculoskeletal radiology.
Practice-based Learning and Improvement

Goals
The musculoskeletal radiology intern will appraise and assimilate scientific evidence for the care of the orthopaedic patient, as it relates to radiology.

Objectives
- Locate, appraise, and assimilate evidence from standard textbooks to improve the patient’s care.
- Use information technology to manage information, access on-line medical information, and support their own education.
- Engage in learning through the use of teaching files and case studies.

Interpersonal and Communication Skills

Goals
The musculoskeletal radiology intern will develop an effective exchange of information and collaboration with patients and their families (where applicable) and other health professionals.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients, where applicable.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member of a healthcare team.

Professionalism

Goals
The musculoskeletal radiology intern will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients (where applicable) and other healthcare professionals of diverse backgrounds.

Objectives
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical needs of patients and society that supersedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities that may have resulted from musculoskeletal problems.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.
Systems-based Practice

Goals
The musculoskeletal radiology intern will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the musculoskeletal radiology intern will effectively call on other resources in the system to provide optimal health care.

Objectives
- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Understand the costs/benefits of different diagnostic modalities and be able to apply this knowledge in decision making.
- Advocate for quality patient care and assist patients in dealing with system complexities.
- Know how to partner with health care managers and other healthcare providers to assess, coordinate, and improve health care and know how these activities can affect system performance.
**INTERN PLASTIC SURGERY**

**Goals**

Loma Linda University Medical Center will provide a learning environment for the care, treatment and follow up of plastic and reconstructive surgery patients. Surgical basic science, including fluids, electrolytes, wound healing and nutrition, will be emphasized. Clinically, residents will assess surgical pathology pre-operatively, develop clinical judgment on managing these issues, and learn operative skills to address the problem. Careful postoperative care and follow up will be emphasized.

**Medical Knowledge**

**Objectives**

- Outline the components of a comprehensive focused history and physical examination pertinent to the evaluation and correction of congenital or acquired defects under the realm of plastic and reconstructive surgery.
- Discuss and compare skin and connective tissue.
- Explain the basic techniques for surgical repair of superficial incisions and lacerations of the head, neck, trunk, and extremities to include the following considerations:
  - Skin
  - Subcutaneous tissue
  - Superficial muscle and fascia
  - Dressings
  - Splints
  - Suturing and knot tying
- Describe the physiology of various techniques of skin and composite tissue transplantation with particular regard to component tissue circulation:
  - Skin grafts (split- vs. full- thickness)
  - Bone (cartilage grafts)
  - Composite grafts
  - Skin flaps
  - Muscle flaps
  - Myocutaneous flaps
  - Bone flaps
  - Osteocutaneous flaps
  - Myo-osseous flaps
  - Vascularized versus nonvascularized flaps
  - Neurocutaneous flaps
- Explain the assessment of facial skeletal trauma according to the following systems:
  - LeFort I, II, and III classification of maxillary fractures
  - Nasoethmoidal disruption classification
  - Zygomatic, orbit, and mandibular fractures
  - Disruption classification
- Discuss epidemiology, risk factors, treatment, and prevention of cutaneous malignancies in the geriatric patient, including:
  - Skin cancer rates (basal cell carcinoma [BCC], squamous cell carcinoma [SCC])
  - Average age of onset for BCC/SCC
  - Etiology of BCC/SCC
  - Usual modes of treatment for BCC/SCC (Mohs Technique, radiation, chemotherapy)
  - Prevention using medications (isotretinoin, beta-carotene)
- Explain the methods for performing incisional and excisional biopsies of skin and oral cavity.
- Demonstrate the systematic examination of the hand to assess motor and sensory function, including:
  - Intrinsic tendon and muscle function
  - Extensive tendon and muscle function
  - Median nerve
  - Ulnar nerve
  - Radial nerve
  - Circulation
  - Bones
- Outline appropriate diagnostic studies needed to supplement the physical examination when developing a treatment plan for:
  - Surgery of the hand
  - Facial fractures
- Summarize the evaluation of patients with head and neck cancer, and develop a treatment plan according to the following criteria:
  - Location of lesion
  - Size of primary lesion
  - Presence of metastatic disease
- Discuss the use of the reconstructive ladder (including skin grafts, local flaps, and regional and free microvascular flaps) in the definitive management of traumatic or excised wounds.
- Discuss the surgical treatment of:
  - Common hand injuries
  - Surgical repair of facial trauma, soft tissue, and bony defects
  - Resection and reconstruction of the simple, soft tissue defects following resection of neoplasms of the head and neck
  - Resection of skin and soft tissue neoplasms requiring complex reconstruction
- Summarize currently accepted surgical techniques for treating the following:
  - Craniofacial anomalies, including cleft lip and palate
  - Breast reconstruction after mastectomy
  - Reconstruction and ablative head and neck surgery
  - Aesthetic rejuvenation of the face and body

Patient Care

Objectives
- Establish basic proficiency in providing pre-operative and post-operative care (writes appropriate pre-op and post-op orders for floor patients, handles nursing calls appropriately, and manages most routine post-operative care with minimal intervention by supervisor).
- Take an appropriate history to evaluate patients with plastic/reconstructive surgical issues to include:
  □ a. A complete history of present illness
  □ b. Presence of any co-morbidities
  □ c. A review of social and family history impacting the present problem
  □ d. A complete review of systems

- Develop a proficiency in evaluation and interpretation of the different diagnostic modalities including: X-rays, ultrasounds CT scans, Contrast studies and MRIs.

- Discuss treatment options, risks and potential complications of patients with plastic surgery issues.

- Assist in the performance of plastic and reconstructive surgery procedures.

- Recognize and manage postoperative surgical complications, including wound infection, dehiscence and leaks, and lymphocele, seroma and hematoma formation.

- Demonstrate skill in basic surgical techniques, including:
  □ Knot tying
  □ Exposure and retraction
  □ Knowledge of instrumentation
  □ Incisions
  □ Closure of incisions
  □ Handling of graft material including mesh
  □ Establishing pneumoperitoneum
  □ Handling of laparoscopic instruments
  □ Handling of the laparoscopic camera

- Coordinate pre and post-surgical operative care for patients in the plastic surgery rotation.

- Assist in closure of abdominal incisions and exhibit competency in suture technique.

- Be able to apply and remove all types of dressings.

- Make and close a variety of incisions and tie knots using sterile technique.

**Practice-Based Learning & Improvement**

**Objectives**

- Demonstrate the ability to:
  □ Evaluate published literature in critically acclaimed journals and texts
  □ Apply clinical trials data to patient management
  □ Participate in academic and clinical discussions

- Accept responsibility for all dimensions of routine patient management on the wards

- Apply knowledge of scientific data and best practices to the care of the surgical patient

- Facilitate learning of medical students and physician assistant students on the team.

- Use the LLUMC library and databases on on-line resources to obtain up to date information and review recent advances in the care of the surgical patient.

- Demonstrate a consistent pattern of responsible patient care and application of new knowledge to patient management.

- Demonstrate a command and facility with on line educational tools.
Interpersonal & Communication Skills

Objectives
- Work as effective team members
- Cultivate a culture of mutual respect with members of nursing and support staff
- Develop patterns of frequent and accurate communication with team members and attending staff
- Gain an appreciation for both verbal and non-verbal communication from patients and staff
- Demonstrate consistent respectful interactions with members of nursing and support staff
- Demonstrate consistent, accurate and timely communication with members of the surgical team
- Demonstrate sensitivity and thoughtfulness to patients concerns, and anxieties.
- The resident will demonstrate the ability to provide and request appropriate consultation from other medical specialists.

Professionalism

Objectives
- The resident should be receptive to feedback on performance, attentive to ethical issues and be involved in end-of-life discussions and decisions.
- Understand the importance of honesty in the doctor-patient relationship and other medical interactions.
- Treat each patient, regardless of social or other circumstances, with the same degree of respect you would afford to your own family members.
- Learn how to participate in discussions and become an effective part of rounds, attending staff conference, etc.
- Complete all assigned patient care tasks for which you are responsible or provide complete sign out to the on-call resident.
- Maintain a presentable appearance that sets the standard for the hospital that includes but is not limited to adequate hygiene and appropriate dress. Scrubs should be worn only when operating or while on call.
- Assist with families of critically injured/ill patients and guidance of families towards or through difficult decisions.
- Demonstrate mentoring and positive role-modeling skills.
- Provide an appropriate orientation and guide all medical student as to their roles and responsibilities during the rotation.
- Provide an appropriate orientation to other junior residents that are about to rotate through the plastic surgery service.

Systems-Based Practice

Objectives
- Understand, review, and contribute to the refinement of clinical pathways
- Understand the cost implications of medical decision-making
- Partner with health care management to facilitate resource efficient utilization of the hospital’s resources.
- Describe in general terms the benefits of clinical pathway implementation
- Develop a cost-effective attitude toward patient management.
- Develop an appreciation for the benefits of a multi-disciplinary approach to management of critically ill surgical patients.
- Comply with the Health Insurance Portability and Accountability Act of 1996 (HIPAA) regulations regarding patient privacy and confidentiality.
- Demonstrate knowledge in steps and conduct during major surgical procedures.
- Have clear indications and know when it is appropriate to perform a surgical procedure.
- Have an understanding of when it is not appropriate to operate.
- Demonstrate knowledge of steps to be taken to have a patient ready for surgery including pre-op workup and medical clearance.


**NIGHT FLOAT**

**Overall Goal**

To provide an experience dedicated to the care of the patients with acute orthopaedic problems. Our primary goal is superior care of patients with acute injuries and total commitment to returning people to useful life.

**Patient Care**

**Goals**

The night call resident will experience emergency care of acutely injured patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

**Objectives**
- Demonstrate triage, prioritization, and decision-making skills.
- Use information technology, such as electronic medical records and electronic radiographic retrieval systems, to support patient care decisions and patient education.
- Under appropriate supervision, perform competently all medical and invasive procedures considered essential for the area of practice.
- Work with health care professionals, including those from other disciplines, to provide patient-focused care.

**Medical Knowledge**

**Goals**

The night call resident will obtain specific knowledge in problems related to acute injuries. This is through the use of clinical materials available in print and online. The night call resident will apply this knowledge to patient care.

**Objectives**
- Know and apply basic and fundamental medical knowledge to acute orthopaedic care.
  - Fractures and dislocations
  - Orthopaedic emergencies
  - Care of the multiply injured patient
Practice-based Learning and Improvement

Goals
The night call resident will appraise and assimilate scientific evidence for the care of patients with acute orthopaedic injuries. This involves investigation and evaluation of patient care.

Objectives
- Locate, appraise, and assimilate evidence from standard orthopaedic textbooks to improve the patient’s care.
- Use information technology to manage information, access on-line medical information, and support their own education.
- Facilitate the learning of students and other health care professionals.

Interpersonal and Communication Skills

Goals
The night call resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member of a healthcare team.

Professionalism

Goals
The night call resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical and orthopaedic needs of patients and society that supersedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities that may have resulted from musculoskeletal injury.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

**Systems-based Practice**

**Goals**

The night call resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the night call resident will effectively call on other resources in the system to provide optimal health care.

**Objectives**

- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Practice efficient management utilizing resources available during night call hours.
JUNIOR TRAUMA ROTATION

Overall Goal
To provide a trauma service program dedicated to the superior care of the multiply injured patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with multiple injuries and total commitment to returning people to useful life.

Patient Care

Goals
The junior trauma resident will experience inpatient, outpatient, and surgical care of multiply injured patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Surgical
  - Competency in sterile technique, patient site preparation, patient positioning, and aseptic draping;
  - Mastery of basic suturing technique, including multi-layer wound closure and complex wound management;
  - Mastery of basic surgical instrument skills (tools for exposure, hemostasis, retraction, tissue handling, and closure) including aseptic technique and atraumatic soft-tissue handling;
  - Understanding of common surgical approaches for fracture care. Examples include lateral approach to the ankle, lateral approach to the femur, deltopectoral approach to the shoulder, volar approach to the forearm;
  - Ability to perform the approach and find the starting point for femoral and tibial nails.
  - Knowledge of the steps for medullary nailing for diaphyseal fractures;
  - Ability to insert free hand interlocks in intramedullary nails;
  - Ability to reduce basic fracture patterns with manipulation, clamps, and K-wires;
  - Understanding of basic AO techniques including knowledge of screw and plate design.
  - Ability to perform basic plate osteosynthesis;
  - Ability to drill, measure, and tap bone for screw placement including lag screw technique.
- Office/Emergency Department/Clinical Practice
  - Ability to efficiently and thoroughly evaluate patient with orthopaedic issues in the clinic and emergency department settings including the ability to effectively communicate findings with chief residents, fellows, and attending;
  - Ability to work with multiple surgical specialties in the triage and management of the polytraumatized patient;
  - Ability to identify the appropriate imaging required to evaluate an injury;
□ Ability to interpret diagnostic plain films, CTs, and MRIs;
□ Ability to perform closed reduction and manipulations of fractures and dislocations including appropriate casting, splinting, and immobilization;
□ Ability to acutely manage open fractures including, irrigation & debridement, antibiotic selection, tetanus prophylaxis, reduction, immobilization, and assessment of associated injuries (typically vascular or neurologic);
□ Ability to perform local nerve blocks, joint aspirations.
□ Ability to identify patient in need of medical consultation early in the hospital course;
□ Ability to counsel and educate patients and families;
□ Effectively use information technology to support patient care decisions and patient education.

- Ward Management
  □ Ability to manage a substantial inpatient load according to principles of good inpatient hospital care and with respect to the preferences of the attendings on service.
  □ Ability to work with the nurse practitioners and physician assistants to ensure equitable distribution of the work load and deliver high quality patient care;
  □ Ability to identify potential complications of traumatic injuries such as compartmental syndrome, cognitive impairment, and depression;
  □ Daily review of anticoagulation, activity, and antibiotic plan for each patient;
  □ Ability to accurately document physical exams and patient care plan in the electronic medical record;
  □ Ability to maintain an up to date sign-out list of inpatients and their active issues.

Medical Knowledge

Goals
The junior trauma resident will obtain specific knowledge in problems related to trauma. This is through the use of clinical materials, biomedical research data, and didactic learning. The trauma resident will apply this knowledge to patient care.

Objectives
  - Ability to appropriately manage pre and post operative orthopaedic patients;
  - Knowledge of / ability to appropriately manage acutely injured patients (examples: required imaging, when/how to sheet a pelvis or reduce cervical spine dislocation, and indications for traction);
  - Knowledge of common orthopaedic traumatic injuries and their acute management (examples: distal radius, tibia, femur, & humerus fractures, shoulder & hip dislocations, hand lacerations, and open fractures);
  - Knowledge of expected risk of common surgical interventions (examples: malrotation of transverse/comminuted femur fractures, nonunion of segmental bone loss, knee pain following IMN of the tibia, etc);
  - Knowledge of reduction and splinting principles and techniques;
  - Knowledge of appropriate indications for surgical and non operative management of traumatic orthopaedic injuries;
- Knowledge of relative and absolute contraindications for surgical management of traumatic orthopaedic injuries;
- Knowledge of fracture patterns, classifications, and means of fixation;
- Knowledge of AO fracture fixation including lag screw, plate function, modes of fracture healing, material properties, and basic biomechanics;

**Practice-based Learning and Improvement**

**Goals**

The junior trauma resident will appraise and assimilate scientific evidence for the care of the multiply injured patient. This involves investigation and evaluation of patient care.

**Objectives**
- Prepares for and presents the cases at the weekly Indications Conference.
- Presents cases during morning signout rounds;
- The resident has demonstrated the ability and desire to identify errors in care, management, or understanding of clinical presentations that (s)he made or observed, and to learn from them;
- The resident has demonstrated the ability and desire to self-assess his/her performance as a surgeon or assistant surgeon in the operating room;
- Locate, appraise and assimilate evidence from scientific studies related to their patients’ health problems;
- Apply knowledge of study design and statistical methods to the appraisal of clinical studies and other medical information;
- Facilitate the learning of medical students and other health care professionals.

**Interpersonal and Communication Skills**

**Goals**

The junior trauma resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

**Objectives**
- Ability to create and sustain therapeutic and ethically sound relationships with patients;
- Ability to maintain open conversation between team members to ensure dissemination of important information;
- Ability to effectively communicate with other services within the hospital;
- Maintain verbal and written sign-out during transition of patient care;
- Maintained appropriate daily communication with each of the faculty members regarding inpatients according to the standards of each faculty member (defined, in part, in the guide below);
- Able to communicate appropriately, clearly, and in a timely fashion any important changes in status on ER patients, inpatients and outpatients to fellow residents and attending staff.

**Professionalism**

**Goals**
The junior trauma resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

**Objectives**
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with patients;
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with support staff;
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with peers;
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with faculty;
- The resident treated consulting services (including medical students, residents, and faculty on those services) and anesthesia providers with respect and dignity;
- The resident behaved consistently in an ethical fashion;
- Ability to maintain an appropriately professional physical appearance;
- There were no critical incidents: failures of integrity, dereliction of duty, or overt or implied sexism, racism, or cultural insensitivity.

**Systems-based Practice**

**Goals**
The junior trauma resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the junior trauma resident will effectively call on other resources in the system to provide optimal health care.

**Objectives**
- The resident engaged consulting services (including non-medical consulting services, such as social services) appropriately, including calling for consults when indicated, and responding to the recommendations of consultants in a timely and effective manner;
- Demonstrated an understanding of cost effective health care delivery while maintaining high quality patient care;
- The resident ran the service in a time-efficient manner so has to optimize his/her learning, such that demands from the ER were balanced effectively against time in the OR and/or clinic;
- Participation in the clinic and the OR in an efficient and effective manner.
JUNIOR SPINE ROTATION

Overall Goal

To provide a junior spine service program dedicated to the superior care of the spine patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with spinal injuries and total commitment to returning people to useful life.

Patient Care

Goals

The junior spine resident will experience inpatient, outpatient, and surgical care of spine patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives

- Work up, document, and present a patient with spine problems specifying the working diagnosis, studies to confirm or change the diagnosis, treatment alternatives and expected outcomes.
- Communicate compassionately and effectively with patients and families regarding the above.
- Recognize and describe neurological deficits (including pathophysiology), resulting limitations, and accommodations for functional deficits.
- Recognize and describe spinal deformity conditions, fractures, and dislocations, including pathophysiology.
- Prescribe appropriate spinal orthoses and supervise their application.
- Demonstrate preoperative readiness by specifying for each case: indications and goals, step by step description of approach and procedure, three-dimensional considerations, expected difficulties and risks, contingency plans and criteria for acceptable intraoperative result.
- Perform and assist essential surgical procedures: posterior cervical, thoracic and lumbar exposure and arthrodesis, anterior cervical approach and arthrodesis, discectomy.
- List all equipment, tables, imaging needs and demonstrate correct review of the completeness of surgical set up for all cases.
- Demonstrate attention to detail in the pre- and postoperative care of patients.
- Demonstrate ability to recognize and initiate treatment of all complications.
- Discuss and confirm or challenge diagnoses and treatment plans based upon recent literature.
- Make patient treatment decisions and possess a basic understanding of indications for surgical procedures with various elective pathologies as well as non-elective pathologies.
- Possess an understanding of indications for surgical treatment of idiopathic scoliosis, congenital scoliosis, congenital kyphosis, various types of spondylolisthesis, various types of fractures, various types of tumors, and infections of the spine.
- Perform a complete musculoskeletal and neurologic examination, including the cervical spine, thoracic spine and lumbar spine, including neurologic examination of the upper and lower
extremities and be able to explain pathologies such as an absent reflex or long tract signs such as positive Hoffmann or positive Babinski and/or clonus.
- Effectively participates in the decision-making process of issues on in-hospital patients.
- Display competency in performing a full office patient examination, providing a differential diagnosis and treatment plan.
- Exhibit competency in exposing the spine posteriorly, performing straightforward decompressions with Kerrison posteriorly. Display basic familiarity with placing hooks, wires and pedicle screws in the spine. Achieve proficiency with first assisting on operative procedures.
- Effectively communicate and demonstrates care and respectful behavior when interacting with patients and families.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology to support patient care decisions and patient education.
- Provide health care services aimed at preventing health problems or maintaining health.
- Work with other health care professionals from various disciplines to provide excellent patient-focused care.

Medical Knowledge

Goals
The junior spine resident will obtain specific knowledge in problems related to spinal injuries. This is through the use of clinical materials, biomedical research data, and didactic learning. The junior spine resident will apply this knowledge to patient care.

Objectives
- Apply literature and text obtained knowledge to the above and demonstrate basic science knowledge relevant to spine.
- Prepare and present at least one spine topic in depth for departmental conference.
- Complete reading list with review by attending staff.
- Present a reasonable classification system for all spinal pathologies including cervical disc herniation, lumbar disc herniation, thoracic disc herniation, spinal fractures, spinal tumors, idiopathic scoliosis, idiopathic kyphosis, congenital scoliosis, congenital kyphosis, spondylolisthesis, flaccid paralytic deformities, and spastic paralytic deformities.
- Successfully accomplish basic radiographic measurements such as coronal Cobb measurements and sagittal Cobb angles.
- Accurately define the difference between the anterior, posterior and middle columns.
- Accurately read a basic radiographic, MRI, and CT-myelogram study of the cervical, thoracic and lumbar spine.
Practice-based Learning and Improvement

Goals
The junior spine resident will appraise and assimilate scientific evidence for the care of patients with spine injuries. This involves investigation and evaluation of patient care.

Objectives
- Utilize resources to build medical knowledge relevant to cases seen.
- Identify studies relevant to individual experience.
- Critical appraisal of literature relevant to patients seen.
- Disseminates knowledge to others when relevant.
- Attends Indication Conferences and demonstrates understanding of the surgical treatment and indications for anterior surgery versus posterior surgery versus combined surgery.
- Locate, appraise and assimilate evidence from past and on-going scientific studies related to patient health issues.
- Obtain and use information about his/her patient population and the larger population from which patients are drawn.
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies.
- Use information technology such as OVID or MEDLINE to manage information, access on-line medical information and support his/her own education.

Interpersonal and Communication Skills

Goals
The junior spine resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Incorporate AAOS communication skills course techniques.
- Work effectively with others as a member or leader of a health care team.
- Create and sustain a therapeutic and ethically sound relationship with patients and their families.
- Effectively use listening skills.
- Effectively provide information via various methods.
- Work effectively with others as a member or leader of a health care team.
Professionalism

Goals
The junior spine resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Behavior that supersedes self interest, demonstrates a commitment to excellence and improvement.
- Legible and timely documentation.
- Commitment to ethical behavior, confidentiality.
- Sensitivity and responsiveness to patient and team’s culture and demographics.
- Interact in a professional manner with inpatients, outpatients, referring physicians, orthopaedic residents, attendings and all patients in the practice.
- Interact effectively with both hospital patients and outpatients.
- Possess some competency in effectively managing hospital patients.
- Demonstrate respect, compassion and integrity in response to the needs of patients and their families.
- Demonstrate ethical principles pertaining to patient confidentiality issues.
- Demonstrate sensitivity to the culture, age, gender and disabilities of patients and fellow health care professionals.

Systems-based Practice

Goals
The junior spine resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the spine resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Demonstrate an understanding of health care systems and challenges.
- Complete all records and paperwork.
- Demonstrates knowledge of cost effectiveness in health care.
- Advocates for patient when cost and quality issues present.
- Partners with administrative personnel when needed.
- 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.
- Demonstrate knowledge of how the different types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources.
- Practice cost-effective health care and resource allocation that does not compromise quality of care.
- Demonstrate an understanding the impact of correct coding during patient office visits.
- Acts as an advocate for quality patient care and assists patients in dealing with system complexities.
- Effectively partners with health care managers and health care providers to assess, coordinate and improve health care, and know how these activities can affect system performance.
**JUNIOR SPORTS ROTATION**

**Overall Goal**
To provide a sports service program dedicated to the superior care of the sports injury patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with sports injuries and total commitment to returning people to useful life.

**Patient Care**

**Goals**
The junior sports resident will experience inpatient, outpatient, and surgical care of sports injury patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

**Objectives**
- Able to effectively develop the initial patient care and clinical skills to facilitate adequate evaluation of common shoulder, elbow, knee, and ankle problems seen in the athletic patient population.
- Demonstrates clinical skills that include reproducible physical examination of the knee, shoulder, elbow and ankle. Demonstrates physical exam skills that facilitate identification of typical findings of sports medicine problems of these joints including:
  - Knees—ligamentous instability and meniscal pathology.
  - Shoulder—conditions of impingement syndrome, rotator cuff tear, glenohumeral instability and AC joint separation.
  - Elbow—conditions of the medial and lateral epicondylitis and ulnar neuritis.
  - Ankle—ankle sprains, Achilles tendon rupture, and chondral lesions of the talar dome.
- Able to demonstrate surgical skills that include portal placement for and complete diagnostic arthroscopy of the knee and shoulder, arthroscopic partial meniscectomy, harvest of the central-third patella tendon and hamstring tendons for ACL reconstruction, arthroscopic acromioplasty and deltopectoral approach to the shoulder for anterior stabilization, and open debridement of the medial and/or lateral epicondyle of the elbow.
- Demonstrates basic understanding of the information gathering process of the detailed history and physical exam with attention to the mechanism of injury as it relates to the athlete’s specific sport as well as the impact of the athlete’s complaints on his/her ability to perform the sport-specific tasks required by their chosen sport.
- Effectively communicates and demonstrates care and respectful behaviors when interacting with patients and families.
- Able to develop and carry out patient management plans.
- Demonstrates the ability to practice culturally competent medicine.
- Able to use information technology to support patient care decisions and patient education.
- Able to provide health care services aimed at preventing health problems or maintaining health (Rehab, OT, PT).
- Able to work with other health care professionals from various disciplines to provide excellent patient-focused care.
- Demonstrate a complete exam of the shoulder and the knee. Maneuvers of the scope: pistoning, pivoting and rotating. This includes establishing a pattern of dictating the findings section. The order of dictation should follow your order of examination and include the normal findings. The examples reflect Dr. Jobe’s order of examination. Your dictation should reflect yours. Following the same order will help you be inclusive of all of the findings.
  - Example of knee regions and potential findings:
    - Suprapatellar pouch: synovium, loose bodies
    - Patellofemoral joint: condition of cartilage, plicae
    - Medial gutter: synovium, osteophytes
    - Medial joint: cartilage, meniscus
    - Intercondylar notch: cruciates, synovium, osteophytes, loose bodies
    - Lateral joint: cartilage, meniscus, popliteus
    - Lateral gutter: osteophytes, shelf, synovium, loose bodies
  - Example Shoulder regions and potential findings:
    - Anterior Superior quadrant: this is the region of the most normal labral variations; superior GH ligament; middle GH ligament; recess(es); loose bodies; subscapularis
    - Anterior Inferior quadrant: labrum and its attachment; Inferior GH Ligament
    - Inferior Pouch: synovium; capacity
    - Posterior Inferior quadrant: labrum and Inferior GH Ligament
    - Posterior Superior quadrant: labrum and attachment; Biceps origin
    - Biceps Long Head tendon: injection; fraying; translation
    - Rotator cuff: Pulley of the Biceps; Cuff attachment; Cable; tearing; bare area
    - Humeral head: condition of cartilage; denting
    - Glenoid: condition of cartilage

Medical Knowledge

Goals
The junior sports resident will obtain specific knowledge in problems related to sports injuries. This is through the use of clinical materials, biomedical research data, and didactic learning. The sports resident will apply this knowledge to patient care.

Objectives
- Able to demonstrate basic preoperative and postoperative patient evaluation and assessment skills.
- Possesses a basic understanding of the anatomy of the shoulder, elbow, knee, and ankle as it relates to common sports injuries.
- Possesses knowledge of appropriate imaging studies to recommend for the more common clinical conditions encountered in the athletically active population including anterior cruciate ligament injury, collateral ligament injury of the knee, shoulder instability, rotator cuff conditions, suspected meniscal pathology, osteochondral injuries, and ankle injuries.
- Able to read and interpret these imaging studies mentioned above.
- Possesses basic arthroscopy skills of the knee and shoulder. This is to include an understanding of the surface anatomy as it applies to portal placement, the intraarticular arthroscopic anatomy including common pathologic entities and the development of a systematic approach to diagnostic arthroscopy of the knee and shoulder joints.
- Attends and participates in the weekly Indications Conference.

**Practice-based Learning and Improvement**

**Goals**

The junior sports resident will appraise and assimilate scientific evidence for the care of the sports injury patient. This involves investigation and evaluation of patient care.

**Objectives**
- Able to locate, appraise and assimilate evidence from scientific studies related to patients’ health issues.
- Able to obtain and use information about his/her patient population and the larger population from which patients are drawn.
- Able to apply knowledge of study designs and statistical methods to the appraisal of clinical studies.
- Able to use information technology to manage information, access on-line medical information and support his/her own education.
- Able to facilitate the learning of medical students on the Sports Medicine service and other health care professionals on an informal basis in clinics, operating rooms and conferences.
- Attends and participates in the weekly Indications Conference.

**Interpersonal and Communication Skills**

**Goals**

The junior sports resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

**Objectives**
- Communicates with radiology and sports physical therapy personnel for rehab purposes to coordinate patient care effectively.
- Specifically:
  - Effectively communicates to radiology consultants the general requirement of the necessary imaging study including the specific question the imaging study seeks to address.
  - Effectively communicates the basic principles of rehab protocols for procedures such as ACL reconstruction, partial meniscectomy, acromioplasty, and anterior stabilization.
- Able to create and sustain a therapeutic and ethically sound relationship with patients and their families.
- Able to effective use listening skills.
- Able to effectively provide information via various methods.
- Able to work effectively with others as a member or leader of a health care team.

**Professionalism**

**Goals**

The junior sports resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

**Objectives**

- Maintains the strictest confidence in any and all interactions dealing with all patients, especially professional athletes with some measure of local, regional or national celebrity. Refrains from the discussion of the athlete with family, friends or colleagues.
- Demonstrates respect, compassion and integrity in response to the needs of patients and their families.
- Demonstrates ethical principles pertaining to patient confidentiality issues.
- Demonstrates sensitivity to the culture, age, gender and disabilities of patients and fellow health care professionals.

**Systems-based Practice**

**Goals**

The junior sports resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the junior sports resident will effectively call on other resources in the system to provide optimal health care.

**Objectives**

- Maintains the strictest confidence in any and all interactions dealing with all patients, especially professional athletes with some measure of local, regional or national celebrity. Refrains from the discussion of the athlete with family, friends or colleagues.
- Demonstrates knowledge of indications and their impact on cost-effectiveness and efficiency of patient care.
- Acts as an advocate for quality of patient care.
- Able to assess, coordinate and improve the care of patients within the current health care model(s) or systems in the program [OT, PT and Rehab].
JUNIOR ADULT RECONSTRUCTION ROTATION

Overall Goal
To provide a joints service program dedicated to the superior care of patients with degenerative joint disease of the lower extremities, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with arthritis and total commitment to returning people to useful life.

Patient Care

Goals
The junior joints resident will experience inpatient, outpatient, and surgical care of patients with degenerative joint disease under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Communicates effectively with patient/families.
- Effectively evaluates hip and knee pain in adult patients.
- Able to accurately and competently perform history and physical examinations.
- Demonstrates competency in the postoperative care of patients and treatment of postoperative complications.
- Communicates effectively with all members of the health care team.
- Able to formulate long-term patient care plan.
- Demonstrates competency with surgical approaches to hip and knee (surgical competence)

Medical Knowledge

Goals
The junior joints resident will obtain specific knowledge in problems related to degenerative joint disease. This is through the use of clinical materials, biomedical research data, and didactic learning. The junior joints resident will apply this knowledge to patient care.

Objectives
- Demonstrates basic knowledge of hip and knee implant design.
- Demonstrates basic knowledge of anatomy of hip and knee.
- Demonstrates knowledge of preoperative planning techniques.
- Demonstrates knowledge of diagnosis and treatment of complications related to reconstructive procedures of hip and knee.
- Demonstrates development of case presentation skills.
Practice-based Learning and Improvement

Goals
The junior joints resident will appraise and assimilate scientific evidence for the care of patients with degenerative joint disease. This involves investigation and evaluation of patient care.

Objectives
- Demonstrates basic understanding of knowledge presented through curriculum materials and is able to effectively assimilate into patient care practices.
- Demonstrates development of case presentation skills.
- Read case-specific articles from reading list.
- Use information technology such as OVID and Medline to enhance practice-based learning.

Interpersonal and Communication Skills

Goals
The junior joints resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Able to create and sustain a therapeutic and ethically sound relationship with patients and their families.
- Able to effective use listening skills.
- Able to effectively provide information via various methods.
- Able to work effectively with others as a member or leader of a health care team.

Professionalism

Goals
The junior joints resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Exhibits a commitment to sound ethical principle in all aspects of patient care.
- Interacts with patients and families in a respectful, ethical and compassionate manner.
- Develops and exhibits sensitivity to diverse patient and workforce population – with respect to age, culture, gender, etc.
Systems-based Practice

Goals
The junior joints resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the junior joints resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Demonstrates understanding how total joint replacement surgery affects other members of health care team.
- Demonstrates awareness of economic issues in total joint arthroplasty surgery.
- Demonstrates awareness of health care workers’ involvement in integrated care of total joint arthroplasty patient.
- Practices cost-effective medical care within the system or practice model without compromising quality of care.
- Acted as an advocate for quality of patient care.
JUNIOR TRAUMA ROTATION

Overall Goal
To provide a trauma service program dedicated to the superior care of the multiply injured patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with multiple injuries and total commitment to returning people to useful life.

Patient Care

Goals
The junior trauma resident will experience inpatient, outpatient, and surgical care of multiply injured patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Surgical
  - Competency in sterile technique, patient site preparation, patient positioning, and aseptic draping;
  - Mastery of basic suturing technique, including multi-layer wound closure and complex wound management;
  - Mastery of basic surgical instrument skills (tools for exposure, hemostasis, retraction, tissue handling, and closure) including aseptic technique and atraumatic soft-tissue handling;
  - Understanding of common surgical approaches for fracture care. Examples include lateral approach to the ankle, lateral approach to the femur, deltopectoral approach to the shoulder, volar approach to the forearm;
  - Ability to perform the approach and find the starting point for femoral and tibial nails. Knowledge of the steps for medullary nailing for diaphyseal fractures;
  - Ability to insert free hand interlocks in intramedullary nails;
  - Ability to reduce basic fracture patterns with manipulation, clamps, and K-wires;
  - Understanding of basic AO techniques including knowledge of screw and plate design. Ability to perform basic plate osteosynthesis;
  - Ability to drill, measure, and tap bone for screw placement including lag screw technique.
- Office/Emergency Department/Clinical Practice
  - Ability to efficiently and thoroughly evaluate patient with orthopaedic issues in the clinic and emergency department settings including the ability to effectively communicate findings with chief residents, fellows, and attending;
  - Ability to work with multiple surgical specialties in the triage and management of the polytraumatized patient;
  - Ability to identify the appropriate imaging required to evaluate an injury;
□ Ability to interpret diagnostic plain films, CTs, and MRIs;
□ Ability to perform closed reduction and manipulations of fractures and dislocations including appropriate casting, splinting, and immobilization;
□ Ability to acutely manage open fractures including, irrigation & debridement, antibiotic selection, tetanus prophylaxis, reduction, immobilization, and assessment of associated injuries (typically vascular or neurologic);
□ Ability to perform local nerve blocks, joint aspirations.
□ Ability to identify patient in need of medical consultation early in the hospital course;
□ Ability to counsel and educate patients and families;
□ Effectively use information technology to support patient care decisions and patient education.

- Ward Management
□ Ability to manage a substantial inpatient load according to principles of good inpatient hospital care and with respect to the preferences of the attendings on service.
□ Ability to work with the nurse practitioners and physician assistants to ensure equitable distribution of the work load and deliver high quality patient care;
□ Ability to identify potential complications of traumatic injuries such as compartmental syndrome, cognitive impairment, and depression;
□ Daily review of anticoagulation, activity, and antibiotic plan for each patient;
□ Ability to accurately document physical exams and patient care plan in the electronic medical record;
□ Ability to maintain an up to date sign-out list of inpatients and their active issues.

Medical Knowledge

Goals
The junior trauma resident will obtain specific knowledge in problems related to trauma. This is through the use of clinical materials, biomedical research data, and didactic learning. The trauma resident will apply this knowledge to patient care.

Objectives
- Ability to appropriately manage pre and post operative orthopaedic patients;
- Knowledge of / ability to appropriately manage acutely injured patients (examples: required imaging, when/how to sheet a pelvis or reduce cervical spine dislocation, and indications for traction);
- Knowledge of common orthopaedic traumatic injuries and their acute management (examples: distal radius, tibia, femur, & humerus fractures, shoulder & hip dislocations, hand lacerations, and open fractures);
- Knowledge of expected risk of common surgical interventions (examples: malrotation of transverse/comminuted femur fractures, nonunion of segmental bone loss, knee pain following IMN of the tibia, etc);
- Knowledge of reduction and splinting principles and techniques;
- Knowledge of appropriate indications for surgical and non operative management of traumatic orthopaedic injuries;
- Knowledge of relative and absolute contraindications for surgical management of traumatic orthopaedic injuries;
- Knowledge of fracture patterns, classifications, and means of fixation;
- Knowledge of AO fracture fixation including lag screw, plate function, modes of fracture healing, material properties, and basic biomechanics;

**Practice-based Learning and Improvement**

**Goals**

The junior trauma resident will appraise and assimilate scientific evidence for the care of the multiply injured patient. This involves investigation and evaluation of patient care.

**Objectives**
- Prepares for and presents the cases at the weekly Indications Conference.
- Presents cases during morning signout rounds;
- The resident has demonstrated the ability and desire to identify errors in care, management, or understanding of clinical presentations that (s)he made or observed, and to learn from them;
- The resident has demonstrated the ability and desire to self-assess his/her performance as a surgeon or assistant surgeon in the operating room;
- Locate, appraise and assimilate evidence from scientific studies related to their patients’ health problems;
- Apply knowledge of study design and statistical methods to the appraisal of clinical studies and other medical information;
- Facilitate the learning of medical students and other health care professionals.

**Interpersonal and Communication Skills**

**Goals**

The junior trauma resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

**Objectives**
- Ability to create and sustain therapeutic and ethically sound relationships with patients;
- Ability to maintain open conversation between team members to ensure dissemination of important information;
- Ability to effectively communicate with other services within the hospital;
- Maintain verbal and written sign-out during transition of patient care;
- Maintained appropriate daily communication with each of the faculty members regarding inpatients according to the standards of each faculty member (defined, in part, in the guide below);
- Able to communicate appropriately, clearly, and in a timely fashion any important changes in status on ER patients, inpatients and outpatients to fellow residents and attending staff.

**Professionalism**

**Goals**

The junior trauma resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

**Objectives**

- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with patients;
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with support staff;
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with peers;
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with faculty;
- The resident treated consulting services (including medical students, residents, and faculty on those services) and anesthesia providers with respect and dignity;
- The resident behaved consistently in an ethical fashion;
- Ability to maintain an appropriately professional physical appearance;
- There were no critical incidents: failures of integrity, dereliction of duty, or overt or implied sexism, racism, or cultural insensitivity.

**Systems-based Practice**

**Goals**

The junior trauma resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the junior trauma resident will effectively call on other resources in the system to provide optimal health care.

**Objectives**

- The resident engaged consulting services (including non-medical consulting services, such as social services) appropriately, including calling for consults when indicated, and responding to the recommendations of consultants in a timely and effective manner;
- Demonstrated an understanding of cost effective health care delivery while maintaining high quality patient care;
- The resident ran the service in a time-efficient manner so has to optimize his/her learning, such that demands from the ER were balanced effectively against time in the OR and/or clinic;
- Participation in the clinic and the OR in an efficient and effective manner.
JUNIOR TUMOR ROTATION

Overall Goal

To provide a tumor service program dedicated to the superior care of the patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with musculoskeletal lesions and total commitment to returning people to useful life.

Patient Care

Goals

The junior tumor resident will experience inpatient, outpatient, and surgical care of patients with musculoskeletal tumors under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives

- Able to 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 population.
- Demonstrates clinical skills that include reproducible physical examination of the musculoskeletal system including an evaluation of palpable masses, including a physical examination of the skin, muscle, bone, and joint that includes a vascular, lymphatic, and neurological evaluation.
- Able to demonstrate surgical skills with attending supervision appropriate to the level of training that includes 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 a hematoma or pathologic fracture.
- Able to perform toe, foot, below knee and above knee amputations.
- Able to place intramedullary fixation for lower extremity metastases.
- Demonstrates basic understanding of the information gathering process of the 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. This would specifically include the duration of pain or of a mass, and identify alleviating factors, aggravating factors, duration of symptoms, a history of cancer, risk factors for cancer and prior treatments including imaging studies. Participate in Outpatient evaluation of new and return oncology service patients.
- Demonstrate ability to manage inpatient care including fluid and blood resuscitation, antibiotics, drains, physical therapy and nursing orders, and discharge planning.
- Effectively communicates and demonstrates care and respectful behaviors when interacting with patients and families.
- Able to develop and carry out patient management plans.
- Demonstrates the ability to practice culturally competent medicine.
- Able to use information technology to support patient care decisions and patient education.
- Able to coordinate health care services aimed at preventing health problems or maintaining health (OT, PT).
- Able to work with other health care professionals from various disciplines to provide excellent patient-focused care.
- Ability to recognize common postoperative or treatment related complications and initiate strategies including appropriate consultation with the supervising physician.

Medical Knowledge

Goals
The junior tumor resident will obtain specific knowledge in problems related to trauma. This is through the use of clinical materials, biomedical research data, and didactic learning. The tumor resident will apply this knowledge to patient care.

Objectives
- Able to demonstrate basic preoperative and postoperative patient evaluation and assessment skills.
- Possesses a basic understanding of the anatomy including the concept of anatomic compartments and the location of important nerves and vessels to the extremity.
- Possesses knowledge of appropriate imaging studies to recommend for the more common clinical conditions encountered in those with neoplastic conditions.
- Able to read and interpret these imaging studies mentioned above in light of characteristics that help in distinguishing neoplasm from non-neoplastic conditions (infection and trauma) as well as benign from malignant disease.
- 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, metastatic disease, or myeloma.
- 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.
- Understand staging systems commonly used for patients with bone and soft-tissue tumors.
- Ability to interpret histological specimens and contrast benign and malignant characteristics for common soft-tissue and bone tumors.
- The ability to distinguish between radical, wide, marginal and intralesional resections and amputations.
- Understand the rationale for the use of neoadjuvant and adjuvant chemotherapy and radiation therapy.
- Understand the indications and contra-indications for limb salvage surgery and the comparative effectiveness of limb salvage options and amputations.
- Understand those factors that are associated with the development of a pathologic fracture in patients with metastatic disease.
- Ability on the basis of history, examination and laboratory findings to diagnose postoperative complications such as infection, compartment syndrome, nerve or vascular injury, deep venous thrombosis, etc.
Practice-based Learning and Improvement

Goals

The junior tumor resident will appraise and assimilate scientific evidence for patient care. This involves investigation and evaluation of patient care.

Objectives

- Able to locate, appraise and assimilate evidence from scientific studies related to patients’ health issues.
- Able to obtain and use information about his/her patient population and the larger population from which patients are drawn.
- Able to apply knowledge of study designs and statistical methods to the appraisal of clinical studies.
- Able to use information technology to manage information, access on-line medical information and support his/her own education.
- Able to facilitate the learning of medical students and other learners on the Oncology service and other health care professionals on an informal basis in clinics, operating rooms and conferences.
- Ability to critically evaluate literature regarding patients with bone and soft-tissue tumors.
- Ability to analyze the circumstances surrounding a complication and to formulate an improvement plan to improve future care.

Interpersonal and Communication Skills

Goals

The junior tumor resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives

- Communicates with radiology, consulting physicians and services in order to coordinate patient care effectively.
- Invites questions from patients and their families providing education regarding the patient’s condition and the treatment plan.
- Able to create and sustain a therapeutic and ethically sound relationship with patients and their families.
- Able to effective use listening skills.
- Able to effectively provide information via various methods.
- Able to work effectively with others as a member or leader of a health care team.
- Provides necessary reporting to more senior residents, fellows and attending staff to ensure good patient care.
- Respond to patient phone calls and communication from allied health professionals.
Professionalism

Goals
The junior tumor resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Maintains the strictest confidence in any and all interactions dealing with all patients.
- Demonstrates compassion and empathy for those being evaluated for bone and soft-tissue neoplasms.
- Demonstrates respect, compassion and integrity in response to the needs of patients and their families.
- Demonstrates ethical principles pertaining to patient confidentiality issues.
- Demonstrates sensitivity to the culture, age, gender and disabilities of patients.
- Provides compassion and understanding about end of life issues.
- Promptly recognizes and acknowledges complications that arise.
- Maintain adequate documentation and timely completion of medical records.
- Complete teaching and rotation evaluations.

Systems-based Practice

Goals
The junior tumor resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the junior trauma resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Maintains the strictest confidence in any and all interactions dealing with all patients.
- Demonstrates knowledge of treatment plans and their impact on cost-effectiveness and efficiency of patient care.
- Acts as an advocate for quality of patient care.
- Able to assess, coordinate and improve the care of patients within the current health care model(s) or systems in the program [OT, PT and Rehab].
- Complete all requirements for compliance, risk management, and safety education.
JUNIOR HAND ROTATION

Overall Goal
To provide a hand service program dedicated to the superior care of the upper extremity patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with upper extremity injuries and total commitment to returning people to useful life.

Patient Care

Goals
The junior hand resident will experience inpatient, outpatient, and surgical care of upper extremity patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Perform a thorough and accurate history and physical examination including history of the chief complaint, history and mechanism of the injury, past medical and surgical history, social history. The physical exam should include exam for identification of: peripheral nerve, tendon integrity and chronic tendon disorders (de Quervain’s, ECU tendonitis, stenosing tenosynovitis), vascular status, skin and nail disorders, joint evaluation including stability and the presence of arthritis (CMC, PIP, DIP, MCP arthritis) as well as specific and pertinent provocative maneuvers.
- Apply the knowledge of the natural history of upper extremity disorders with and without surgical treatment.
- Evaluate the following conditions thoroughly with history, physical examination and radiographs as appropriate: animal and human bites, carpal tunnel syndrome, cubital tunnel syndrome, de Quervain’s tendonitis, fingertip injuries and amputations, flexor and extensor injuries, flexor tenosynovitis, ganglia of the hand and wrist, infections - finger and hand, mallet finger injuries, phalangeal and metacarpal fractures, soft tissue coverage problems (open tibia fracture, dorsal hand trauma), sprains and dislocations of the CMC, MCP, and PIP joints, static carpal instability, tendinitis, thumb basal joint arthritis, trigger finger.
- Effectively communicate the history as taken from the patient and/or the patient’s guardian or family in a succinct and accurate fashion.
- Effectively communicate and demonstrate respectful and caring behavior when interacting with patients, their guardians and their families.
- Competent in assuming responsibility for specifically inquiring about the presence or absence of systemic disease relevant to conditions commonly encountered in the hand such as diabetes mellitus, hypothyroidism, seropositive and seronegative arthritides.
- Demonstrate knowledge and application of knowledge of non-operative treatment, which includes anti-inflammatory, hand therapy, application of heat and cold as well as basics of splinting.
- Perform simple invasive procedures for patients suffering from hand-related complaints – such as injections of trigger finger, carpal tunnel and base of thumb arthritis at the CMC joint.
- 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 upper extremity disorders and understand the indications for ordering such exams, including their applications.
- Assess hand 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.
- Demonstrate facility in the more commonly encountered surgical procedure.
- Generate an operative plan and perform a substantial portion of the corrective surgical procedures for the following conditions: animal and human bites, carpal tunnel syndrome, cubital tunnel syndrome, de Quervain’s tendonitis, dorsal and volar ganglia of the hand and wrist, drainage of fingertip and hand deep space infections, extensor tendon injuries, fingertip injuries and amputations (initial stabilization and wound care), flexor tenosynovitis (purulent), mallet finger, phalangeal and metacarpal fractures (extra-articular), tendonitis, trigger finger.
- Demonstrate facility in the application of a brachial or forearm 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.
- Manage the basic postoperative hand patient and inpatients with hand conditions including presenting the patients during rounds with the faculty/consultant.
- Demonstrate knowledge of the basics of postoperative hand therapy and be able to generate appropriate orders for hand therapy and splinting.
- 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.
- Demonstrate ability to practice culturally competent medicine.

Medical Knowledge

Goals
The junior hand resident will obtain specific knowledge in problems related to upper extremity injuries. This is through the use of clinical materials, biomedical research data, and didactic learning. The junior hand resident will apply this knowledge to patient care.

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

- Develop and discuss a differential diagnosis of hand and upper extremity conditions based on physical exam and history obtained from patient.
- Demonstrate a working knowledge of the presentation and radiographic findings of common hand and upper extremity conditions.
- Demonstrate knowledge of complete history and physical exam results for patients on whom surgical treatment is being considered.
- Demonstrate knowledge of the indications for basic surgical procedures in hand surgery conditions as listed above.
- Demonstrate knowledge of non-operative treatment and initial management of the above conditions (anti-inflammatory, hand therapy, application of modalities as appropriate based on scientific evidence, basic splinting).
- Demonstrate an understanding of simple invasive procedures for patients suffering from hand related complaints as listed such as injections, anesthetic blocks, suture repair of nail bed injuries and lacerations, closed reductions.
- Demonstrate basic understanding of the classic and contemporary literature pertaining to surgery of the hand and upper extremity.
- Demonstrate knowledge of the basics of postoperative hand therapy.
Practice-based Learning and Improvement

Goals

The junior hand resident will appraise and assimilate scientific evidence for the care of the upper extremity patient. This involves investigation and evaluation of patient care.

Objectives

- Demonstrate familiarity and understanding of reading materials describing the diagnosis and treatment of carpal tunnel, trigger finger, tendinitis and thumb base arthritis.
- Accurately locate, appraise and assimilate evidence from scientific studies relating to the patient’s hand 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, American and British Journal of Hand Surgery, and the Journal of the American Academy of Orthopaedic Surgeons.
- Demonstrate facility at using on-line search engines, such as MEDLINE, to locate and access appropriate educational materials and peer review reference articles relevant to patient care.
- Successfully maintain a record of all operative cases via the resident operative log via the ACGME web site.
- Facilitate the learning of 3rd and 4th year medical students and other health care professionals.
- Self-evaluation of performance should include the ability to analyze the effectiveness of his/her own interpretative, problem solving, and surgical skills.
- Search, retrieve, and interpret peer reviewed medical literature relevant to hand diseases and disorders.
- Apply study and case report conclusions to the care of individual patients.
- 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.

Interpersonal and Communication Skills

Goals

The junior hand resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives

- Demonstrate communication skills that result in an effective information exchange with patients, their families and caregivers, and other physicians and members of the health care team.
- Create and sustain a therapeutic and ethically sound relationship with patients and their families.
- Effectively use listening skills in communication with all parties involved in patient care.
- Effectively provide information via various methods – Confidence and effectiveness in transmitting information verbally and written.
- Effectively work with other members of the team, specifically medical assistants, chief residents, and hand therapists.
- Present at conferences, to other physicians, and mentors both formally and informally effectively and succinctly.

**Professionalism**

**Goals**

The junior hand resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

**Objectives**

- **Patient primacy:** trainees are expected to 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 outlined 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 nonsurgical care of the patient’s condition, giving equitable care to all patients, treating all patients with respect regardless of race, gender and socioeconomic background.

- **Physician accountability and responsibility:** follow through on duties and clinical tasks. Demonstrate timeliness in required activities, in completing medical records and in responding to patient and colleague calls. Exhibit regular attendance and active participation in hand surgery service and orthopaedic departmental training activities and scholarly endeavors. Strive for excellence in care and or scholarly activities as an orthopaedic surgeon and hand surgeon. Work to maintain personal physical and emotional health and demonstrate an understanding of and ability to recognize physician impairment in self and colleagues. Demonstrate sensitivity to the culture, age, gender and disabilities of fellow health care professionals and be respectful of the opinions of other healthcare professionals.

- **Humanistic qualities and altruism:** exhibits empathy and compassion in patient/physician interactions, sensitive to patient needs for comfort and encouragement, courteous and respectful in interactions with patients, staff and colleagues, maintains the welfare of their patients as their primary professional concern.

- **Ethical behavior including being trustworthy and cognizant of conflicts of interest:** Maintaining integrity as a physician orthopaedic surgeon and hand surgeon pervades all of the components of professionalism. Demonstrate integrity when reporting back key clinical findings to supervising physicians. Be trustworthy in following through on clinical questions, laboratory results and other patient care responsibilities. Recognize and address actual and potential conflicts of interest including orthopaedic device industry and pharmaceutical industry involvement in their medical education and program funding and guard against this influencing their current and future treatment recommendation habits.
Systems-based Practice

Goals
The junior hand resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the junior hand resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Demonstrate an understanding of how their patient care and other professional practices affect other health care professionals and the health care organization. Specifically, the identification of a proper site before surgery and a confirmation of the operative procedure to be done with the chief resident in the preoperative holding area are crucial in the duties of the junior resident.
- Successfully teams with the chief resident to ensure that all radiographic and clinical notes are available preoperatively and intraoperatively.
- Demonstrate the ability to partner with other members of the health care team to assess and coordinate the patient’s health care. For example, within the context of hand surgery, the resident should demonstrate the ability to interact in the most efficient manner with hand therapists, such that no time is lost in the provision of appropriate hand therapy after injury or surgery.
- Partners – Demonstrate the ability to utilize multiple providers and resources as needed for optimal patient care. Understand the hand surgeon’s role as well as when to consult other health professionals (physiatrist, nurse practitioner, visiting nurse, physical therapist, occupational therapist, podiatrist, social worker, vocational rehabilitation counselor, psychologist, others) in the outpatient and inpatient rehabilitation of patient with a hand disease or disorder.
- Demonstrate the ability to educate patients about outside resources, which might be of assistance to their physical, emotional and financial well being.
- Knowledge of the advantages and disadvantages of different health care systems that affect patients with hand diseases and disorders, which include the academic system, various private and public health care delivery systems, the governmental, volunteer and private agencies that are available to educate and assist patients, the bureaucracy faced by disabled patients negotiating these systems and the social and economic burden of hand and orthopaedic diseases and disorders.
- Advocacy for the patient: demonstrate the ability to act as effective advocates for their patients in a variety of needs, such as dealing with insurance companies and HMOs for the preauthorization of medications, filing disability claims, preparing for postoperative rehabilitation, return to work issues, etc.
- Cost effective health care: utilization of appropriate, cost-effective diagnostic tests and antibiotics. Knowledge of the range of implants and devices needed in rendering hand surgical care as well as the associated costs. Knowledge of the availability of certain drugs (and unavailability of others) on the trainee’s hospital formulary, and knowledge of the mechanisms by which compensation (by CMS and other carriers) is dependent upon the delivery of various levels of service to patients and the methods in place for quality review of inpatient and outpatient practice patterns. Knowledge of the local costs of medications, durable medical equipment, e.g., splints they prescribe, imaging and lab tests they order and costs related to surgical equipment,
devices, and implants. Demonstrate a commitment to the practice of appropriate evidence based cost conscious patient care.

- Systems: demonstrate knowledge about how different health care delivery systems affect the management of patients with hand and orthopaedic diseases and disorders. Be familiar with types of practice management, equipment, insurance, economics, personnel, ethical aspects, quality assurance, and managed care issues relating to the practice of hand surgery and orthopaedic surgery. Identify the strengths and weaknesses of the system in which they are training and practicing. Demonstrate the ability to develop strategies to overcome systematic problems they have identifies, and or QI projects to improve it. Be familiar with the history of orthopaedic and hand surgical history. Understand the influence on hand surgery and orthopaedic surgery by the American Society for Surgery of the Hand, the American Academy of Orthopaedic Surgeons, the American Medical Association, food and Drug Administration, HCFA and other governmental agencies involved in health care legislation, peer review organizations.
JUNIOR FOOT & ANKLE ROTATION

Overall Goal
To provide a foot and ankle program dedicated to the superior care of the patient with foot and ankle pathologies, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with foot and ankle pathologies and total commitment to returning people to useful life.

Patient Care

Goals
The Junior Foot & Ankle resident will effectively develop the initial patient care and clinical skills to facilitate adequate evaluation of common Foot and Ankle conditions seen in adolescent and adult patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Able to effectively develop the initial patient care and clinical skills to facilitate adequate evaluation of common Foot and Ankle conditions seen in adolescents and adult patients.
- Demonstrates clinical skills that include:
  - will demonstrate the ability to perform and document an effective patient interview
  - will demonstrate the ability to perform and document an accurate physical examination
  - will demonstrate the ability to order the appropriate x-rays (if indicated) to evaluate the presenting complaint(s)
    - know when weightbearing x-rays of the foot/ankle are indicated
    - know when advanced imaging of the foot/ankle is indicated
  - will demonstrate the ability to provide a basic interpretation of the images
  - will demonstrate the ability to analyze their findings to form a clinical impression for the cause of the presenting complaint(s)
  - will demonstrate the ability to formulate a basic plan of care
    - medications, physical therapy, orthotics, braces, casts, splints
    - formulate a basic operative plan containing the indicated surgical procedures
- Demonstrate procedural and surgical skills with supervision appropriate to the level of training that include:
  - will demonstrate the ability to perform the common procedures for outpatients and in-house consult, such as joint aspiration/injection
  - will demonstrate the ability to perform basic surgical skills
    - positioning, draping, basic exposure
    - know the steps of the procedure
    - proper postoperative dressing/splinting
- Demonstrate ability to manage inpatients:
□ will demonstrate the ability to provide postoperative inpatient care for foot and ankle patients after surgery including pain management and management of medical comorbidities
□ will demonstrate ability to develop and implement a management plans and initiate strategies including appropriate consultation with the supervising physician

Medical Knowledge

Goals
The Junior Foot and Ankle resident will obtain specific knowledge in problems related to foot and ankle pathology. This is through the use of clinical materials, biomedical research data, and didactic learning. The resident will apply this knowledge to patient care.

Objectives
- will be able to answer questions appropriate to their level of training in anatomy, physiology, biomechanics, and disease-specific facts through ongoing reading
- will demonstrate a willingness and ability to acquire new information
- attends and participates in the weekly Indications Conference.

Practice-based Learning and Improvement

Goals
The Junior Foot and Ankle resident will recognize gaps in knowledge and experience, use constructive criticism to improve, and apply scientific knowledge in daily duties.

Objectives
- Able to locate, appraise and assimilate evidence from scientific studies related to patients’ health issues.
- Able to obtain and use information about his/her patient population and the larger population from which patients are drawn.
- Able to apply knowledge of study designs and statistical methods to the appraisal of clinical studies.
- Able to use information technology to manage information, access on-line medical information and support his/her own education.
- Able to facilitate the learning of medical students on the Foot and Ankle service and other health care professionals on an informal basis in clinics, operating rooms and conferences.
- Ability to critically evaluate literature regarding Foot and Ankle conditions
- Ability to analyze the circumstances surrounding a complication and to formulate an improvement plan to improve future care.
Interpersonal and Communication Skills

Goals
The junior resident communicates effectively with patients, their families, professional colleagues and the allied health staff to work effectively as a member of a treatment team. They are able to interact with the leader and understand the challenges of being a leader of a treatment team.

Objectives
- Creates and sustains a therapeutic and ethically sound relationship with patients and their families, and provides education regarding the patient’s condition and the treatment plan
- Able to effectively communicate information via various methods
- Able to work effectively with other members of the health care team
- Provides necessary reporting to more senior residents, fellows and attending staff to ensure good patient care
- Demonstrates good listening skills and presents information in a clear and concise manner highlighting salient features
- Respond to patient phone calls and communication from allied health professionals

Professionalism

Goals
The junior resident will demonstrate high standards of ethical and moral behavior, honesty and integrity, compassion and empathy, reliability and responsibility in his/her daily activities as a member of the Orthopaedic Surgery Residency Program, and also demonstrate sensitivity to patients of diverse backgrounds.

Objectives
- Maintains the strictest confidence in any and all interactions dealing with all patients
- Demonstrates respect, compassion and integrity in response to the needs of patients and their families.
- Demonstrates ethical principles pertaining to patient confidentiality issues.
- Demonstrates sensitivity to the culture, age, gender and disabilities of patients and fellow health care professionals.
- Demonstrates awareness of limitations (seeks advice/assistance when appropriate)
Systems-based Practice

Goals
The junior resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the junior resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Demonstrates knowledge of treatment plans and their impact on cost-effectiveness and efficiency of patient care.
- Acts as an advocate for quality of patient care.
- Able to assess, coordinate and improve the care of patients within the current health care model(s) or systems in the program [OT, PT and Rehab].
- Able to work with other health care professionals from various disciplines to provide excellent patient-focused care
- Completes all requirements for compliance, risk management, and safety education
JUNIOR ARMC ROTATION

Overall Goal
To provide a county service program dedicated to the superior care of the orthopaedic patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with orthopaedic injuries and total commitment to returning people to useful life.

Patient Care

Goals
The junior ARMC resident will experience inpatient, outpatient, and surgical care of orthopaedic patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families regarding general orthopaedic, trauma, and medical issues.
- Gather essential and accurate information about their patients.
- With careful supervision, make informed decisions about diagnostic and therapeutic interventions based on patient information and attending guidance.
- Develop confidence in performing orthopaedic operations.
- Counsel and educate patients and their families regarding orthopaedic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology, such as electronic radiographic archiving, to support patient care decisions and patient education.
- Under appropriate supervision, perform competently all medical and invasive procedures considered essential to orthopaedic surgery.
- Work with health care professionals, including those from other disciplines, to provide patient-focused care.

Medical Knowledge

Goals
The junior ARMC resident will obtain specific knowledge in problems related to orthopaedics. This is through the use of clinical materials, biomedical research data, and didactic learning. The junior ARMC resident will apply this knowledge to patient care.
Objectives
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty and on in-training examination performance.
- Know and apply basic and fundamental medical knowledge to orthopaedic surgery.
  □ Simple and complex fractures
  □ Open fractures
  □ Musculoskeletal infections
  □ Lacerations
  □ Neurologic disorders
  □ Circulatory disorders
  □ Fingertip injuries
  □ Pain, inflammation, and overuse
  □ Rotator cuff and impingement
  □ Lateral epicondylitis
  □ DeQuervain’s tenosynovitis
  □ Trigger finger

Practice-based Learning and Improvement

Goals
The junior ARMC resident will appraise and assimilate scientific evidence for the care of the orthopaedic patient. This involves investigation and evaluation of patient care.

Objectives
- Locate, appraise, and assimilate evidence from standard orthopaedic textbooks to improve the patient’s care.
- Use information technology to manage information, access on-line medical information, and support their own education.
- Facilitate the learning of students and other health care professionals.

Interpersonal and Communication Skills

Goals
The junior ARMC resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member of a healthcare team.
Professionalism

Goals
The junior ARMC resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical and orthopaedic needs of patients and society that supersedes self-interest, regardless of patients’ socioeconomic status; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, socioeconomic status, and disabilities that may have resulted from musculoskeletal injury.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

Systems-based Practice

Goals
The junior ARMC resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the junior ARMC resident will effectively call on other resources in the system to provide optimal health care. The commitment at ARMC is to practice the same philosophy as LLUMC, which is “To Make Man Whole.”

Objectives
- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Advocate for quality patient care and assist patients in dealing with system complexities, which includes obtaining appropriate diagnostic studies, assuring adequate follow-up care, and arranging ancillary services, such as therapy and prosthetics.
- Understand the role of a county medical system in the delivery of healthcare.
- Know how to partner with health care managers and other healthcare providers to assess, coordinate, and improve health care and know how these activities can affect system performance.
JUNIOR PEDIATRIC ORTHOPAEDICS ROTATION

Overall Goal
To provide a pediatric service program dedicated to the superior care of the skeletally immature patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of pediatric patients and total commitment to returning people to useful life.

Patient Care

Goals
The junior pediatric resident will experience inpatient, outpatient, and surgical care of pediatric patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Interact in a caring and respectful manner with patients and families while obtaining necessary history and physical information.
- Develop and present basic treatment plans for pediatric orthopaedic conditions utilizing all available and appropriate technology and information.
- Implement treatment plans, both operative and non operative, with appropriate supervision of clinical faculty.
- Perform less complex pediatric orthopaedic invasive procedures with faculty support and supervision.
- Assist other health care professionals within the BJC system and provide patient-oriented care.

Medical Knowledge

Goals
The junior pediatric resident will obtain specific knowledge in problems related to pediatric orthopaedics. This is through the use of clinical materials, biomedical research data, and didactic learning. The pediatric resident will apply this knowledge to patient care.

Objectives
- Perform a complete pediatric orthopaedic history and physical assessment for the infant, toddler, child and adolescent.
- Describe the mechanism of injury of common pediatric fractures (torus fracture, distal radius, forearm, tibia, elbow and distal tibia) and their management.
- Describe the characteristics of fractures secondary to child abuse, and the management of a child with a fracture suspected of being a result of abuse.
- Discuss the assessment of patients with scoliosis presenting at different ages and the role of brace management.

Practice-based Learning and Improvement

Goals
The junior pediatric resident will appraise and assimilate scientific evidence for the care of the pediatric patient. This involves investigation and evaluation of patient care.

Objectives
- Utilize the available literature on specific pediatric orthopaedic topics as part of the decision-making process prior to the formation of treatment plans.
- Participate in pediatric orthopaedic preoperative and postoperative conferences with knowledge of the basic historical studies and data regarding specific topics.
- Assist with the teaching of medical and nursing students within the pediatric orthopaedic clinic and while providing in-hospital care.

Interpersonal and Communication Skills

Goals
The junior pediatric resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Develop effective listening skills, when working with patients, families and other members of the healthcare team that will maximize diagnosis and management of pediatric orthopaedic patients.

Professionalism

Goals
The junior pediatric resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.
Objectives
- Demonstrate, by his/her behavior in the clinic, operating room, and on the floor, respect for patients, families and other health care professionals.

Systems-based Practice

Goals
The junior pediatric resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the junior pediatric resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Be aware of the potential difficulties after hospitalization for pediatric orthopaedic patients and families due to economic factors and availability of services.
- Work in conjunction with faculty, nursing and discharge planners to ensure necessary home care, therapy, and other orthopaedic needs.
JUNIOR VAH ROTATION

Overall Goal
To provide a VA service program dedicated to the superior care of the veteran, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of the veteran and total commitment to returning people to useful life.

Patient Care

Goals
The junior VA resident will experience inpatient, outpatient, and surgical care of veterans under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families regarding general orthopaedic, trauma, and medical issues.
- Gather essential and accurate information about their patients.
- With careful supervision, make informed decisions about diagnostic and therapeutic interventions based on patient information and attending guidance.
- Suggest patient management plans.
- Counsel and educate patients and their families regarding orthopaedic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology, such as electronic medical records and electronic radiographic retrieval systems, to support patient care decisions and patient education.
- Under appropriate supervision, perform competently all medical and invasive procedures considered essential for the area of practice.
- Work with health care professionals, including those from other disciplines, to provide patient-focused care.

Medical Knowledge

Goals
The junior VA resident will obtain specific knowledge in problems related to veterans. This is through the use of clinical materials, biomedical research data, and didactic learning. The VA resident will apply this knowledge to patient care.
Objectives
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty and on in-training examination performance.
- Know and apply basic and fundamental medical knowledge to orthopaedic surgery.
- Teach junior residents and students regarding the care of veterans, including methods of patient assessment and the use of medical knowledge in clinical decision making.

Practice-based Learning and Improvement

Goals
The junior VA resident will appraise and assimilate scientific evidence for the care of the veteran. This involves investigation and evaluation of patient care.

Objectives
- Locate, appraise, and assimilate evidence from standard orthopaedic textbooks to improve the patient’s care.
- Use information technology to manage information, access on-line medical information, and support their own education.
- Facilitate the learning of students and other health care professionals.

Interpersonal and Communication Skills

Goals
The junior VA resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member of a healthcare team.

Professionalism

Goals
The junior VA resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.
Objectives
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical and orthopaedic needs of patients and society that supersedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, disabilities that may have resulted from musculoskeletal injury, and combat background.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

Systems-based Practice

Goals
The junior VA resident will demonstrate an awareness of and responsiveness to the larger context and system of governmental health care. Furthermore, the junior VA resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Advocate for quality patient care and assist patients in dealing with the veterans administration system.
- Understand the opportunities and constraints offered and posed by the veterans administration system.
- Know how to partner with health care managers and other healthcare providers to assess, coordinate, and improve health care and know how these activities can affect system performance.
INTERNATIONAL PEDIATRIC AND LIMB DEFORMITY ROTATION

Condition
At the resident’s request, the International Pediatric and Limb Deformity Rotation may be selected in lieu of either: 1) the Senior Pediatric Orthopaedic Surgery Rotation or 2) the Basic Science Rotation. In order to participate in the International Pediatric and Limb Deformity Rotation during the Basic Science Rotation, the resident must have either: 1) already fulfilled his Residency Research Requirement or 2) have all data collection completed with the manuscript in process before the start of the International Rotation.

Overall Goal
The international pediatric resident will be responsible for inpatient, outpatient, and surgical care of pediatric patients under staff supervision. The resident will be expected to be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families in a cross culture environment.
- Gather essential and accurate information about their patients.
- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date orthopaedic scientific evidence, and clinical judgment.
- Develop, supervise, and carry out patient management plans.
- Counsel and educate patients and their families regarding orthopaedic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology to support patient care decisions and patient education.
- Develop an understanding of surgical procedures considered essential in pediatric orthopaedics.
- Work with health care professionals, including those from other disciplines, to provide patient-focused care.
- Develop a worldwide perspective on patient needs and delivery of quality health care in a limited resource environment.
Medical Knowledge

Goals
The international pediatric resident will obtain knowledge related to pediatric orthopaedics. This is through clinical learning, didactics, and self study.

Objectives
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty.
- Understand the unique situations posed by the pediatric patient.
- Use information technology and orthopaedic library materials to obtain data pertinent to surgical indications, techniques, patient care and didactics.
- Active participation in didactic conferences.

Suggested Reading
- General
  □ Abel MF. Orthopaedic Knowledge Update: Pediatrics 3  AAOS, Rosemont, IL 2006
  □ Spiegel DA, Bibliography of Orthopaedic Problems in Developing Countries with Commentary  www.global-help.org
- Trauma
- Infection
- **Deformity**

- **Foot**

- **Polio**
- Hip

- Spine

- Hand
Practice-based Learning and Improvement

Goals
The international pediatric resident will appraise and assimilate scientific evidence for the care of the pediatric patient. The resident will gain hands on experience in the operating room as well as the inpatient and outpatient areas while being supervised by a staff physician.

Objectives
- Locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems.
- Obtain and use information about their own population of patients and the larger population from which their patients are drawn.
- Use information technology to manage information, access on-line medical information, and support their own education, as well as assist in the education of others.
- Facilitate the learning of students, junior residents, and other health care professionals.
- Benefit from an international exchange with other residents rotating at the hospital who are in training programs outside of the United States.
- Gain experience with neglected and mistreated disease processes rarely encountered in a modern health care system.

Interpersonal and Communication Skills

Goals
The international pediatric resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Interpersonal and cross cultural communication skills will be modeled by the faculty.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients and their parents/caretakers.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member or leader of a healthcare team or other professional group.
- Develop a sense of social responsibility to those with limited resources.

**Professionalism**

**Goals**

The international pediatric resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

**Objectives**

- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical and orthopaedic needs of patients, their parents/caretakers, and society that supersedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ and parents’/caretakers’ culture, age, gender, developmental differences, and disabilities.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

**Systems-based Practice**

**Goals**

The international pediatric resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the international pediatric resident will effectively call on other resources in the system to provide optimal health care.

**Objectives**

- Understand how their patient care and other professional practices affect other healthcare professionals, the healthcare organization, and the larger society and how these elements of the system affect their own practice.
- Know how an international healthcare system differs from those in the United States, including methods of controlling healthcare costs and allocating resources.
- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Understand the differences in the financial and regulatory aspects of healthcare, including coding, billing, and compliance in a domestic and international setting.
- Experience administrative and political factors involved in operating an international academic health care institution.
**BASIC SCIENCE ROTATION**

**Overall Goal**

To provide a basic science program dedicated to fostering knowledge in the basic sciences while teaching the skills necessary to critically read the medical literature as it pertains to orthopaedic surgery.

**Medical Knowledge**

**Goals**

The basic science resident will obtain specific knowledge relating to the critique of orthopaedic literature. This is through the use of biomedical research data, didactic learning, and involvement in research methods.

**Objectives**

- Demonstrate an investigatory and analytic thinking approach to clinical situations.
- Know and apply the basic sciences to orthopaedic surgery.

**Practice-based Learning and Improvement**

**Goals**

The basic science resident will appraise and assimilate basic science evidence as it relates to orthopaedic surgery. The basic science resident will also assist other residents by coordinating didactic activities under the supervision of faculty.

**Objectives**

- Locate, appraise, and assimilate evidence from basic science studies related to orthopaedic surgery.
- Apply knowledge of study designs and statistical methods to the appraisal of clinical and basic science studies and other information on diagnostic and therapeutic effectiveness.
- Use information technology to manage information, access on-line medical information, and support their own education.
- Coordinate didactic teaching activities under the supervision of orthopaedic faculty.
Professionalism

Goals
The basic science resident will carry out professional responsibilities, adhere to ethical principles in conducting research, and demonstrate sensitivity to faculty and staff.

Objectives
- Demonstrate ethical responsibility and integrity in conducting research.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.
- Demonstrate respect in the interactions with faculty and staff mentors.
- Demonstrate administrative skills through coordinating basic science and other educational activities for the department.

Systems-based Practice

Goals
The basic science resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the basic science resident will effectively call on other resources in the system to facilitate research activities.

Objectives
- Understand how research affects healthcare, how healthcare drives research, and how societal pressures change the practice of research.
- Know how to partner with applicable research organizations within the healthcare system, such as the Institutional Review Board and the Institutional Animal Care and Use Committee, as applicable.
RESEARCH ROTATION

Overall Goal
To provide a research program dedicated to fostering creative and analytical thinking while teaching the skills necessary to critically read the medical literature as it pertains to orthopaedic surgery.

Medical Knowledge

Goals
The research resident will obtain specific knowledge relating to the critique of orthopaedic literature. This is through the use of biomedical research data, didactic learning, and involvement in research methods.

Objectives
- Demonstrate an investigatory and analytic thinking approach to clinical situations.
- Know and apply the basic and clinically supportive sciences which are appropriate to orthopaedic surgery.
- Understand the different types of evidence in the medical literature.
- Learn to apply medical knowledge in an evidence-based practice of orthopaedic surgery.

Practice-based Learning and Improvement

Goals
The research resident will appraise and assimilate scientific evidence as it relates to orthopaedic surgery.

Objectives
- Locate, appraise, and assimilate evidence from scientific studies related to orthopaedic surgery.
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness.
- Use information technology to manage information, access on-line medical information, and support their own education.
Professionalism

Goals
The research resident will carry out professional responsibilities, adhere to ethical principles in research, and demonstrate sensitivity to faculty and staff.

Objectives
- Demonstrate ethical responsibility and integrity in conducting research.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.
- Demonstrate respect in the interactions with faculty and staff mentors.
- When involved in human studies, demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- When involved in human studies, demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities.

Systems-based Practice

Goals
The research resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the research resident will effectively call on other resources in the system to facilitate research activities.

Objectives
- Understand how research affects healthcare, how healthcare drives research, and how societal pressures change the practice of research.
- Know how to partner with applicable research organizations within the healthcare system, such as the Institutional Review Board and the Institutional Animal Care and Use Committee, as applicable.
SENIOR VAH ROTATION

Overall Goal
To provide a V.A. service program dedicated to the superior care of the veteran, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of the veteran and total commitment to returning people to useful life.

Patient Care

Goals
The senior VA resident will experience inpatient, outpatient, and surgical care of veterans under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families regarding general orthopaedic, trauma, and medical issues.
- Gather essential and accurate information about their patients.
- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date orthopaedic scientific evidence, and clinical judgment.
- Develop, supervise, and carry out patient management plans.
- Counsel and educate patients and their families regarding orthopaedic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology, such as electronic medical records and electronic radiographic retrieval systems, as provided by the veterans administration system to support patient care decisions and patient education.
- Perform competently all medical and invasive procedures considered essential to orthopaedic surgery.
- Supervise junior residents, under the direction of faculty and chief resident, in the administration of patient care in the VA setting.
- Work with health care professionals, including those from other disciplines, to provide patient-focused care.

Medical Knowledge

Goals
The senior VA resident will obtain specific knowledge in problems related to veterans. This is through the use of clinical materials, biomedical research data, and didactic learning. The senior
VA resident will apply this knowledge to patient care and will actively teach junior residents and students.

**Objectives**
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty and on in-training examination performance.
- Know and apply the basic and clinically supportive sciences which are appropriate to orthopaedic surgery in the veterans administration setting.
- Teach junior residents and students regarding the care of veterans, including methods of patient assessment and the use of medical knowledge in clinical decision making.

**Practice-based Learning and Improvement**

**Goals**
The senior VA resident will appraise and assimilate scientific evidence for the care of the veteran. This involves investigation and evaluation of patient care.

**Objectives**
- Analyze practice experience and perform practice-based improvement activities using a systematic methodology.
- Locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems.
- Obtain and use information about their own population of patients and the larger population from which their patients are drawn.
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness.
- Use information technology to manage information, access on-line medical information, and support their own education, as well as assist in the education of others.
- Facilitate the learning of students, junior residents, and other health care professionals.

**Interpersonal and Communication Skills**

**Goals**
The senior VA resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

**Objectives**
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member or leader of a healthcare team or other professional group.

Professionalism

Goals
The senior VA resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical and orthopaedic needs of patients and society that supersedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, disabilities that may have resulted from musculoskeletal injury, and combat background.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

Systems-based Practice

Goals
The senior VA resident will demonstrate an awareness of and responsiveness to the larger context and system of governmental health care. Furthermore, the senior VA resident will assist the chief resident and effectively call on other resources in the system to provide optimal health care.

Objectives
- Understand how their patient care and other professional practices affect other healthcare professionals, the healthcare organization, and the larger society and how these elements of the system affect their own practice.
- Know how the VA system differs from other healthcare systems, including methods of controlling healthcare costs and allocating resources.
- Advocate for quality patient care and assist patients in dealing with the veterans administration system, which includes obtaining appropriate diagnostic studies, assuring adequate follow-up care, and arranging ancillary services, such as therapy and prosthetics.
- Understand the opportunities and constraints offered and posed by the veterans administration system.
- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Advocate for quality patient care and assist patients in dealing with the veterans administration system.
- Know how to partner with health care managers and other healthcare providers to assess, coordinate, and improve health care and know how these activities can affect system performance.
**SENIOR ARMC ROTATION**

**Overall Goal**
To provide a county service program dedicated to the superior care of the orthopaedic patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with orthopaedic injuries and total commitment to returning people to useful life.

**Patient Care**

**Goals**
The senior ARMC resident will experience inpatient, outpatient, and surgical care of orthopaedic patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

**Objectives**
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families regarding general orthopaedic, trauma, and medical issues.
- Gather essential and accurate information about their patients.
- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date orthopaedic scientific evidence, and clinical judgment.
- Develop, supervise, and carry out patient management plans.
- Counsel and educate patients and their families regarding orthopaedic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology as provided by the county system, such as electronic radiographic archiving, to support patient care decisions and patient education.
- Perform competently all medical and invasive procedures considered essential to orthopaedic surgery.
- Supervise junior residents, under the direction of faculty, in the administration of patient care in the county setting.
- Work with health care professionals, including those from other disciplines, to provide patient-focused care.

**Medical Knowledge**

**Goals**
The senior ARMC resident will obtain specific knowledge in problems related to orthopaedic patients. This is through the use of clinical materials, biomedical research data, and didactic
learning. The senior ARMC resident will apply this knowledge to patient care and will actively teach junior residents and students.

Objectives
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty and on in-training examination performance.
- Know and apply the basic and clinically supportive sciences which are appropriate to orthopaedic surgery in the county medical delivery setting.
  - Simple and complex fractures
  - Open fractures
  - Musculoskeletal infections
  - Lacerations
  - Neurologic disorders
  - Circulatory disorders
  - Fingertip injuries
  - Pain, inflammation, and overuse
  - Rotator cuff and impingement
  - Lateral epicondylitis
  - DeQuervain’s tenosynovitis
  - Trigger finger
  - Spine injuries
  - Pelvis and acetabulum fractures
- Teach junior residents and students regarding the care of orthopaedic patients, including methods of patient assessment and the use of medical knowledge in clinical decision making.

Practice-based Learning and Improvement

Goals
The senior ARMC resident will appraise and assimilate scientific evidence for the care of the orthopaedic patient. This involves investigation and evaluation of patient care.

Objectives
- Analyze practice experience and perform practice-based improvement activities using a systematic methodology.
- Locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems.
- Obtain and use information about their own population of patients and the larger population from which their patients are drawn.
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness.
- Use information technology to manage information, access on-line medical information, and support their own education, as well as assist in the education of others.
- Facilitate the learning of students, junior residents, and other health care professionals.
Interpersonal and Communication Skills

Goals
The senior ARMC resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member or leader of a healthcare team or other professional group.

Professionalism

Goals
The senior ARMC resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical and orthopaedic needs of patients and society that supersedes self-interest, regardless of patients’ socioeconomic status; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, disabilities that may have resulted from musculoskeletal injury, and socioeconomic status.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

Systems-based Practice

Goals
The senior ARMC resident will demonstrate an awareness of and responsiveness to the larger context and system of governmental health care. Furthermore, the senior ARMC resident will effectively call on other resources in the system to provide optimal health care. The commitment at ARMC is to practice the same philosophy as LLUMC, which is “To Make Man Whole.”
Objectives

- Understand how their patient care and other professional practices affect other healthcare professionals, the healthcare organization, and the larger society and how these elements of the system affect their own practice.

- Know how the county healthcare system differs from university, private practice, and VA systems, including methods of controlling healthcare costs and allocating resources.

- Advocate for quality patient care and assist patients in dealing with the county healthcare system, which includes obtaining appropriate diagnostic studies, assuring adequate follow-up care, and arranging ancillary services, such as therapy and prosthetics.

- Understand the opportunities and constraints offered and posed by the county healthcare system.

- Practice cost-effective health care and resources allocation that does not compromise quality of care.

- Advocate for quality patient care and assist patients in dealing with system complexities.

- Know how to partner with health care managers and other healthcare providers to assess, coordinate, and improve health care and know how these activities can affect system performance.
SENIOR PEDIATRIC ORTHOPAEDICS ROTATION

Overall Goal
To provide a positive learning experience in which established residents can expand their exposure to common and rare conditions encountered by this subspecialty, increase their knowledge base about these problems, further develop clinical judgment and surgical and skills, and gain confidence in managing the social and emotional needs of our patients.

Patient Care

Goals
The senior pediatric resident will experience inpatient, outpatient, and surgical care of pediatric patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Interact in a caring and respectful manner with patients and families while taking necessary histories and physical information in the clinic and in the hospital setting.
- Develop and present treatment plans for pediatric orthopaedic conditions utilizing all available and appropriate technology and information.
- Implement treatment plans, both operative and non-operative, with the appropriate supervision of clinical faculty.
- Perform more complicated pediatric orthopaedic invasive procedures with faculty support and supervision.
- Demonstrate technical ability in the treatment of, but not limited to, supracondylar fractures of the humerus, forearm, femoral and tibial fractures, stable and unstable sub capital femoral epiphysis (SCFE).

Medical Knowledge

Goals
The senior pediatric resident will obtain specific knowledge in problems related to pediatric orthopaedics. This is through the use of clinical materials, biomedical research data, and didactic learning. The senior pediatric resident will apply this knowledge to patient care and will actively teach junior residents and students.

Objectives
- Familiarity and satisfaction of POSNA pediatric orthopaedic objectives.
- Discuss and participate in the management of both common and unusual pediatric fractures.
Practice-based Learning and Improvement

Goals
The senior pediatric resident will appraise and assimilate scientific evidence for the care of the pediatric patient. This involves investigation and evaluation of patient care.

Objectives
- Utilize the available literature specific to pediatric orthopaedic topics as part of the decision-making process, prior to the formation of treatment plans;
- Participate in pediatric preoperative and postoperative conference with the knowledge of the basis and complex historical studies and data regarding specific topics;
- Assist with the teaching of medical and nursing students with in the pediatric orthopaedic clinic, and while providing in hospital care;
- Mentor residents and students in pediatric orthopedics in the cognitive, affective and psychomotor skill domain related to pediatric orthopaedics, and interact with the faculty.

Interpersonal and Communication Skills

Goals
The senior pediatric resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Develop effective listening skills, when working with patients, families, and other members of the healthcare team, that will maximize diagnosis, care and management of pediatric orthopaedic patients.

Professionalism

Goals
The senior pediatric resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Demonstrate, by his/her behavior in the clinic, operating room, and on the floor, respect for patients, families and other health care professionals.
Systems-based Practice

Goals
The senior pediatric resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the senior pediatric resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Be aware of the potential difficulties after hospitalization for pediatric orthopaedic patients and families due to economic factors and availability of services;
- Work in conjunction with faculty, nursing, discharge planners and the other resident to ensure required home care, therapy, and other orthopaedic needs.
SENIOR TRAUMA ROTATION

Overall Goal
To provide a trauma service program dedicated to the superior care of the multiply injured patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with multiple injuries and total commitment to returning people to useful life.

Patient Care

Goals
The senior trauma resident will experience inpatient, outpatient, and surgical care of multiply injured patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Surgical
  - Mastery of sterile technique, patient site preparation, patient positioning, and aseptic draping for all surgical exposures;
  - Mastery of surgical approaches for fracture care and advance understanding of complex exposures including those used for pelvic fixation;
  - Ability perform common trauma operations without dependence on attending staff, including IMN femur, IMN tibia, ORIF of the ankle, forearm, elbow, & humerus, hip hemiarthroplasty, ORIF of the lateral tibial plateau, shoulder hemiarthroplasty and application of external fixators;
  - Understanding of and participation in complex trauma operations with direct attending guidance incuding ORIF pilon, bicondylar tibial plateau, calcaneous, talus, elbow, & LisFranc fractures;
  - Understanding of surgical techniques required to perform ORIF acetabulum/pelvis, percutaneous screw fixation of pelvic ring injuries, and osteotomies for non-union;
  - Ability to take a junior residents though a case while teaching basic surgical technique and AO principles;
  - Ability to lead a surgical team including implant & instrument selection, directing ancillary staff, and time management;
  - Ability to manage the operating room schedule to ensure timely and seamless surgical care of traumatized patients.
- Office/Emergency Department/Clinical Practice
  - Ability to assist junior residents in clinical decision making, fracture care, and system navigation;
  - Ability to teach the junior resident reduction and splinting of all fractures and dislocation;
Availability to see patients in the emergency department when the junior becomes backed-up with consultations;
- Ability to review each consultation and perform complete pre-operative evaluation of each surgical candidate including assessment of risk and potential complications;
- Ability to counsel and educate patients and families;
- Effectively use information technology to support patient care decisions and patient education.

- **Ward Management**
  - Ability to manage a team of care providers to ensure excellent inpatient hospital care with respect to the preferences of the attendings on service;
  - Ability to provide a daily plan of care for each inpatient on service and advise on the necessary steps required to implement said plan including the need to consult other services;
  - Ability to recognize and approve/refuse transfer of patient care to/from the orthopaedic service;
  - Daily review of anticoagulation, activity, and antibiotic plan for each patient.

**Medical Knowledge**

**Goals**

The senior trauma resident will obtain specific knowledge in problems related to trauma. This is through the use of clinical materials, biomedical research data, and didactic learning. The trauma resident will apply this knowledge to patient care.

**Objectives**

- Advanced knowledge of / ability to appropriately manage injured patients;
- Knowledge of appropriate indications for surgical management of common complications of traumatic orthopaedic surgical care (examples: osteotomy for varus collapse of a femoral neck fracture, IMN exchange for tibial non-union, derotation of the femur);
- Knowledge of advanced AO fracture fixation technique;
- Knowledge of the advantages / disadvantages of commonly used implants;
- Ability to generate multiple options for fracture fixation and knowledge of each method’s advantages and disadvantages;
- Sound understanding of pelvic and acetabular fractures and approaches;

**Practice-based Learning and Improvement**

**Goals**

The senior trauma resident will appraise and assimilate scientific evidence for the care of the multiply injured patient. This involves investigation and evaluation of patient care.
Objectives
- Active participation in weekly fracture conference;
- Prepares for and presents the cases at the monthly M&M conference;
- Participation in didactic conferences including journal club, Wednesday morning conference, and M&M;
- The resident has demonstrated the ability and desire to identify errors in care, management, or understanding of clinical presentations that (s)he made or observed, and to learn from them;
- The resident has demonstrated the ability and desire to self-assess his/her performance as a surgeon or assistant surgeon in the operating room;
- Locate, appraise and assimilate evidence from scientific studies related to their patients’ health problems;
- Apply knowledge of study design and statistical methods to the appraisal of clinical studies and other medical information;
- Facilitate the learning of medical students, residents and other health care professionals.

Interpersonal and Communication Skills

Goals
The senior trauma resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Ability to create and sustain therapeutic and ethically sound relationships with patients;
- Ability to maintain open conversation between team members to ensure dissemination of important information;
- Ability to effectively communicate with other services within the hospital;
- Maintain verbal and written sign-out during transition of patient care;
- Maintained appropriate daily communication with each of the faculty members regarding inpatients according to the standards of each faculty member (defined, in part, in the guide below);
- Able to communicate appropriately, clearly, and in a timely fashion any important changes in status on ER patients, inpatients and outpatients to fellow residents and attending staff;
- Effectively function as the leader of the health care team.

Professionalism

Goals
The senior trauma resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.
Objectives
- Ability to maintain an appropriately professional physical appearance;
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with patients;
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with support staff;
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with peers;
- Ability to maintain an appropriately professional demeanor towards and conduct professional relationships with faculty;
- The resident treated consulting services (including medical students, residents, and faculty on those services) and anesthesia providers with respect and dignity;
- The resident behaved consistently in an ethical fashion;
- There were no critical incidents: failures of integrity, dereliction of duty, or overt or implied sexism, racism, or cultural insensitivity.

Systems-based Practice

Goals
The senior trauma resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the senior trauma resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- The resident engaged consulting services (including non-medical consulting services, such as social services) appropriately, including calling for consults when indicated, and responding to the recommendations of consultants in a timely and effective manner;
- Demonstrated an understanding of cost effective health care delivery while maintaining high quality patient care;
- The resident ran the service in a time-efficient manner so has to optimize his/her learning, such that demands from the ER were balanced effectively against time in the OR and/or clinic;
- Participation in the clinic and the OR in an efficient and effective manner;
- Participate in the organization of the daily OR schedule.
SENIOR TUMOR ROTATION

Overall Goal

To provide a tumor service program dedicated to the superior care of the patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with musculoskeletal lesions and total commitment to returning people to a useful life.

Patient Care

Goals

The senior tumor resident will experience inpatient, outpatient, and surgical care of patients with musculoskeletal tumors under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives

- Participate in Outpatient evaluation of new and return oncology service patients;
- Demonstrate a refined and advanced patient care evaluation of patients with suspected bone and soft-tissue tumors, such as: Able to take a detailed history, complete an appropriate and accurate physical exam, and review appropriate imaging studies to allow integration of information to formulate an appropriate diagnosis and treatment plan including observation, additional imaging or operative intervention;
- Possesses advanced physical exam skills that permit the detection of distant sites of disease, familial syndromes, and other clues that assist in making a diagnosis;
- Demonstrates basic understanding of the appropriate indications for non-operative versus operative treatment. Specifically understands the role and timing of biopsy and the options regarding biopsy of a soft-tissue mass or bone lesion;
- Is familiar with common limb salvage techniques and capable of directing a biopsy site that will facilitate future limb salvage procedures;
- Possesses and is able to apply an appropriate understanding of the expected postoperative progression and rehabilitation of patients following common tumor resections, amputations and limb salvage surgeries;
- Able to recommend strategies to minimize the possibility of pathologic fracture;
- Demonstrates ability to perform incisional and percutaneous biopsies of bone and soft-tissue masses, amputations of the lower extremity and prophylactic internal fixation of lower extremity metastases independently;
- Possesses and demonstrates more advanced and refined surgical skills with faculty supervision appropriate to level of training including advanced tumor resection and reconstructive skills:
  □ Wide Resection of the Distal Femur, Proximal Femur, Proximal Tibia, proximal humerus and Distal Humerus;
  □ Endoprosthetic and allograft reconstructions of long bone defects and joints;
Prophylactic fixation of impending pathologic fractures of patients with metastatic disease;
- Curettage and grafting of benign bone lesions;
- Wide and marginal resection of soft-tissue masses;
- Manage operative complications such as infection, wound dehiscence, prosthetic dislocation, and tumor recurrence;
- Effectively oversees the appropriate care of inpatients under the supervision of the R2 junior resident;
- Attends the weekly Multidisciplinary Tumor board;
- Effectively communicates and demonstrates care and respectful behaviors when interacting with patients and families;
- Able to counsel and educate patients and their families;
- Demonstrates the ability to practice culturally competent medicine;
- Able to use information technology to support patient care decisions and patient education;
- Able to provide health care services aimed at preventing health problems or maintaining health;
- Able to work with other health care professionals from various disciplines to provide excellent patient-focused care (radiation oncology, medical oncology, radiology, pathology, rehab, OT, PT, etc);
- Communicates patient care issues to the Attending Physician.

Medical Knowledge

Goals
The senior tumor resident will obtain specific knowledge in problems related to trauma. This is through the use of clinical materials, biomedical research data, and didactic learning. The tumor resident will apply this knowledge to patient care.

Objectives
- Possesses in depth knowledge of the pathogenesis and behavior of common bone and soft-tissue tumors;
- Possesses a strong working knowledge of biopsy alternatives and techniques including common limb salvage approaches;
- Recognize incidentally noted bone and soft-tissue lesions that merit observation as opposed to intervention;
- Advanced ability to interpret the results of imaging studies in order to arrive at a narrow differential diagnosis;
- 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, metastatic disease, or myeloma;
- Demonstrates an understanding of the various surgical options to treat benign, malignant and metastatic bone and soft-tissue tumors. And to recommend a specific treatment approach including adjuvant therapy;
- Demonstrate the ability to accurately stage a patient with neoplastic disease;
- Ability to delineate those factors place a patient at risk of pathologic fracture;
- Ability to correctly make histological diagnosis for osteosarcoma, chondrosarcoma, giant cell tumor of bone, small blue cell tumors, soft tissue lipomas and soft tissue sarcomas;
- Ability to recognize and institute appropriate care for complications arising from treatment;
- Attends and participates in the weekly Multidisciplinary Tumor board and weekly subspecialty conference or journal club;
- Make recommendations regarding a treatment plan that reflects an understanding the indications and contra-indications for limb salvage surgery and the comparative effectiveness of limb salvage options and amputations;
- Ability on the basis of history, examination and laboratory findings to diagnose postoperative complications such as infection, compartment syndrome, nerve or vascular injury, deep venous thrombosis, etc.

**Practice-based Learning and Improvement**

**Goals**

The senior tumor resident will appraise and assimilate scientific evidence for patient care. This involves investigation and evaluation of patient care.

**Objectives**

- Able to locate, appraise and assimilate evidence from scientific studies related to patients’ health issues;
- Able to obtain and use information about his/her patient population and the larger population from which patients are drawn;
- Able to apply knowledge of study designs and statistical methods to the appraisal of clinical studies;
- Able to use information technology to manage information, access on-line medical information and support his/her own education;
- Able to facilitate the learning of Junior Residents as well as medical students and other learners on the Oncology service;
- Demonstrates leadership and responsibility for overseeing the appropriate care of inpatients under the supervision of the R2 junior resident;
- Efficiently and effectively interprets advanced imaging studies commonly used to evaluate patients suspected of having tumors;
- Assures that learners on the service are exposed to the breadth and depth of experience including the distribution of operative cases and procedures to ensure competency at all levels;
- Participates in the Morbidity and Mortality Conference;
- Ability to critically evaluate literature regarding patients with bone and soft-tissue tumors;
- Ability to analyze the circumstances surrounding a complication and to formulate an improvement plan to improve future care.
Interpersonal and Communication Skills

Goals
The senior tumor resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Communicates with radiology, consulting physicians and services in order to coordinate patient care effectively;
- Invites questions from patients and their families providing education regarding the patient’s condition and the treatment plan;
- Able to create and sustain a therapeutic and ethically sound relationship with patients and their families;
- Able to effective use listening skills;
- Able to effectively provide information via various methods;
- Able to work effectively with others as a member or leader of a health care team;
- Provide timely and informative communication to the supervising physician when necessary based on a change in patient condition or potential complication;
- Respond to patient phone calls and communication from allied health professionals.

Professionalism

Goals
The senior tumor resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Maintains the strictest confidence in any and all interactions dealing with all patients;
- Demonstrates respect, compassion and integrity in response to the needs of patients and their families;
- Demonstrates ethical principles pertaining to patient confidentiality issues;
- Demonstrates sensitivity to the culture, age, gender and disabilities of patients;
- Demonstrates ability to break bad news in an empathetic way that is informative and reassuring to the patient and their family;
- Maintains contact with patient and family through end of life issues as appropriate;
- Promptly recognizes and acknowledges complications that arise;
- Maintain adequate documentation and timely completion of medical records;
- Complete teaching and rotation evaluations
Systems-based Practice

Goals
The senior tumor resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the junior trauma resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Maintains the strictest confidence in any and all interactions dealing with all patients;
- Demonstrates knowledge of indications and their impact on cost-effectiveness and efficiency of patient care;
- Acts as an advocate for quality of patient care;
- Able to assess, coordinate and improve the care of patients within the current health care model(s) or systems in the program;
- Work as a effective member of a multidisciplinary team including radiologists, pathologists, medical oncologists and radiation oncologists;
- Complete all requirements for compliance, risk management, and safety education.
SENIOR SPINE ROTATION

Overall Goal
To provide a senior spine service program dedicated to the superior care of the spine patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with spinal injuries and total commitment to returning people to useful life.

Patient Care

Goals
The senior spine resident will experience inpatient, outpatient, and surgical care of spine patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Make patient treatment decisions and possess a basic understanding of indications for surgical procedures with various elective pathologies as well as non-elective pathologies;
- Possess an understanding of indications for surgical treatment of idiopathic scoliosis, congenital scoliosis, congenital kyphosis, various types of spondylolisthesis, various types of fractures, various types of tumors, and infections of the spine;
- Perform a complete musculoskeletal and neurologic examination, including the cervical spine, thoracic spine and lumbar spine, including neurologic examination of the upper and lower extremities and be able to explain pathologies such as an absent reflex or long tract signs such as positive Hoffmann or positive Babinski and/or clonus;
- Effectively participates in the decision-making process of issues on in-hospital patients;
- Display competency in performing a full office patient examination, providing a differential diagnosis and treatment plan;
- Exhibit competency in exposing the spine posteriorly, performing straightforward decompressions with Kerrison posteriorly. Display basic familiarity with placing hooks, wires and pedicle screws in the spine. Achieve proficiency with first assisting on operative procedures;
- Effectively communicate and demonstrates care and respectful behavior when interacting with patients and families;
- Demonstrate the ability to practice culturally competent medicine;
- Use information technology to support patient care decisions and patient education;
- Provide health care services aimed at preventing health problems or maintaining health;
- Work with other health care professionals from various disciplines to provide excellent patient-focused care.
Medical Knowledge

Goals
The senior spine resident will obtain specific knowledge in problems related to spinal injuries. This is through the use of clinical materials, biomedical research data, and didactic learning. The senior spine resident will apply this knowledge to patient care.

Objectives
- Present a reasonable classification system for all spinal pathologies including cervical disc herniation, lumbar disc herniation, thoracic disc herniation, spinal fractures, spinal tumors, idiopathic scoliosis, idiopathic kyphosis, congenital scoliosis, congenital kyphosis, spondylolisthesis, flaccid paralytic deformities, and spastic paralytic deformities;
- Successfully accomplish basic radiographic measurements such as coronal Cobb measurements and sagittal Cobb angles;
- Accurately define the difference between the anterior, posterior and middle columns;
- Accurately read a basic radiographic, MRI, and CT-myelogram study of the cervical, thoracic and lumbar spine.

Practice-based Learning and Improvement

Goals
The senior spine resident will appraise and assimilate scientific evidence for the care of patients with spine injuries. This involves investigation and evaluation of patient care.

Objectives
- Attends Indication Conferences and demonstrates understanding of the surgical treatment and indications for anterior surgery versus posterior surgery versus combined surgery;
- Teach and mentor the PGY-2 residents on the service;
- Locate, appraise and assimilate evidence from past and on-going scientific studies related to patient health issues;
- Obtain and use information about his/her patient population and the larger population from which patients are drawn;
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies;
- Use information technology such as OVID or MEDLINE to manage information, access on-line medical information and support his/her own education.
Interpersonal and Communication Skills

Goals
The senior spine resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients and their families;
- Effectively use listening skills;
- Effectively provide information via various methods;
- Work effectively with others as a member or leader of a health care team.

Professionalism

Goals
The senior spine resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Interact in a professional manner with inpatients, outpatients, referring physicians, orthopaedic residents, attendings and all patients in the practice;
- Interact effectively with both hospital patients and outpatients;
- Possess some competency in effectively managing hospital patients;
- Demonstrate respect, compassion and integrity in response to the needs of patients and their families;
- Demonstrate ethical principles pertaining to patient confidentiality issues;
- Demonstrate sensitivity to the culture, age, gender and disabilities of patients and fellow health care professionals.

Systems-based Practice

Goals
The senior spine resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the spine resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Demonstrate competency in coordinating all aspects of perioperative and postoperative rehabilitation and physical therapy;
- 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;
- Demonstrate knowledge of how the different types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources;
- Practice cost-effective health care and resource allocation that does not compromise quality of care;
- Demonstrate an understanding the impact of correct coding during patient office visits;
- Acts as an advocate for quality patient care and assists patients in dealing with system complexities;
- Effectively partners with health care managers and health care providers to assess, coordinate and improve health care, and know how these activities can affect system performance.
SENIOR HAND ROTATION

Overall Goal

To provide a hand service program dedicated to the superior care of the upper extremity patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with upper extremity injuries and total commitment to returning people to useful life.

Patient Care

Goals

The senior hand resident will experience inpatient, outpatient, and surgical care of upper extremity patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives

- Demonstrate mastery of all elements in the realm of patient care as described for the junior level resident;
- Demonstrate the ability and maturity to directly supervise the junior level resident;
- Effectively follows all inpatients and any patients seen in the emergency room including ensuring appropriate follow up after discharge;
- Demonstrate expertise in obtaining a history and physical examination in patients with hand and upper extremity conditions and disorders;
- Utilize information gathered in the history and exam to effectively generate a pertinent differential diagnosis, order necessary radiographic evaluations most appropriate to the differential diagnosis, and be able to formulate an appropriate treatment plan based on the information gathered.
- Evaluate, diagnose, and treat the following conditions: all condition ascribed to the junior level trainee, arthritis of the hand, boutonniere deformity, Dupuytren’s disease, flexor tendon injuries (describe suture techniques and their rationale, and perform a flexor tendon repair, and describe postoperative regimens for flexor tendon rehabilitation and their rationale), intraarticular fractures of the distal radius and ulna, malunions of the distal radius (technique and planning of a corrective osteotomy for malunions including plating and grafting options), fractures of the scaphoid, osteonecrosis of the carpus, including Kienböck’s and Preiser’s disease, complex, intraarticular fractures of the phalanges and metacarpals, fractures of the base of the thumb metacarpal (Rolando, Bennett), tumors of the hand and wrist, static carpal instability (management of scapholunate dissociation and traumatic ligamentous injuries of the wrist, perilunate dislocations); dynamic carpal instability (treatment options for SL instability, midcarpal instability), upper extremity conditions related to cerebral palsy, the “stroke hand”, treatment of radial, ulnar and combined medial-ulnar nerve paralyses including tendon transfers and indication for arthrodesis (tendon transfers for major peripheral nerve dysfunction including indications, techniques, complications, and risks), treatment of the rheumatoid hand,
including thumb MP arthrodesis, MCP interposition, wrist arthrodesis (complete and partial),
基本腕関節鏡検査（手術を行う構成要素と関連する構成要素のリスクを含む）、DRUJ
不安定性、TFCC傷害、尺骨間症候群、AINパルス、PINパルス、尺側正中神経
束縛症候群、小関節アプロピュニクリタリトロジー（整復のための軟組織の損傷
の可能性がある上肢と下肢）；
- 経験的な手術術者の進行室ルールは、患者の処置に関連し、適切な手術の
セットアップを指示できる。包括的、物理的、助手、放射線技師；
- 経験的な手術術者の助手として、一定の手技を効果的に行うことができる。
正中-尺側継合術、尺側MPのアキレス筋腱炎、基本性腕関節鏡検査、上肢
関節、尺側関節、尺側関節安定性、尺骨間症候群、小関節
アプロピュニクリタリトロジー、軟組織被着用フライプ、反尺側手関節フライプ、指指
フライプで予後を改善する；
- 緊急事態の要因を予想し、指示する主手術者、指示する場合に適任扱いを
する。

Medical Knowledge

Goals

The senior hand resident will obtain specific knowledge in problems related to upper extremity
injuries. This is through the use of clinical materials, biomedical research data, and didactic
learning. The senior hand resident will apply this knowledge to patient care and will actively

teach junior residents and students.

Objectives
- Demonstrate mastery of all elements in the realm of medical knowledge as described for the
  junior level resident;
- Demonstrate a firm understanding of the fundamentals of hand and wrist anatomy including
  common anatomic variations and be able to instruct the junior resident in this realm;
- Demonstrate knowledge and expertise in the discussion of the natural history of hand
  injuries/conditions including fractures, dislocations, tendon injuries, instability patterns,
  osteonecrosis, non-unions, and malunions;
- Interpret and have an understanding of the significance of electrodiagnostic studies, vascular
  studies, autonomic function studies, and advanced radiographic study techniques;
- Possess a basic understanding of the priorities of treatment of hand conditions, including the
  revascularization of devitalized parts, skeletal stabilization, tendon fixation, nerve
  reconstruction, and soft tissue coverage for complex injuries of the hand and wrist (possesses a
  basic understanding of the goals of treatment and the techniques used to achieve these goals in

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the treatment of combined injuries of the hand and wrist, including skeletal fixation, tendon/nerve/vessel repair, and soft tissue coverage);
- Demonstrate advanced knowledge and familiarity with rehabilitation methods for non-operative and postoperative treatment of hand conditions as listed above;
- Develop an understanding of potential perioperative complications for both elective and emergent surgical hand and wrist conditions and the appropriate available treatment algorithms;
- Support clinical and surgical treatment plans using data from pertinent current literature and clinical studies;
- Demonstrate knowledge of the use of instrument sets (mini-fragment, modular handsets, external fixation, Herbert and Acutrak screws, etc.) specific to the care of injuries of the hand and wrist and the appropriate use of intraoperative imaging.

**Practice-based Learning and Improvement**

**Goals**

The senior hand resident will appraise and assimilate scientific evidence for the care of the hand and upper extremity patient. This involves investigation and evaluation of patient care.

**Objectives**

- Demonstrate competence in the application of critical thinking and in the appraisal of clinical studies read in peer reviewed literature as well as in the treatment of patients;
- Responsibly perform preoperative examination in the holding area of patients on whom hand surgery is being performed;
- Responsibly confirms the surgical site with the junior level resident;
- Responsibly directs education of the junior resident and medical students on the team;
- Successfully maintains a record of all operative cases via the ACGME web site;
- Self-evaluation of performance should include search, retrieve, and interpret peer reviewed medical literature relevant to hand diseases and disorders, apply study and case report conclusions to the care of individual patients;
- Reflective learning should include: communicate learned concepts to peers, incorporation of feedback into improvement of clinical activity, utilize patient information systems to assess measurable clinical practices and outcomes.

**Interpersonal and Communication Skills**

**Goals**

The senior hand resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.
Objectives
- Demonstrate communication skills that result in an effective information exchange with patients, their families and caregivers, and other physicians and members of the health care team;
- Create and sustains a therapeutic and ethically sound relationship with patients and their families;
- Effectively use listening skills in communication with all parties involved in patient care;
- Effectively provide information via various methods – Confidence and effectiveness in transmitting information verbally and written;
- Effectively work with other members of the team, specifically medical assistants, chief residents, hand fellows and hand therapists;
- Present at conferences, to other physicians, and mentors both formally and informally effectively and succinctly;
- Seek necessary help from hand fellows and therapists for the provision of appropriate care to the patient when necessary.

Professionalism

Goals
The senior hand resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Patient primacy: trainees are expected to 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 outlined 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 nonsurgical care of the patient’s condition, giving equitable care to all patients, treating all patients with respect regardless of race, gender and socioeconomic background;
- Physician accountability and responsibility: follow through on duties and clinical tasks. Demonstrate timeliness in required activities, in completing medical records and in responding to patient and colleague calls. Exhibit regular attendance and active participation in hand surgery service and orthopaedic departmental training activities and scholarly endeavors. Strive for excellence in care and or scholarly activities as an orthopaedic surgeon and hand surgeon. Work to maintain personal physical and emotional health and demonstrate an understanding of and ability to recognize physician impairment in self and colleagues. Demonstrate sensitivity to the culture, age, gender and disabilities of fellow health care professionals and be respectful of the opinions of other healthcare professionals. Demonstrate appropriate conduct in the timely completion of the dictated operative notes, chart operative summaries and discharge summaries as well as clinic notes;
- Humanistic qualities and altruism: exhibit empathy and compassion in patient/physician interactions, sensitive to patient needs for comfort and encouragement, courteous and respectful in interactions with patients, staff and colleagues, maintains the welfare of their patients as their primary professional concern;
- Ethical behavior including being trustworthy and cognizant of conflicts of interest. Maintaining integrity as a physician orthopaedic surgeon and hand surgeon pervades all of the components of professionalism. Demonstrate integrity when reporting back key clinical findings to supervising physicians. Be trustworthy in following through on clinical questions, laboratory results and other patient care responsibilities. Recognize and address actual and potential conflicts of interest including orthopaedic device industry and pharmaceutical industry involvement in their medical education and program funding and guard against this influencing their current and future treatment recommendation habits.

**Systems-based Practice**

**Goals**

The senior hand resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the senior hand resident will effectively call on other resources in the system to provide optimal health care.

**Objectives**

- In addition to the competencies listed for the PGY-3 trainee, the senior resident is responsible for the following:
- Demonstrate appropriate conduct in the timely completion of the dictated operative notes, chart operative summaries and discharge summaries as well as clinic notes. Understand how the delay of these activities affects patient care throughout the system overall;
- Effectively partners with other members of the health care team;
- Serve as an example for the remaining members of the team, especially 2nd and 3rd year residents and 3rd and 4th year medical students.
SENIOR FOOT & ANKLE ROTATION

Overall Goal
To provide a foot and ankle program dedicated to the superior care of the patient with foot and ankle pathologies, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with foot and ankle pathologies and total commitment to returning people to useful life. In general, a senior resident is expected to achieve the learning objectives of the junior resident in addition to the following goals and objectives.

Patient Care

Goals
The Senior Foot & Ankle resident will perform inpatient, outpatient, and surgical care of foot and ankle patients under staff supervision. The senior resident will effectively develop the clinical skills to facilitate adequate evaluation of complex Foot and Ankle conditions seen in adolescent and adult patients. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- In general, a senior resident is expected to achieve the learning objectives of the junior resident in addition to demonstrating a refined set of clinical skills that include:
- Expertly develop a detail-specific patient history and examination.
- Demonstrates clinical skills that include:
  - Evaluation of foot and ankle malalignment
  - Identify joint contractures or laxity
  - Identify tendon imbalances
  - Demonstrates the ability to order the appropriate xrays (if indicated)
    - know special xray views
    - know when advanced imaging of the foot/ankle is indicated
  - Demonstrates the ability to provide a complete interpretation of the images
  - Demonstrates the ability to analyze the findings to form a differential diagnosis and a presumptive working diagnosis
  - Demonstrates the ability to formulate a detailed plan of care
    - medications, physical therapy, orthotics, braces, casts, splints
    - able to discuss reasoning for and against operative options
- Demonstrate procedural and surgical skills with supervision appropriate to the level of training that include:
  - Demonstrates the ability to perform the common procedures for outpatients and in-house consult, such as joint aspiration/injection, casting, and splinting, and supervises junior residents in these activities
Demonstrates the ability to perform basic surgical skills and guide junior residents with attending supervision
  ▪ positioning, draping, basic exposure
  ▪ know the steps of the procedure
  ▪ proper postoperative dressing/splinting

- Demonstrates the ability to manage inpatients:
  □ Demonstrates the ability to provide postoperative inpatient care for foot and ankle patients after surgery including pain management, management of medical comorbidities and complications, and supervision of junior residents
  □ Develops and implements management plans and initiates strategies including appropriate consultation with the supervising physician

Medical Knowledge

Goals
The senior Foot and Ankle resident will obtain specific knowledge in complex problems related to foot and ankle pathology. This is through the use of clinical materials, biomedical research data, and didactic learning. The resident will apply this knowledge to patient care.

Objectives
- will be able to answer questions appropriate to their level of training in anatomy, physiology, biomechanics, and disease-specific facts through ongoing reading
- will be able to discuss current literature regarding controversies and gaps in clinical issues
- will demonstrate a willingness and ability to acquire new information
- attends and participates in the weekly Indications Conference
- models and mentors the ideal to the junior residents

Practice-based Learning and Improvement

Goals
The senior Foot and Ankle resident will recognize gaps in knowledge and experience, use constructive criticism to improve, and apply scientific knowledge in daily duties.

Objectives
- Easily and expertly locate, appraise and assimilate evidence from scientific studies related to patients’ health issues.
- Expertly obtain and use information about his/her patient population and the larger population from which patients are drawn.
- Expertly apply knowledge of study designs and statistical methods to the appraisal of clinical studies.
- Expertly use information technology to manage information, access on-line medical information and support his/her own education.
- Expertly facilitate the learning of medical students and junior residents on the Foot and Ankle service and other health care professionals on an informal basis in clinics, operating rooms and conferences.
- Expertly critically evaluate literature regarding Foot and Ankle conditions
- Expertly analyze the circumstances surrounding a complication and to formulate an improvement plan to improve future care.

**Interpersonal and Communication Skills**

**Goals**
The senior resident communicates effectively with patients, their families, professional colleagues and the allied health staff to work effectively as a leader of a treatment team. They actively demonstrate exemplary interpersonal interactions and are a role model and mentor to the junior residents.

**Objectives**
- Creates and sustains a therapeutic and ethically sound relationship with patients and their families, and provides education regarding the patient’s condition and the treatment plan
- Easily and expertly communicate information via various methods
- Work effectively with other members of the health care team
- Easily and expertly reporting to attending staff to ensure good patient care
- Demonstrates good listening skills and presents information in a clear and concise manner highlighting salient features
- Respond to patient phone calls and communication from allied health professionals and effectively emphasize the importance of this skill to all members of the care team

**Professionalism**

**Goals**
The senior resident will demonstrate high standards of ethical and moral behavior, honesty and integrity, compassion and empathy, reliability and responsibility in his/her daily activities as a member of the Orthopaedic Surgery Residency Program, and also demonstrate sensitivity to patients of diverse backgrounds. The senior resident will be a role model and peer-to-peer mentor to the junior residents regarding professionalism, and teaches these skills to all members of the care team.

**Objectives**
- Maintains the strictest confidence in any and all interactions dealing with all patients
- Demonstrates respect, compassion and integrity in response to the needs of patients and their families
- Demonstrates ethical principles pertaining to patient confidentiality issues.
- Demonstrates sensitivity to the culture, age, gender and disabilities of patients and fellow health care professionals.
- Promptly recognizes and acknowledges complications
- Maintains adequate timely documentation
- Completes teaching and rotation evaluations
- Demonstrates excellent clinical judgment and is able to direct all members of the care team
- Demonstrates awareness of limitations (seeks advice/assistance when appropriate)

**Systems-based Practice**

**Goals**

The senior resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the senior resident will effectively call on other resources in the system to provide optimal health care.

**Objectives**

- Demonstrates knowledge of treatment plans and their impact on cost-effectiveness and efficiency of patient care.
- Expertly acts as an advocate for quality of patient care.
- Expertly assess, coordinate and improve the care of patients within the current health care model(s) or systems in the program [OT, PT and Rehab].
- Expertly work with other health care professionals from various disciplines to provide excellent patient-focused care
- Completes all requirements for compliance, risk management, and safety education
SENIOR SPORTS ROTATION

Overall Goal

To provide a sports service program dedicated to the superior care of the sports injury patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with sports injuries and total commitment to returning people to useful life.

Patient Care

Goals

The senior sports resident will experience inpatient, outpatient, and surgical care of sports injury patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives

- Demonstrates more refined and advanced patient care and clinical skills in the evaluation of sports-related injuries, such as:
- Able to take a detailed history, complete an appropriate and accurate physical exam, and review appropriate imaging studies to allow integration of information to formulate an appropriate diagnosis and treatment plan;
- Possesses refined physical exam skills including examination of the unstable knee and shoulder. Demonstrates development of refined and focused physical exam skills that help to identify more subtle sports medicine problems of these joints. These include:
  - Knee: conditions of subtle instability patterns such as posterolateral rotatory and patellar instability;
  - Shoulder: conditions of internal impingement, labral lesions, SLAP tears, biceps tendon disorders, and posterior glenohumeral instability;
  - Elbow: conditions of ulnar collateral ligament injury, valgus-extension overload, posteromedial olecranon impingement, ulnar nerve instability/subluxation, and posterolateral rotatory instability;
  - Ankle: symptomatic os trigonum, peroneal tendon disorders, anterior tibio-talar impingement, chronic instability, and chondral lesions of the talar dome.
- Demonstrates basic understanding of the appropriate indications for nonsurgical versus surgical treatment and the appropriate rehab protocols for various injuries and conditions;
- Possesses and is able to apply an appropriate understanding of the expected postoperative progression and rehabilitation of patients following common sports medicine surgical procedures including partial meniscectomy, meniscal repair, ACL reconstruction, ankle arthroscopy, shoulder stabilization, rotator cuff repair, and acromioplasty;
- Effectively and responsibly evaluates patients at varying postoperative intervals and modifies rehabilitation protocols as necessary;
- Possesses and demonstrates more advanced and refined surgical skills including advanced arthroscopic skills including, but not limited to:
  □ Knee: meniscal repair techniques and ACL reconstruction including tunnel placement and graft fixation techniques;
  □ Shoulder: arthroscopic and open stabilization techniques, SLAP/labral repair techniques, arthroscopic rotator cuff repair techniques, and biceps tenodesis;
  □ Elbow: diagnostic arthroscopy including portal placement, ulnar nerve transposition techniques and ulnar collateral ligament reconstruction
- Attends the weekly Sports Medicine Conference;
- Effectively communicates and demonstrates care and respectful behaviors when interacting with patients and families;
- Able to counsel and educate patients and their families;
- Demonstrates the ability to practice culturally competent medicine
- Able to use information technology to support patient care decisions and patient education;
- Able to provide health care services aimed at preventing health problems or maintaining health (Rehab, OT, PT);
- Able to work with other health care professionals from various disciplines to provide excellent patient-focused care (Rehab, OT, PT, Human Performance, etc).
- Facility with the diagnostic scope of the knee and shoulder; knot tying. Intermediate level with the ablative procedures: meniscectomy and SAD. Beginning level with reconstructive procedures: ACL and cuff.
  □ Ultrasound: This is a new skill for Orthopaedic Surgeons and not fully developed in medical school education. There are two types: diagnostic and procedure.
  □ Diagnostic: It has been found that it takes about 100 US exams to reach proficiency. This level will not be reached until the later years of residency, but one can achieve some beginning proficiency which will be helpful in treating patients. This level includes:
    □ Tissues identification: skin, fat, bone tendon, muscle, nerve and vessel.
    □ Material identification: wood, plastic, metal glass and PMMA
    □ Structure identification:
    □ Muscles: Deltoid, Spinati, Subscap, LHB and Teres

**Medical Knowledge**

**Goals**

The senior sports resident will obtain specific knowledge in problems related to sports injuries. This is through the use of clinical materials, biomedical research data, and didactic learning. The senior sports resident will apply this knowledge to patient care and will actively teach junior residents and students.

**Objectives**
- Possesses a more advanced knowledge of the typical mechanisms of injury for common sports medicine problems;
- Possesses a strong working knowledge of arthroscopic and open surgical approaches including those for the shoulder, elbow, knee, and ankle;
- Demonstrates an understanding of the various surgical options to treat common sports medicine conditions including arthroscopic versus open approaches. The R4 senior resident is expected to begin to develop advanced arthroscopic skills including knowledge of the appropriate use of accessory portals, advanced arthroscopic techniques such as arthroscopic shoulder stabilization, superior labral repair, and osteochondral reconstruction;
- Possesses the arthroscopic skills needed to successfully perform basic arthroscopic procedures such as diagnostic arthroscopy, arthroscopic meniscectomy, arthroscopic subacromial decompression, and arthroscopic ACL reconstruction. The R4 senior resident is also expected to have a basic working knowledge of and the skills to implement more advanced arthroscopic techniques such as arthroscopic PCL reconstruction and arthroscopic shoulder stabilizations.

**Practice-based Learning and Improvement**

**Goals**
The senior sports resident will appraise and assimilate scientific evidence for the care of the sports injury patient. This involves investigation and evaluation of patient care.

**Objectives**
- Able to locate, appraise and assimilate evidence from scientific studies related to patients' health issues;
- Able to obtain and use information about his/her patient population and the larger population from which patients are drawn;
- Able to apply knowledge of study designs and statistical methods to the appraisal of clinical studies;
- Able to use information technology to manage information, access on-line medical information and support his/her own education;
- Able to facilitate the learning of Junior Residents as well as medical students on the Sports Medicine service and other health care professionals on an informal basis in clinics, operating rooms and conferences;
- Demonstrates leadership and responsibility for overseeing the appropriate care of inpatients under the supervision of the junior resident;
- Efficiently and effectively interprets advanced imaging studies commonly used to evaluate sports-related injuries.

**Interpersonal and Communication Skills**

**Goals**
The senior sports resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.
Objectives

- Communicates with radiology consultants and sports physical therapy personnel for rehab purposes to coordinate patient care effectively;
- Specifically:
  - Effectively communicates to radiology consultants greater details of the required imaging study including the need for arthrogram techniques and specific positioning requirements for certain entities such as the need of ABER views for evaluation of a SLAP lesion of the shoulder;
  - Effectively communicates details of rehab protocols for common procedures such as ACL reconstruction, partial meniscectomy, acromioplasty, and anterior stabilization, as well for more advanced procedures such as rotator cuff repair, SLAP repair, elbow UCL reconstruction and PCL reconstruction;
- Able to create and sustain a therapeutic and ethically sound relationship with patients and their families;
- Able to effectively use listening skills;
- Able to effectively provide information via various methods;
- Able to work effectively with others as a member or leader of a health care team.

Professionalism

Goals

The senior sports resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives

- Maintains the strictest confidence in any and all interactions dealing with all patients, especially professional athletes with some measure of local, regional or national celebrity. Refrains from the discussion of the athlete with family, friends or colleagues;
- Demonstrates respect, compassion and integrity in response to the needs of patients and their families;
- Demonstrates ethical principles pertaining to patient confidentiality issues;
- Demonstrates sensitivity to the culture, age, gender and disabilities of patients and fellow health care professionals.

Systems-based Practice

Goals

The senior sports resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the senior sports resident will effectively call on other resources in the system to provide optimal health care.
Objectives

- Maintains the strictest confidence in any and all interactions dealing with all patients, especially professional athletes with some measure of local, regional or national celebrity. Refrains from the discussion of the athlete with family, friends or colleagues;
- Demonstrates knowledge of indications and their impact on cost-effectiveness and efficiency of patient care;
- Acts as an advocate for quality of patient care;
- Able to assess, coordinate and improve the care of patients within the current health care model(s) or systems in the program [OT, PT and Rehab].
**Senior Adult Reconstruction Rotation**

**Overall Goal**
To provide a joints service program dedicated to the superior care of patients with degenerative joint disease of the lower extremities, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with arthritis and total commitment to returning people to useful life.

**Patient Care**

**Goals**
The senior joints resident will experience inpatient, outpatient, and surgical care of patients with degenerative joint disease under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

**Objectives**
- Possesses patient care competencies associated with H/P, physical exams, diagnosis, treatment plan and post-operative management plans above and beyond the PGY-5 level
- Communicates effectively with patient/families
- Coordinates health care team patient care
- Effectively supervises postoperative patient care and manages postoperative complications of revision THA
- Able to evaluate/treat painful total joint replacements
- Demonstrates primary and understanding of revision total joint arthroplasty techniques

**Medical Knowledge**

**Goals**
The senior joints resident will obtain specific knowledge in problems related to degenerative joint disease. This is through the use of clinical materials, biomedical research data, and didactic learning. The senior joints resident will apply this knowledge to patient care and will actively teach junior residents and students.

**Objectives**
- Demonstrates knowledge of revision surgical approaches
- Demonstrates knowledge of diagnosis and treatment of hip pain in symptomatic total joint patients
Practice-based Learning and Improvement

Goals
The senior joints resident will appraise and assimilate scientific evidence for the care of patients with degenerative joint disease. This involves investigation and evaluation of patient care.

Objectives
- Able to effectively teach general concepts/core curriculum to lower level residents
- Able to identify, locate and utilize case-specific articles to enhance learning
- Possesses ability to effectively teach preoperative templating and surgical approaches
- Use information technology such as PubMed and Medline to enhance learning & teaching skills

Interpersonal and Communication Skills

Goals
The senior joints resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Demonstrates leadership and communication skills for coordinating overall patient care
- Demonstrates effective teaching and communication skills
- Works effectively as leader of resident team

Professionalism

Goals
The senior joints resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Maintains sound, ethical patient care
- Interacts with patients and families in a respectful, ethical and compassionate manner
- Develops and exhibits sensitivity to diverse patient and workforce population – with respect to age, culture, gender, etc.
Systems-based Practice

Goals
The senior joints resident will demonstrate an awareness of and responsiveness to the larger context and system of health care. Furthermore, the senior joints resident will effectively call on other resources in the system to provide optimal health care.

Objectives
- Demonstrates understanding of economic issues in total joint arthroplasty (reimbursement, implant cost, postoperative care)
- Effectively coordinates patient care with other members of health care team
- Demonstrates awareness of health care workers’ involvement in integrated care of total joint arthroplasty patient
- Practices cost-effective medical care within the system or practice model without compromising quality of care
- Acted as an advocate for quality of patient care
- Able to assess, coordinate and improve the care of patients within the current health care
CHIEF ARMC ROTATION

Overall Goal
To provide a county service program dedicated to the superior care of the orthopaedic patient, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of patients with orthopaedic injuries and total commitment to returning people to useful life.

Patient Care

Goals
The chief ARMC resident will experience inpatient, outpatient, and surgical care of orthopaedic patients under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families regarding general orthopaedic, trauma, and medical issues.
- Gather essential and accurate information about their patients.
- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date orthopaedic scientific evidence, and clinical judgment.
- Develop, supervise, and carry out patient management plans.
- Counsel and educate patients and their families regarding orthopaedic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology as provided by the county system, such as electronic radiographic archiving, to support patient care decisions and patient education.
- Perform competently all medical and invasive procedures considered essential to orthopaedic surgery.
- Learn to coordinate an orthopaedic service in the setting of a county medical system.
- Supervise junior residents, under the direction of faculty, in the administration of patient care in the county setting.
- Work with health care professionals, including those from other disciplines, to provide patient-focused care.

Medical Knowledge

Goals
The chief ARMC resident will obtain specific knowledge in problems related to orthopaedic patients. This is through the use of clinical materials, biomedical research data, and didactic
learning. The chief ARMC resident will apply this knowledge to patient care and will actively teach junior residents and students.

Objectives
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty and on in-training examination performance.
- Know and apply the basic and clinically supportive sciences which are appropriate to orthopaedic surgery in the county medical delivery setting.
  - Simple and complex fractures
  - Open fractures
  - Musculoskeletal infections
  - Lacerations
  - Neurologic disorders
  - Circulatory disorders
  - Fingertip injuries
  - Pain, inflammation, and overuse
    - Rotator cuff and impingement
    - Lateral epicondylitis
    - DeQuervain’s tenosynovitis
  - Trigger finger
  - Spine injuries
  - Pelvis and acetabulum fractures
  - Degenerative joint disease and joint replacement
  - Tendon transfers
  - Soft tissue coverage
    - Local rotational flaps
    - Pedicle flaps
    - Free tissue transfer
  - Pediatric orthopaedics
    - Developmental dysplasia of the hip
    - Legg-Calvé-Perthes disease
    - Slipped capital femoral epiphysis
    - Clubfeet
  - Spinal deformities
- Teach junior residents and students regarding the care of orthopaedic patients, including methods of patient assessment and the use of medical knowledge in clinical decision making.

Practice-based Learning and Improvement

Goals
The chief ARMC resident will appraise and assimilate scientific evidence for the care of the orthopaedic patient. This involves investigation and evaluation of patient care.
Objectives

- Analyze practice experience and perform practice-based improvement activities using a systematic methodology.
- Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.
- Obtain and use information about their own population of patients and the larger population from which their patients are drawn.
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness.
- Use information technology to manage information, access online medical information, and support their own education, as well as assist in the education of others.
- Facilitate the learning of students, junior residents, and other health care professionals.

Interpersonal and Communication Skills

Goals
The chief ARMC resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member or leader of a healthcare team or other professional group.

Professionalism

Goals
The chief ARMC resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

Objectives
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical and orthopaedic needs of patients and society that supersedes self-interest, regardless of patients' socioeconomic status; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, disabilities that may have resulted from musculoskeletal injury, and socioeconomic status.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

**Systems-based Practice**

**Goals**

The chief ARMC resident will demonstrate an awareness of and responsiveness to the larger context and system of governmental health care. Furthermore, the chief ARMC resident will effectively call on other resources in the system to provide optimal health care. The commitment at ARMC is to practice the same philosophy as LLUMC, which is “To Make Man Whole.”

**Objectives**

- Understand how their patient care and other professional practices affect other healthcare professionals, the healthcare organization, and the larger society and how these elements of the system affect their own practice.
- Know how the county healthcare system differs from university, private practice, and VA systems, including methods of controlling healthcare costs and allocating resources.
- Advocate for quality patient care and assist patients in dealing with the county healthcare system, which includes obtaining appropriate diagnostic studies, assuring adequate follow-up care, and arranging ancillary services, such as therapy and prosthetics.
- Understand the opportunities and constraints offered and posed by the county healthcare system.
- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Advocate for quality patient care and assist patients in dealing with system complexities.
- Know how to partner with health care managers to assess, coordinate, and improve health care and know how these activities can affect system performance.
CHIEF VAH ROTATION

Overall Goal
To provide a V.A. service program dedicated to the superior care of the veteran, combining patient care and an appropriate associated teaching program. Our primary goal is superior care of the veteran and total commitment to returning people to useful life.

Patient Care

Goals
The chief VA resident will experience inpatient, outpatient, and surgical care of veterans under staff supervision. The level of care will be compassionate, appropriate, and effective, with a concern for whole patient care.

Objectives
- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families regarding general orthopaedic, trauma, and medical issues.
- Gather essential and accurate information about their patients.
- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date orthopaedic scientific evidence, and clinical judgment.
- Develop, supervise, and carry out patient management plans.
- Counsel and educate patients and their families regarding orthopaedic problems.
- Demonstrate the ability to practice culturally competent medicine.
- Use information technology, such as electronic medical records and electronic radiographic retrieval systems, as provided by the veterans administration system to support patient care decisions and patient education.
- Perform competently all medical and invasive procedures considered essential to orthopaedic surgery.
- Supervise junior residents, under the direction of faculty, in the administration of patient care in the VA setting.
- Work with health care professionals, including those from other disciplines, to provide patient-focused care.

Medical Knowledge

Goals
The chief VA resident will obtain specific knowledge in problems related to veterans. This is through the use of clinical materials, biomedical research data, and didactic learning. The chief
VA resident will apply this knowledge to patient care and will actively teach junior residents and students.

Objectives
- Demonstrate an investigatory and analytic thinking approach to clinical situations, as measured through assessments made by faculty and on in-training examination performance.
- Know and apply the basic and clinically supportive sciences which are appropriate to orthopaedic surgery in the veterans administration setting.
- Teach junior residents and students regarding the care of veterans, including methods of patient assessment and the use of medical knowledge in clinical decision making.

Practice-based Learning and Improvement

Goals
The chief VA resident will appraise and assimilate scientific evidence for the care of the veteran. This involves investigation and evaluation of patient care.

Objectives
- Analyze practice experience and perform practice-based improvement activities using a systematic methodology.
- Locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems.
- Obtain and use information about their own population of patients and the larger population from which their patients are drawn.
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness.
- Use information technology to manage information, access on-line medical information, and support their own education, as well as assist in the education of others.
- Facilitate the learning of students, junior residents, and other health care professionals.

Interpersonal and Communication Skills

Goals
The chief VA resident will develop an effective exchange of information and collaboration with patients, their families, and other health professionals. Excellent interpersonal and communication skills will be modeled by the faculty.

Objectives
- Create and sustain a therapeutic and ethically sound relationship with patients.
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- Work effectively with others as a member or leader of a healthcare team or other professional group.

**Professionalism**

**Goals**
The chief VA resident will carry out professional responsibilities, adhere to ethical principles, and demonstrate sensitivity to patients of diverse backgrounds. Professionalism will be modeled by the faculty.

**Objectives**
- Demonstrate respect, compassion, and integrity; a responsiveness to the general medical and orthopaedic needs of patients and society that supersedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and ongoing professional development.
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, disabilities that may have resulted from musculoskeletal injury, and combat background.
- Demonstrate sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities.

**Systems-based Practice**

**Goals**
The chief VA resident will demonstrate an awareness of and responsiveness to the larger context and system of governmental health care. Furthermore, the chief VA resident will effectively call on other resources in the system to provide optimal health care.

**Objectives**
- Understand how their patient care and other professional practices affect other healthcare professionals, the healthcare organization, and the larger society and how these elements of the system affect their own practice.
- Know how the VA system differs from other healthcare systems, including methods of controlling healthcare costs and allocating resources.
- Advocate for quality patient care and assist patients in dealing with the veterans administration system, which includes obtaining appropriate diagnostic studies, assuring adequate follow-up care, and arranging ancillary services, such as therapy and prosthetics.
- Understand the opportunities and constraints offered and posed by the veterans administration system.
- Practice cost-effective health care and resources allocation that does not compromise quality of care.
- Advocate for quality patient care and assist patients in dealing with the veterans administration system.
- Know how to partner with health care managers and other healthcare providers to assess, coordinate, and improve health care and know how these activities can affect system performance.
- Show leadership in organizing the orthopaedic service team members in clinic, wards, and surgery while demonstrating effective patient management.
APPENDICES
General Surgery Residency
Loma Linda University

LLUMC General Surgery Goals and Objectives

PGY 1

Goals:
Loma Linda University Medical Center will provide a learning environment for various gastrointestinal surgical pathology and general surgical issues. Surgical basic science, including fluids and electrolytes, wound healing and nutrition, will be emphasized. Clinically, residents will assess surgical pathology pre-operatively, develop clinical judgment on managing these issues, and learn operative skills to address the problem. Careful postoperative care and follow up will be emphasized. Residents will develop cognitive and technical skills in dealing with complex gastrointestinal pathology.

Objectives:

Medical Knowledge
Describe the embryological development of the peritoneal cavity and the position of the abdominal viscera.

Diagram the anatomy of the abdomen including its viscera and anatomic spaces.

Describe the anatomy of the momentum and its role in responding to inflammatory processes.

Describe the treatment alternatives for the patient with an acute abdomen according to the specific etiology.

Describe the anatomy, clinical presentation and complication of non-operative management of hernias.

Name the most common hernia types and explain their pathophysiology.

Describe the etiology, pathophysiology, and therapy for inflammatory bowel diseases including ulcerative colitis and Crohn’s disease.

Define a Richter’s hernia and describe the clinical presentation.
Evaluate and institute management of abdominal wound problems.

Coordinate pre- and post-surgical operative care for patients in the General Surgery Rotation.

Assist in closure of abdominal incisions and exhibit competency in suture technique.

Recognize recto-vaginal fistulas and know the evaluation and treatment options.

Be able to apply and remove all types of dressings.

Make and close a variety of incisions and tie knots using sterile technique.

Describe the management of glucose in the diabetic patient.

List etiologies for persistent high NGT output in the postoperative patient or patients with small bowel obstruction.

Describe the clinical presentation of a patient with hernias, abscesses, biliary disease, bowel obstructions, diverticulitis, hemorrhoids, fissures, and cancer patients.

Draw the anatomy of the gallbladder, triangle of Calot, and hepatic artery.

Describe the blood supply of the colon and rectum.

List at least seven etiologies for small bowel obstructions and ileuses.

List three of four causes of mesenteric ischemia.

Describe the risks associated with hernia repair, cholecystectomy, I&D of abscesses.

List the differential diagnosis of the patient with chest pain, low urine output, hypotension, hypertension, and hypoxia.

Describe the important history and data to be taken prior to central line placement.

Describe the pathophysiology of GERD and the different treatment modalities.

Name the different diagnostic modalities and learn the interpretation of such modalities such as pH probe.

Describe the different surgical procedures in the treatment of GERD.

Describe the pathophysiology and anatomy of paraesophageal hernias.
Describe the treatment modalities of paraesophageal hernias.

**Patient Care**

Establish basic proficiency in providing pre-operative and post-operative care (writes appropriate pre-op and post-op orders for floor patients, handles nursing calls appropriately, and manages most routine post-operative care with minimal intervention by supervisor).

Take an appropriate history to evaluate patients with general surgical issues to include:

- A complete history of present illness
- Presence of any co-morbidities
- A review of social and family history impacting the present problem
- A complete review of systems

Demonstrate an increasing level of skill in the physical examination of the general surgery patient with a special emphasis in recognition of the surgical abdomen.

Develop a proficiency in evaluation and interpretation of the different diagnostic modalities including: X-Rays, ultrasounds, CT scans, Contrast studies and MRIs.

Discuss treatment options, risks and potential complications of patients with general surgical issues.

Assist in the performance of general surgical and laparoscopic procedures.

Demonstrate skill in basic surgical techniques, including:

- Knot tying
- Exposure and retraction
- Knowledge of instrumentation
- Incisions
- Closure of incisions
- Handling of graft material including mesh
- Establishing pneumoperitoneum
- Handling of laparoscopic instruments
- Handling of the laparoscopic camera

**Professionalism**

The Resident should be receptive to feedback on performance, attentive to ethical issues and be involved in end-of-life discussions and decisions.

Understand the importance of honesty in the doctor-patient relationship and other medical interactions.
Treat each patient, regardless of social or other circumstances, with the same degree of respect you would afford to your own family members.

Learn how to participate in discussions and become an effective part of rounds, attending staff conference, etc.

Complete all assigned patient care tasks for which you are responsible or provide complete sign out to the on-call resident.

Maintain a presentable appearance that sets the standard for the hospital this includes but is not limited to adequate hygiene and appropriate dress. Scrubs should be worn only when operating or while on call.

Assist with families of critically injured/ill patients and guidance of families towards or through difficult decisions.

Demonstrate mentoring and positive role-modeling skills

**Systems-Based Practice**

Understand, review, and contribute to the refinement of clinical pathways

Understand the cost implications of medical decision-making

Partner with health care management to facilitate resource efficient utilization of the hospital resources.

Describe in general terms the benefits of clinical pathway implementation

Develop a cost-effective attitude toward patient management.

Develop an appreciation for the benefits of a multi-disciplinary approach to management of critically ill surgical patients.

Comply with the Health Insurance Portability and Accountability Act of 1996 (HIPAA) regulations regarding patient privacy and confidentiality

**Practice Based Learning & Improvement**

Demonstrate the ability to:

- Evaluate published literature in critically acclaimed journals and texts
- Apply clinical trials data to patient management
- Participate in academic and clinical discussions
Accept responsibility for all dimensions of routine patient management on the wards

Apply knowledge of scientific data and best practices to the care of the surgical patient

Facilitate learning of medical students and physician assistant students on the team.

Use the LLUMC library and databases on on-line resources to obtain up to date information and review recent advances in the care of the surgical patient.

Demonstrate a consistent pattern of responsible patient care and application of new knowledge to patient management.

Demonstrate a command and facility with on line educational tools.

**Interpersonal & Communication Skills**

Work as effective team members

Cultivate a culture of mutual respect with members of nursing and support staff

Develop patterns of frequent and accurate communication with team members and attending staff

Gain an appreciation for both verbal and non verbal communication from patients and staff

Demonstrate consistent respectful interactions with members of nursing and support staff

Demonstrate consistent, accurate and timely communication with members of the surgical team

Demonstrate sensitivity and thoughtfulness to patients concerns, and anxieties.

The resident will demonstrate the ability to provide and request appropriate consultation from other medical specialists.
The Orthopaedic Surgery Milestone Project

A Joint Initiative of
The Accreditation Council for Graduate Medical Education and
The American Board of Orthopaedic Surgery
The Orthopaedic Surgery Milestone Project

The milestones are designed only for use in evaluation of resident physicians in the context of their participation in ACGME-accredited residency or fellowship programs. The milestones provide a framework for the assessment of the development of the resident physician in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.
# Orthopaedic Surgery Milestones

**Chair:** Peter J. Stern, MD

## Working Group
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- Charles Day, MD, MBA
- Pamela Derstine, PhD, MHPE
- Laura Edgar, EdD, CAE
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- Rick Wright, MD

## Advisory Group
- Stephen Albanese, MD*
- Timothy Brigham, PhD, MDiv
- Marybeth Ezaki, MD
- Richard Gelberman, MD
- Christopher D. Harner, MD
- Shepard R. Hurwitz, MD*
- Joseph D. Zuckerman, MD

*Acknowledgements: Special thanks to Stephen Albanese, MD and Shepard R. Hurwitz, MD, who were active members of both the Working and Advisory Groups.
Milestone Reporting

This document presents milestones designed for programs to use in semi-annual review of resident performance and reporting to the ACGME. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME competencies organized in a developmental framework from less to more advanced. They are descriptors and targets for resident performance as a resident moves from entry into residency through graduation. In the initial years of implementation, the Review Committee will examine milestone performance data for each program’s residents as one element in the Next Accreditation System (NAS) to determine whether residents overall are progressing.

For each period, review and reporting will involve selecting milestone levels that best describe each resident’s current performance and attributes. Milestones are arranged into numbered levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert. These levels do not correspond with post-graduate year of education.

Selection of a level implies that the resident substantially demonstrates the milestones in that level, as well as those in lower levels (see the diagram on page v).

**Level 1:** The resident demonstrates milestones expected of an incoming resident.

**Level 2:** The resident is advancing and demonstrates additional milestones, but is not yet performing at a mid-residency level.

**Level 3:** The resident continues to advance and demonstrate additional milestones, consistently including the majority of milestones targeted for residency.

**Level 4:** The resident has advanced so that he or she now substantially demonstrates the milestones targeted for residency. This level is designed as the graduation target.

**Level 5:** The resident has advanced beyond performance targets set for residency and is demonstrating “aspirational” goals which might describe the performance of someone who has been in practice for several years. It is expected that only a few exceptional residents will reach this level.
Additional Notes

Level 4 is designed as the graduation *target* but *does not* represent a graduation *requirement*. Making decisions about readiness for graduation is the purview of the residency program director. Study of milestone performance data will be required before the ACGME and its partners will be able to determine whether milestones in the first four levels appropriately represent the developmental framework, and whether milestone data are of sufficient quality to be used for high-stakes decisions.

Examples are provided with some milestones. Please note that the examples are not the required element or outcome; they are provided as a way to share the intent of the element.

Some milestone descriptions include statements about performing independently. These activities must occur in conformity to the ACGME supervision guidelines, as well as institutional and program policies. For example, a resident who performs a procedure independently must, at a minimum, be supervised through oversight.

*Answers to Frequently Asked Questions about the NAS and milestones are available on the ACGME’s NAS microsite:*
http://www.acgme-nas.org/assets/pdf/NASFAQs.pdf.
The diagram below presents an example set of milestones for one sub-competency in the same format as the milestone report worksheet. For each reporting period, a resident’s performance on the milestones for each sub-competency will be indicated by:

- Selecting the level of milestones that best describes that resident’s performance in relation to the milestones
- For Patient Care and Medical Knowledge milestones, selecting the option that says the resident has “Not yet rotated”
- For Interpersonal and Communication Skills, Practice-based Learning and Improvement, Professionalism, and Systems-based Practice, selecting the option that says the resident has “Not yet achieved Level 1”

<table>
<thead>
<tr>
<th>Milestone Description: Pediatric Septic Hip – Medical Knowledge</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
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<tbody>
<tr>
<td>• Demonstrates knowledge of common presentation of hip septic arthritis</td>
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<tr>
<td>• Demonstrates knowledge of hip anatomy</td>
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<tr>
<td>• Demonstrates knowledge of basic hip imaging studies</td>
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<tr>
<td>• Demonstrates knowledge of appropriate laboratory studies</td>
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<tr>
<td>• Demonstrates knowledge of pathophysiology of joint damage related to septic arthritis</td>
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<tr>
<td>• Demonstrates knowledge of basic surgical approach</td>
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<tr>
<td>• Demonstrates knowledge of the differential diagnosis of the irreparable hip</td>
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<tr>
<td>• Demonstrates knowledge of the effects of intervention</td>
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<tr>
<td>• Demonstrates knowledge of advanced imaging studies</td>
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<tr>
<td>• Demonstrates knowledge of the vascular supply in the skeletonally immature hip</td>
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<tr>
<td>• Demonstrates knowledge of microbiology and antibiotic choices</td>
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<tr>
<td>• Demonstrates knowledge of potential complications</td>
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<tr>
<td>• Demonstrates knowledge of clinical and laboratory data relevant to differential diagnosis</td>
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<tr>
<td>• Demonstrates knowledge of options and anatomy for surgical approaches</td>
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<tr>
<td>• Demonstrates knowledge of atypical infecting organisms and management options</td>
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<tr>
<td>• Author/presenter in published work</td>
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</tbody>
</table>

Selecting a response box in the middle of a level implies that milestones in that level and in lower levels have been substantially demonstrated.

Selecting a response box on the line in between levels indicates that milestones in lower levels have been substantially demonstrated as well as some milestones in the higher level(s).
<table>
<thead>
<tr>
<th>Anterior Cruciate Ligament (ACL) – Medical Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 1</strong></td>
</tr>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to ACL injury (e.g., mechanisms of injury)</td>
</tr>
<tr>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies</td>
</tr>
<tr>
<td>• Has knowledge of natural history of ACL injury</td>
</tr>
<tr>
<td>• Demonstrates knowledge of ACL injury anatomy and basic surgical approaches (e.g., ACL bundles)</td>
</tr>
<tr>
<td>• Understands basic pre-surgical planning and templating</td>
</tr>
<tr>
<td>• Understands advantages and disadvantages of graft types</td>
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<tr>
<td>Comments: Not yet rotated □</td>
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</tbody>
</table>
## Anterior Cruciate Ligament (ACL) – Patient Care

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Obtains history and performs basic physical exam (e.g., age, gender, history of present illness [HPI], past medical history [PMHx], social history, range of motion, effusion, neurovascular status)</td>
<td>• Obtains focused history and performs focused exam (e.g., mechanism of injury, past knee history, past treatments, Lachman, anterior drawer, pivot shift, meniscal pain)</td>
<td>• Recognizes concomitant associated injuries (e.g., lateral collateral ligament [LCL], multi ligament, osteochondritis dissecans [OCD], posterior cruciate ligament [PCL], collateral ligaments, posterolateral corner instability, reverse pivot shift)</td>
<td>• Performs graft passage and fixation</td>
<td>• Performs revision/transphyseal ACL reconstruction (e.g., hardware removal, outside in drilling techniques)</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies (e.g., knee radiographs)</td>
<td>• Appropriately interprets basic imaging studies (e.g., alignment, joint space, patella alignment)</td>
<td>• Appropriately orders and interprets advanced imaging studies (e.g., standing views, magnetic resonance imaging [MRI], Segond fracture, bone bruising)</td>
<td>• Capable of treating complications both intraoperatively and post-operatively (e.g., graft harvest failure, tunnel malposition, chondral injury)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Prescribes non-operative treatments (e.g., range of motion [ROM], weight-bearing [WB] status)</td>
<td>• Prescribes and manages non-operative treatment (e.g., closed chain quad strengthening)</td>
<td>• Provides complex non-operative treatment (e.g., WB status, bracing as appropriate, vascular studies)</td>
<td>• Surgically treats complex complications</td>
<td>• Surgically treats complex complications</td>
</tr>
<tr>
<td>• Provides basic peri-operative management (e.g., neurovascular status, brace, WB status)</td>
<td>• Completes pre-operative planning with instrumentation, graft selection and implants</td>
<td>• Completes comprehensive pre-operative planning with alternatives</td>
<td>• Performs diagnostic arthroscopy, notchplasty, and/or graft harvest</td>
<td>• Modifies and adjusts post-operative treatment plan as needed (e.g., loss of knee motion treatment, sport specific drills, return to sport)</td>
</tr>
<tr>
<td>• Lists potential complications (e.g., infection, loss of motion, graft failure, neurovascular compromise)</td>
<td>• Examines injury under anesthesia (e.g., complete ligament examination)</td>
<td>• Performs post-operative management and rehabilitation (e.g., WB status, brace, ROM, quad strength)</td>
<td>• Performs diagnostic arthroscopy, notchplasty, and/or graft harvest</td>
<td>• Performs revision/transphyseal ACL reconstruction (e.g., hardware removal, outside in drilling techniques)</td>
</tr>
<tr>
<td></td>
<td>• Provides post-operative management and rehabilitation (e.g., WB status, brace, ROM, quad strength)</td>
<td>• Capable of diagnosis and early management of complications (e.g., graft failure, tunnel placement)</td>
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### Ankle Arthritis – Medical Knowledge

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Demonstrates knowledge of pathophysiology related to ankle/mid-foot/hind-foot arthritis</td>
<td>● Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., bone loss, articular deformity, subluxation)</td>
<td>● Demonstrates knowledge of current literature and alternative treatments (e.g., non-operative, cheilectomy, fusion, replacement, distraction)</td>
<td>● Understands controversies within the field</td>
<td>● Primary author/presenter of original work within the field</td>
</tr>
<tr>
<td>● Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., osteophyte formation, joint narrowing, subchondral cysts and sclerosis)</td>
<td>● Understands the effects of intervention on natural history of ankle/mid-foot/hind-foot arthritis (e.g., effects of NSAIDs, steroid injections, brace, rocker bottom shoes)</td>
<td>● Understands abnormal gait mechanics of ankle/mid-foot/hind-foot arthritis (e.g., antalgic gait, circumduction, decreased stance) and abnormal limb alignment and adjacent joint function</td>
<td>● Applies understanding of natural history to clinical decision-making (e.g., considers patient-specific characteristics of disease to select most appropriate treatment)</td>
<td></td>
</tr>
<tr>
<td>● Demonstrates basic knowledge of natural history of ankle/mid-foot/hind-foot arthritis</td>
<td>● Demonstrates knowledge of abnormal gait mechanics of ankle/mid-foot/hind-foot arthritis (e.g., anterior, lateral-transfibular)</td>
<td>● Applies understanding of non-operative treatment options and surgical indications</td>
<td>● Applies biomechanics to implant and procedure selection</td>
<td></td>
</tr>
<tr>
<td>● Demonstrates knowledge of gait mechanics (e.g., phases of gait) and normal limb alignment</td>
<td>● Demonstrates knowledge of ankle/mid-foot/hind-foot arthritis anatomy and basic surgical approaches (e.g., anterior, lateral-transfibular)</td>
<td>● Understands basic pre-surgical planning and templating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Demonstrates knowledge of non-operative treatment options and surgical indications</td>
<td>● Understands alternative surgical approaches (e.g., posterior, posterolateral, posteromedial)</td>
<td>● Understands non-operative treatment options and surgical indications</td>
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</tr>
</tbody>
</table>

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## Ankle Arthritis – Patient Care

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Obtains history and performs basic physical exam</td>
<td>• Obtains focused history and performs focused exam and gait analysis</td>
<td>• Appropriately orders and interprets advanced imaging studies/lab studies</td>
<td>• Provides patient specific non-operative treatment (e.g., diagnostic injections)</td>
<td>• Performs complex surgical approaches and reconstruction to the ankle/mid-foot/hind-foot arthritis (e.g., posterior, posterolateral, posteromedial)</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies (e.g., three weight-bearing views)</td>
<td>• Appropriately interprets basic imaging studies</td>
<td>• Completes comprehensive pre-operative planning with alternatives</td>
<td>• Capable of performing straight forward ankle/mid-foot/hind-foot reconstruction such as Tarsometatarsal joint arthrodesis, tarsal joint arthrodesis, triple, talonavicular or subtalar joint arthrodesis and ankle fusion (e.g., with minimal deformity or bone defect)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Prescribes non-operative treatments</td>
<td>• Prescribes and manages non-operative treatment (e.g., non-steroidal anti-inflammatory drugs [NSAIDs], steroid injections, brace, rocker bottom shoes)</td>
<td>• Modifies and adjusts post-operative treatment plan as needed</td>
<td>• Surgically treats complex complications (e.g., nonunion, malunion)</td>
<td>• Surgically treats complex complications (e.g., nonunion, malunion)</td>
</tr>
<tr>
<td>• Provides basic peri-operative management (e.g., pre- and post-operative orders, labs, consults)</td>
<td>• Completes pre-operative planning with instrumentation and implants</td>
<td>• Performs one basic surgical approach to the ankle/midfoot/hind-foot arthritis (e.g., anterior or lateral transfibular)</td>
<td>• Provides post-operative management and rehabilitation (e.g., prothrombin time [PT] orders with goals and restrictions)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Lists potential complications</td>
<td>• Performs one basic surgical approach to the ankle/midfoot/hind-foot arthritis (e.g., anterior or lateral transfibular)</td>
<td>• Provides post-operative management and rehabilitation (e.g., prothrombin time [PT] orders with goals and restrictions)</td>
<td>• Capable of diagnosis and early management of complications (e.g., wound healing problems, infection, deep vein thrombosis [DVT])</td>
<td>• Surgically treats complex complications (e.g., nonunion, malunion)</td>
</tr>
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<table>
<thead>
<tr>
<th>Ankle Fracture – Medical Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 1</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to ankle fractures</td>
</tr>
<tr>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies</td>
</tr>
<tr>
<td>• Demonstrates knowledge of non-operative treatment options and surgical indications</td>
</tr>
<tr>
<td>• Demonstrates knowledge of ankle fractures anatomy and basic surgical approaches</td>
</tr>
<tr>
<td>• Understands basic pre-surgical planning and templating</td>
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## Ankle Fracture – Patient Care

<table>
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<tr>
<th>Level 1</th>
<th>Level 2</th>
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<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
</table>
| • Obtains history and performs basic physical exam  
  • Appropriately orders basic imaging studies  
  • Prescribes non-operative treatments  
  • Splints fracture appropriately  
  • Provides basic peri-operative management  
  • Lists potential complications | • Obtains focused history and performs focused exam; recognizes implications of soft tissue injury  
  • Appropriately interprets basic imaging studies  
  • Prescribes and manages non-operative treatment  
  • Performs a closed reduction  
  • Completes pre-operative planning with instrumentation and implants  
  • Performs surgical exposure of the lateral malleolus  
  • Provides post-operative management and rehabilitation  
  • Capable of diagnosis and early management of complications | • Appropriately orders and interprets advanced imaging studies (e.g., stress views, computed tomography [CT] scan)  
  • Provides a comprehensive assessment of most fractures on imaging studies  
  • Completes comprehensive pre-operative planning with alternatives  
  • Performs surgical reduction and fixation of a simple fracture (e.g., lateral or bimalleolar ankle fracture)  
  • Modifies and adjusts post-operative treatment plan as needed  
  • Capable of treating complications both intra-operatively and post-operatively (e.g., wound breakdown following malleolar fixation) | • Provides comprehensive assessment of complex fracture patterns on imaging studies (e.g., pilon fracture)  
  • Recognizes indications for and provides non-operative treatment of an unstable fracture (e.g., diabetes, medical comorbidities, non-compliance)  
  • Performs surgical reduction and fixation of a moderately complex fracture (e.g., open reduction internal fixation [ORIF] trimalleolar ankle fracture or simple pilon fracture)  
  • Performs surgical reduction and fixation of a full range of fractures and dislocations (e.g., ORIF complex pilon fracture)  
  • Develops unique, complex post-operative management plans  
  • Surgically treats complex complications (e.g., revision fixation after failed ORIF) | • Performs surgical reduction and fixation of a full range of fractures and dislocations (e.g., ORIF complex pilon fracture)  
  • Develops unique, complex post-operative management plans  
  • Surgically treats complex complications (e.g., revision fixation after failed ORIF) |

**Comments:**

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<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
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<tbody>
<tr>
<td>• Understands the anatomy of carpal tunnel/median nerve</td>
<td>• Demonstrates knowledge of the differential diagnosis of neuropathic surgery (e.g., pronator syndrome, cubital tunnel, thoracic outlet, cervical radiculopathy, peripheral neuropathy)</td>
<td>• Demonstrates knowledge of current literature and alternatives to surgery</td>
<td>• Understands controversies within field (e.g., endoscopic versus open, use of electrodiagnostics)</td>
<td>• Primary author/presenter of original work within the field</td>
</tr>
<tr>
<td>• Understands the normal physiology of the median nerve</td>
<td>• Understands risk factors associated with Carpal Tunnel Syndrome (CTS) (e.g., diabetes, inflammatory arthritis, pregnancy, hypothyroidism)</td>
<td>• Understands the capabilities and limitations of electrodiagnostic studies</td>
<td>• Understands influence of comorbidities</td>
<td></td>
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<tr>
<td>• Understands natural history of CTS</td>
<td>• Demonstrates knowledge of median nerve motor/sensory distribution, thumb abduction, thenar numbness, anterior interosseous nerve (AIN) weakness, cervical radiculopathy</td>
<td>• Demonstrates knowledge of complications of surgical management (e.g., location of median nerve [MN] with respect to superficial arch, recurrent motor branch, palmar cutaneous branch, Guyon's canal)</td>
<td>• Demonstrates knowledge of complications of surgical management (e.g., location of median nerve [MN] with respect to superficial arch, recurrent motor branch, palmar cutaneous branch, Guyon's canal)</td>
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</tr>
<tr>
<td>• Understands the pathophysiology of nerve compression (e.g., increased carpal tunnel pressure, nerve ischemia)</td>
<td>• Understands surgical options (e.g., open, endoscopic)</td>
<td>• Understands the pathophysiology of nerve compression (e.g., increased carpal tunnel pressure, nerve ischemia)</td>
<td>• Understands surgical options (e.g., open, endoscopic)</td>
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<tr>
<th>Carpal Tunnel – Patient Care</th>
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<tbody>
<tr>
<td>• Obtains basic history and performs basic physical exam</td>
<td>• Obtains focused history, including identifying night pain, paresthesias</td>
<td>• Evaluates other sites of MN compression (e.g., pronator syndrome, cervical radiculopathy)</td>
<td>• Performs Carpal Tunnel Release (CTR) (e.g., open or endoscopic)</td>
<td>• Capable of surgical management of major complications (e.g., injury to superficial arch, ulnar artery, branches of median nerve, or median nerve)</td>
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</tr>
<tr>
<td>• Lists potential surgical complications (e.g., infection, scar sensitivity, neurovascular injury)</td>
<td>• Performs median nerve motor/sensory evaluation (e.g., MN numbness, thumb abduction)</td>
<td>• Interprets electrodiagnostic tests</td>
<td>• Capable of treating simple complications (e.g., infection, wound healing)</td>
<td>• Capable of opposition transfer (e.g., palmaris longus, extensor indicis pollicis [EIP], or flexor digitorum superficialis [FDS])</td>
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<td>• Performs provocative maneuvers (e.g., Tinel, Phalen, MN compression test)</td>
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<td>• Capable of performing complex postoperative management (e.g., worsening numbness, worsening pain, additional radiating symptoms)</td>
<td>• Capable of performing revision carpal tunnel surgery</td>
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<td></td>
<td>• Appropriately considers electrodiagnostic test</td>
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<td>• Capable of surgical management of major complications (e.g., injury to superficial arch, ulnar artery, branches of median nerve, or median nerve)</td>
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<td>• Prescribes non-operative treatments (e.g., night splints, steroid injection when appropriate)</td>
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<td>• Capable of opposition transfer (e.g., palmaris longus, extensor indicis pollicis [EIP], or flexor digitorum superficialis [FDS])</td>
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<td>• Capable of diagnosing surgical complications (e.g., injury to the median nerve or its branches and vascular injury)</td>
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<td>• Capable of performing revision carpal tunnel surgery</td>
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<td></td>
<td>• Provides simple post-operative management and rehabilitation</td>
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<th>Degenerative Spinal Conditions – Medical Knowledge</th>
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<tr>
<td><strong>Level 1</strong></td>
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<tr>
<td>- Demonstrates knowledge of pathophysiology related to lumbar and cervical degenerative conditions</td>
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<tr>
<td>- Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., cervical or lumbar radiographs)</td>
</tr>
<tr>
<td>- Demonstrates knowledge of physical exam of cervical and lumbar spine and related neurologic and provocative signs</td>
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<tr>
<td>- Demonstrates knowledge of general peri-operative patient care</td>
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### Degenerative Spinal Conditions - Patient Care

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<tbody>
<tr>
<td>- Obtains focused history and performs physical exam</td>
<td>- Appropriately orders basic imaging studies</td>
<td>- Provides complex non-operative treatment (e.g., NSAIDS, physical therapy, etc.)</td>
<td>- Completes comprehensive pre-operative planning, with attention to potential complications and alternatives, and post-operative criteria for acceptable intra-operative result</td>
<td>- Completes comprehensive pre-operative planning with alternatives and criteria for acceptable intra-operative result for complex cases (e.g., revision surgery)</td>
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<tr>
<td>- Performs basic imaging studies</td>
<td>- Appropriately interprets basic imaging studies (MRI, CT, etc.) or correlates findings with other diagnostic examinations</td>
<td>- Completes comprehensive pre-operative planning with alternatives and criteria for acceptable intra-operative result (e.g., fusion cages)</td>
<td>- Completes comprehensive planning with alternatives and criteria for acceptable intra-operative result (e.g., fusion cages)</td>
<td>- Completes comprehensive planning with alternatives and criteria for acceptable intra-operative result (e.g., fusion cages)</td>
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<tr>
<td>- Recognizes indications for and performs basic care</td>
<td>- Provides procedure-specific pre-operative planning and criteria for acceptable intra-operative result (e.g., HNP with radiculopathy)</td>
<td>- Completes comprehensive pre-operative planning with alternatives and criteria for acceptable intra-operative result (e.g., HNP with radiculopathy)</td>
<td>- Completes comprehensive pre-operative planning with alternatives and criteria for acceptable intra-operative result (e.g., HNP with radiculopathy)</td>
<td>- Completes comprehensive pre-operative planning with alternatives and criteria for acceptable intra-operative result (e.g., HNP with radiculopathy)</td>
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<tr>
<td>- Provides basic/general peri-operative management</td>
<td>- Provides advanced peri-operative management</td>
<td>- Provides advanced peri-operative management</td>
<td>- Provides advanced peri-operative management</td>
<td>- Provides advanced peri-operative management</td>
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<tr>
<td>- Lists potential complications</td>
<td>- Provides advanced care (e.g., resuscitation, critical care)</td>
<td>- Provides advanced care (e.g., resuscitation, critical care)</td>
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## Diabetic Foot – Medical Knowledge

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<tr>
<td>• Demonstrates knowledge of pathophysiology related to Diabetes mellitus (e.g., neuropathy, retinopathy, renal disease, peripheral vascular disease)</td>
<td>• Understands diabetic foot conditions and staging systems (e.g., infection vs. Charcot, Eichenholz classification)</td>
<td>• Demonstrates knowledge of current literature and alternative treatments (e.g., debridement, off-loading, immobilization)</td>
<td>• Understands controversies within the field (e.g., non-operative vs. operative management of osteomyelitis)</td>
<td>• Primary author/presenter of original work within the field</td>
</tr>
<tr>
<td>• Knowledge of medical management of Diabetes mellitus (e.g., glycemic control, diabetic diet)</td>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., x-ray signs of osteomyelitis, Charcot changes)</td>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., CT and MRI signs of osteomyelitis)</td>
<td>• Applies understanding of natural history to patient-specific clinical decision-making</td>
<td></td>
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<tr>
<td>• Demonstrates some knowledge of natural history of Diabetes mellitus</td>
<td>• Demonstrates some knowledge of diabetic foot conditions (neuropathic ulcer risk factors) and the effects of intervention (e.g., offloading and immobilization for Charcot, debridement and antibiotics for infection)</td>
<td>• Demonstrates some knowledge of abnormal gait mechanics and limb alignment and adjacent joint function, diabetic shoe wear and orthotics (e.g., apopulsive gait, antalgic gait, loss of proprioception and balance)</td>
<td>• Understands alternative surgical approaches (e.g., Plantar approach, complex amputations of the foot)</td>
<td></td>
</tr>
<tr>
<td>• Demonstrates knowledge of foot anatomy</td>
<td>• Demonstrates some knowledge of diabetic foot conditions (neuropathic ulcer risk factors) and the effects of intervention (e.g., offloading and immobilization for Charcot, debridement and antibiotics for infection)</td>
<td>• Demonstrates some knowledge of abnormal gait mechanics and limb alignment and adjacent joint function, diabetic shoe wear and orthotics (e.g., apopulsive gait, antalgic gait, loss of proprioception and balance)</td>
<td>• Understands alternative surgical approaches (e.g., Plantar approach, complex amputations of the foot)</td>
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<tr>
<td>• Understands basic science of wound healing</td>
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<th>Diabetic Foot – Patient Care</th>
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<td><strong>Level 1</strong></td>
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<tr>
<td>• Obtains history and performs basic physical exam</td>
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<tr>
<td>• Appropriately orders basic imaging studies (e.g., three or four weight-bearing views of the foot)</td>
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<tr>
<td>• Provides basic peri-operative management (e.g., pre- and post-operative orders, labs, consults)</td>
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<tr>
<td>• Lists potential complications</td>
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<td><strong>Level 2</strong></td>
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<tr>
<td>• Obtains focused history and performs focused exam</td>
</tr>
<tr>
<td>• Appropriately interprets basic imaging studies</td>
</tr>
<tr>
<td>• Prescribes and manages non-operative treatment (e.g., wound care, antibiotics, off-loading, immobilization, depth shoes, accommodative orthotics)</td>
</tr>
<tr>
<td>• Completes pre-operative planning including vascular assessment and the potential for wound healing (e.g., ankle-brachial indicis [ABIs] endovascular consultation)</td>
</tr>
<tr>
<td>• Performs one basic surgical approach to the Diabetic foot (e.g., medial or lateral)</td>
</tr>
<tr>
<td>• Provides post-operative management and rehabilitation (PT orders with goals and restrictions)</td>
</tr>
<tr>
<td>• Capable of diagnosis and early management of complications (e.g., wound healing problems, infection, DVT)</td>
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<tr>
<td>• Appropriately orders and interprets advanced imaging studies (e.g., CT and MRI with or without contrast)</td>
</tr>
<tr>
<td>• Completes comprehensive pre-operative planning with alternatives for limb salvage (e.g., revascularization combined with reconstruction)</td>
</tr>
<tr>
<td>• Modifies and adjusts post-operative treatment plan as needed</td>
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<td><strong>Level 4</strong></td>
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<tr>
<td>• Provides complex non-operative treatment (e.g., multiple co-morbidities, non-compliant, etc.)</td>
</tr>
<tr>
<td>• Capable of performing alternative surgical approaches to the Diabetic foot (e.g., multiple or plantar approaches)</td>
</tr>
<tr>
<td>• Capable of treating complications, both intra- and post-operatively</td>
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<td><strong>Level 5</strong></td>
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<tr>
<td>- Develops unique, complex post-operative management plans</td>
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<td>- Surgically treats complex complications</td>
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## Diaphyseal Femur and Tibia Fracture – Medical Knowledge

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<tbody>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to diaphyseal femur and tibia fractures&lt;br&gt; • Correlates anatomic knowledge to imaging findings on basic imaging studies&lt;br&gt; • Demonstrates knowledge of medical and surgical comorbidities</td>
<td>• Able to describe and classify fractures&lt;br&gt; • Correlates anatomic knowledge to imaging findings on advanced imaging studies&lt;br&gt; • Demonstrates knowledge of associated injuries and impact on surgical care (e.g., femoral neck fracture, associated skeletal injuries)&lt;br&gt; • Understands implication of open fractures and soft tissue injury&lt;br&gt; • Demonstrates knowledge of bone biology, osteoporosis and bone health management&lt;br&gt; • Demonstrates knowledge of natural history of diaphyseal femur and tibia fractures&lt;br&gt; • Demonstrates knowledge of diaphyseal femur and tibia fractures anatomy and basic surgical approaches&lt;br&gt; • Understands basic pre-surgical planning and templating&lt;br&gt; • Demonstrates knowledge of non-operative treatment options and surgical indications&lt;br&gt; • Demonstrates knowledge of surgical and non-operative complications (e.g., compartment syndrome, fat emboli, infection)</td>
<td>• Demonstrates knowledge of current literature and alternative treatments&lt;br&gt; • Demonstrates knowledge of impact on polytrauma on management of diaphyseal femur and tibia fractures&lt;br&gt; • Understands biomechanics and implant choices&lt;br&gt; • Understands the effects of intervention on natural history of diaphyseal femur and tibia fractures&lt;br&gt; • Understands alternative surgical approaches&lt;br&gt; • Recognizes surgical indications in complex fractures and the polytrauma patient</td>
<td>• Understands controversies within the field (e.g., initial management of femur fracture in the polytrauma patient)&lt;br&gt; • Applies understanding of natural history to clinical decision-making</td>
<td>• Primary author/presenter of original work within the field</td>
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### Diaphyseal Femur and Tibia Fracture – Patient Care

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<tbody>
<tr>
<td>• Obtains history and performs basic physical exam</td>
<td>• Obtains focused history and performs focused exam</td>
<td>• Appropriately orders and interprets advanced imaging studies</td>
<td>• Performs surgical repair to a moderately complex fracture (e.g., able to perform intramedullary nailing of segmental femur fracture)</td>
<td>• Performs surgical repair to a complex fracture (e.g., able to perform intramedullary nailing of distal tibia fracture with intraarticular extension)</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies</td>
<td>• Appropriately interprets basic imaging studies</td>
<td>• Provides complex non-operative treatment</td>
<td>• Performs alternative surgical approaches for femur and tibia fractures (e.g., open reduction techniques)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Splints fracture appropriately</td>
<td>• Prescribes and manages non-operative treatment</td>
<td>• Completes comprehensive pre-operative planning with alternatives</td>
<td>• Performs complex wound management and debridement (e.g., understands need for consultation for flap coverage)</td>
<td>• Surgically treats complex complications (e.g., treats femoral neck fracture identified after femoral nailing)</td>
</tr>
<tr>
<td>• Provides basic perioperative management</td>
<td>• Performs a closed reduction</td>
<td>• Performs surgical repair to a simple fracture</td>
<td>• Prioritizes the needs of the polytrauma patient (e.g., timing of long bone fixation, works with consulting teams)</td>
<td>• Capable of treating complications both intraoperatively and post-operatively (e.g., manages post-operative infection)</td>
</tr>
<tr>
<td>• Assesses for limb perfusion and compartment syndrome</td>
<td>• Performs basic surgical approaches</td>
<td>• Effectively uses intraoperative imaging</td>
<td>• Capable of performing compartment release</td>
<td>• Performs surgical repair to a complex fracture (e.g., able to perform intramedullary nailing of segmental femur fracture)</td>
</tr>
<tr>
<td>• Lists potential complications</td>
<td>• Performs patient positioning for operative fixation (e.g., use of fracture table)</td>
<td>• Modifies and adjusts post-operative treatment plan as needed</td>
<td>• Capable of performing compartment release</td>
<td>• Performs surgical repair to a complex fracture (e.g., able to perform intramedullary nailing of distal tibia fracture with intraarticular extension)</td>
</tr>
<tr>
<td>• Obtains focused history and performs focused exam</td>
<td>• Provides post-operative management and rehabilitation</td>
<td>• Initiates management of limb reperfusion and compartment syndrome</td>
<td>• Capable of treating complications both intraoperatively and post-operatively (e.g., manages post-operative infection)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Appropriately interprets basic imaging studies</td>
<td>• Performs basic open wound management and debridement</td>
<td>• Recognizes the needs of the polytrauma patient</td>
<td>• Prioritizes the needs of the polytrauma patient (e.g., timing of long bone fixation, works with consulting teams)</td>
<td>• Surgically treats complex complications (e.g., treats femoral neck fracture identified after femoral nailing)</td>
</tr>
<tr>
<td>• Prescribes and manages non-operative treatment</td>
<td>• Initiates management of limb reperfusion and compartment syndrome</td>
<td>• Capable of diagnosis and early management of complications</td>
<td>• Capable of treating complications both intraoperatively and post-operatively (e.g., manages post-operative infection)</td>
<td>• Performs surgical repair to a complex fracture (e.g., able to perform intramedullary nailing of distal tibia fracture with intraarticular extension)</td>
</tr>
<tr>
<td>• Performs a closed reduction</td>
<td>• Recognizes the needs of the polytrauma patient</td>
<td></td>
<td>• Prioritizes the needs of the polytrauma patient (e.g., timing of long bone fixation, works with consulting teams)</td>
<td>• Surgically treats complex complications (e.g., treats femoral neck fracture identified after femoral nailing)</td>
</tr>
<tr>
<td>• Performs basic surgical approaches</td>
<td>• Capable of diagnosis and early management of complications</td>
<td></td>
<td>• Capable of treating complications both intraoperatively and post-operatively (e.g., manages post-operative infection)</td>
<td>• Performs surgical repair to a complex fracture (e.g., able to perform intramedullary nailing of distal tibia fracture with intraarticular extension)</td>
</tr>
<tr>
<td>• Performs patient positioning for operative fixation (e.g., use of fracture table)</td>
<td>• Capable of diagnosis and early management of complications</td>
<td></td>
<td>• Prioritizes the needs of the polytrauma patient (e.g., timing of long bone fixation, works with consulting teams)</td>
<td>• Surgically treats complex complications (e.g., treats femoral neck fracture identified after femoral nailing)</td>
</tr>
<tr>
<td>• Provides post-operative management and rehabilitation</td>
<td></td>
<td></td>
<td>• Capable of treating complications both intraoperatively and post-operatively (e.g., manages post-operative infection)</td>
<td>• Performs surgical repair to a complex fracture (e.g., able to perform intramedullary nailing of distal tibia fracture with intraarticular extension)</td>
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<tr>
<td>• Performs basic open wound management and debridement</td>
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<td></td>
<td>• Prioritizes the needs of the polytrauma patient (e.g., timing of long bone fixation, works with consulting teams)</td>
<td>• Surgically treats complex complications (e.g., treats femoral neck fracture identified after femoral nailing)</td>
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<tr>
<td>• Initiates management of limb reperfusion and compartment syndrome</td>
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<td></td>
<td>• Capable of treating complications both intraoperatively and post-operatively (e.g., manages post-operative infection)</td>
<td>• Performs surgical repair to a complex fracture (e.g., able to perform intramedullary nailing of distal tibia fracture with intraarticular extension)</td>
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<tr>
<td>• Recognizes the needs of the polytrauma patient</td>
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<td></td>
<td>• Prioritizes the needs of the polytrauma patient (e.g., timing of long bone fixation, works with consulting teams)</td>
<td>• Surgically treats complex complications (e.g., treats femoral neck fracture identified after femoral nailing)</td>
</tr>
<tr>
<td>• Capable of diagnosis and early management of complications</td>
<td></td>
<td></td>
<td>• Capable of treating complications both intraoperatively and post-operatively (e.g., manages post-operative infection)</td>
<td>• Performs surgical repair to a complex fracture (e.g., able to perform intramedullary nailing of distal tibia fracture with intraarticular extension)</td>
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<th>Distal Radius Fracture (DRF) – Medical Knowledge</th>
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<tr>
<td><strong>Level 1</strong></td>
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<tr>
<td>• Demonstrates knowledge of anatomy</td>
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<td>• Understands basic imaging</td>
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<tr>
<td>• Obtains history and performs basic physical exam</td>
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<tr>
<td>• Orders/interprets basic imaging studies</td>
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<tr>
<td>• Splints fracture appropriately</td>
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<tr>
<td>• Provides basic post-operative management and rehab</td>
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<tr>
<td>• Lists potential complications (e.g., infections, hardware failure tendon injury, Complex Regional Pain Syndrome [CRPS], carpal tunnel syndrome, malreduction)</td>
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<tbody>
<tr>
<td>• Demonstrates knowledge of fractures (e.g., olecranon, radial head, coronoid fracture, terrible triad fracture, distal humerus fracture, fracture dislocation)</td>
<td>• Demonstrates mechanism of injury and knowledge of fracture classification and soft tissue injury (e.g., olecranon, radial head, coronoid fracture, terrible triad fracture, distal humerus fracture, fracture dislocation)</td>
<td>• Demonstrates knowledge of current literature and alternatives (e.g., fracture repair vs. replacement, post-operative stiffness concepts)</td>
<td>• Understands controversies within field (e.g., tension band vs. plating olecranon fractures, elbow replacement for elderly distal humerus fractures; radial head repair vs. replacement)</td>
<td>• Participates in research in the field with publication</td>
</tr>
<tr>
<td>• Demonstrates knowledge of anatomy (e.g., elbow joint, radial head, coronoid, olecranon, distal humerus, elbow ligaments)</td>
<td>• Demonstrates knowledge of imaging studies/lab studies (e.g., radiographs anteroposterior [AP]/lateral/oblique/axial)</td>
<td>• Understands rehabilitation mechanics (e.g., range of motion therapy, dynamic/static stretch splinting)</td>
<td>• Understands how to avoid/prevent potential complications</td>
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<tr>
<td>• Understands basic imaging studies</td>
<td>• Understands surgical approaches (e.g., soft tissue envelope, cutaneous nerves, ulnar nerve treatment)</td>
<td>• Understands biomechanics and implant choices (e.g., radial head replacement, compression headless screws, elbow replacement types)</td>
<td>• Demonstrates knowledge of pathophysiology of elbow stiffness (e.g., intrinsic, extrinsic, hardware placement)</td>
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<td>• Understands biology of fracture healing</td>
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<td>• Understands post-operative imaging studies/implant positioning</td>
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<td>• Understands advanced imaging studies (e.g., post-operative x-rays, CT scans for fracture healing)</td>
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<th>Adult Elbow Fracture – Patient Care</th>
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<td><strong>Level 1</strong></td>
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<tr>
<td>• Obtains history and basic physical (e.g., age, gender, mechanism of injury, deformity, skin integrity, open/closed injury)</td>
</tr>
<tr>
<td>• Splints fracture appropriately</td>
</tr>
<tr>
<td>• Provides basic peri-operative management (e.g., post-operative orders, ice, elevation, compression)</td>
</tr>
<tr>
<td>• Lists potential complications (e.g., infection, hardware failure, stiffness, reflex sympathetic dystrophy [RSD], neurovascular injury, posttraumatic arthritis)</td>
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<tr>
<td>• Provides post-operative management and rehabilitation (e.g., splinting and ROM therapy)</td>
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**Hip and Knee Osteo Arthritis (OA) – Medical Knowledge**

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<tbody>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to hip and knee arthritis</td>
<td>• Able to classify disease stage/severity and recognizes implications of disease processes (OA, Femoroacetabular impingement [FAI], inflammatory arthritis, osteonecrosis)</td>
<td>• Demonstrates knowledge of current literature and alternative treatments</td>
<td>• Understands controversies within the field</td>
<td>• Primary author/presenter of original work within the field</td>
</tr>
<tr>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies</td>
<td>• Understands the importance of comorbidities, thromboembolic prophylaxis, infection prevention and diagnosis</td>
<td>• Understands biomechanics</td>
<td>• Applies understanding of natural history to clinical decision-making</td>
<td>• Understands revision THR and TKR implants (e.g., metaphyseal vs. diaphyseal fixation, tapered vs. fully-porous implants)</td>
</tr>
<tr>
<td>• Demonstrates some knowledge of natural history of hip and knee arthritis</td>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies</td>
<td>• Understands alternative surgical approaches (e.g., non-arthroplasty: arthroscopy, osteotomy)</td>
<td>• Understands principles of failure mechanism of total hip replacement (THR) and total knee replacement (TKR) (e.g., loosening, fracture, infection, osteolysis, instability)</td>
<td>• Understands basic principles of revision THR and TKR</td>
</tr>
<tr>
<td>• Demonstrates knowledge of hip and knee arthritis anatomy and basic surgical approaches</td>
<td>• Understands the effects of intervention on natural history of hip and knee arthritis</td>
<td>• Understands alternative implant choices/biomaterials (e.g., alternative bearings, unicompartmental approaches)</td>
<td>• Understands revision THR and TKR implants (e.g., metaphyseal vs. diaphyseal fixation, tapered vs. fully-porous implants)</td>
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</tr>
<tr>
<td>• Demonstrates knowledge of non-operative treatment options and surgical indications</td>
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## Hip and Knee Osteoarthritis (OA) – Patient Care

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<tbody>
<tr>
<td>• Obtains history and performs basic physical exam</td>
<td>• Obtains focused history and performs focused exam</td>
<td>• Appropriately orders and interprets advanced imaging studies (e.g., MRI, CT, nuclear medicine imaging, and advanced radiographs views)</td>
<td>• Capable of performing alternative surgical approaches to the hip and knee arthritis</td>
<td>• Competently performs two or more approaches to the hip and knee</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies</td>
<td>• Appropriately interprets basic imaging studies</td>
<td>• Appropriately recommends surgical intervention</td>
<td>• Capable of performing primary THR and TKR</td>
<td>• Capable of performing complex primary and simple revision THR and TKR (e.g., hip dysplasia, hip protrusio, valgus knee, loose components, uniarthroplasty)</td>
</tr>
<tr>
<td>• Prescribes non-operative treatments (e.g., NSAIDs, physical therapy, assistive devices)</td>
<td>• Manages non-operative treatment (e.g., NSAIDs, physical therapy, assistive devices, injections)</td>
<td>• Completes comprehensive pre-operative planning with alternatives</td>
<td>• Capable of treating complications both intra- and post-operatively (e.g., peri-prosthetic fractures, infections, instability)</td>
<td>• Surgically treats complex complications (e.g., peri-prosthetic fractures, knee instability)</td>
</tr>
<tr>
<td>• Provides basic peri-operative management (e.g., pre- and post-operative assessment)</td>
<td>• Completes pre-operative planning with instrumentation and implants (e.g., implant templating, instruments needed)</td>
<td>• Capable of surgically treating simple complications (e.g., closed reduction, irrigation, and debridement)</td>
<td>• Provides prophylaxis and manages thromboembolic disease</td>
<td>• Develops unique, complex post-operative management plans (e.g., infections, dislocations, neurovascular compromise)</td>
</tr>
<tr>
<td>• Lists potential complications (e.g., infections, dislocations, thromboembolic disease, peri-prosthetic fracture, neurovascular compromise)</td>
<td>• Capable of performing one basic surgical approach to the hip and knee</td>
<td>• Provides post-operative management and rehabilitation (e.g., orders appropriate peri-operative medications and mobilization)</td>
<td>• Provides prophylaxis and manages thromboembolic disease</td>
<td>• Surgically treats complex complications (e.g., peri-prosthetic fractures, knee instability)</td>
</tr>
<tr>
<td>• Assesses for risk of thromboembolic disease</td>
<td>• Provides post-operative management and rehabilitation (e.g., orders appropriate peri-operative medications and mobilization)</td>
<td>• Capable of diagnosis and early management of complications (e.g., infections, dislocations)</td>
<td>• Provides prophylaxis and manages thromboembolic disease</td>
<td>• Surgically treats complex complications (e.g., peri-prosthetic fractures, knee instability)</td>
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### Hip Fracture – Medical Knowledge

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<tbody>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to hip fracture</td>
<td>• Able to describe and classify fractures</td>
<td>• Demonstrates knowledge of current literature and alternative treatments</td>
<td>• Understands controversies within the field (e.g., hemiarthroplasty vs. total hip for displaced femoral neck fracture)</td>
<td>• Primary author/presenter of original work within the field</td>
</tr>
<tr>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies</td>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies</td>
<td>• Understands the effects of intervention on natural history of hip fracture</td>
<td>• Applies understanding of natural history to clinical decision making</td>
<td>•</td>
</tr>
<tr>
<td>• Demonstrates knowledge of non-operative treatment options and surgical indications</td>
<td>• Demonstrates knowledge of bone biology, osteoporosis and bone health management</td>
<td>• Understands alternative surgical approaches</td>
<td>• Understands biomechanics and implant choices</td>
<td>•</td>
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<tr>
<td>• Demonstrates knowledge of natural history of hip fracture</td>
<td>• Demonstrates knowledge of hip fracture anatomy and basic surgical approaches</td>
<td>•</td>
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</tr>
<tr>
<td>• Demonstrates knowledge of natural history of hip fracture</td>
<td>• Understands basic pre-surgical planning and templating</td>
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<tr>
<td>• Demonstrates knowledge of hip fracture</td>
<td>• Understands comorbidities and impact on fracture treatment</td>
<td>•</td>
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<tr>
<td>• Demonstrates knowledge of current literature and alternative treatments</td>
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<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies</td>
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<tr>
<td>• Demonstrates knowledge of bone biology, osteoporosis and bone health management</td>
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<td>• Understands basic pre-surgical planning and templating</td>
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<td>• Understands comorbidities and impact on fracture treatment</td>
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## Hip Fracture – Patient Care

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<tbody>
<tr>
<td>• Obtains history and performs basic physical exam</td>
<td>• Obtains focused history and performs focused exam</td>
<td>• Completes comprehensive assessment of fracture patterns on imaging</td>
<td>• Capable of surgical repair to moderately complex fractures (e.g.,</td>
<td>• Capable of surgical repair of complex fractures (e.g., open reduction</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies</td>
<td>• Appropriately interprets basic imaging studies</td>
<td>studies recognizes reverse obliquity fractures</td>
<td>unstable intertrochanteric femur fracture)</td>
<td>internal fixation of femoral neck fracture)</td>
</tr>
<tr>
<td>• Prescribes non-operative treatments</td>
<td>• Prescribes and manages non-operative treatment</td>
<td>• Interprets diagnostic studies for fragility fractures with</td>
<td>• Capable of treating complications both intra- and post-operatively</td>
<td>• Capable of surgical treatment of complex complications (e.g.,</td>
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<tr>
<td>• Provides basic peri-operative management</td>
<td>• Recognizes and evaluates fragility fractures (e.g., orders appropriate</td>
<td>appropriate management and/or referral</td>
<td>(e.g., manages a post-operative infection)</td>
<td>revision fixation after failed ORIF, intertrochanteric osteotomy)</td>
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<tr>
<td>• Lists potential complications</td>
<td>workup and/or consult)</td>
<td>• Arranges for long-term management of geriatric patients (e.g.,</td>
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<td>management of bone health, discharge planning to long-term care)</td>
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<td>• Completes comprehensive pre-operative planning with alternatives</td>
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<td>• Capable of surgical repairs to a simple fracture (e.g., stable</td>
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<td>intertrochanteric femur fracture, minimally displaced femoral neck</td>
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<td>fracture)</td>
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<td>• Modifies and adjusts post-operative treatment plan as needed</td>
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<td>• Provides prophylaxis and manages thromboembolic disease</td>
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<td>• Capable of surgical treatment of complex complications (e.g.,</td>
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<td>revision fixation after failed ORIF, intertrochanteric osteotomy)</td>
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## Metastatic Bone Lesion – Medical Knowledge

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<tr>
<td>• Demonstrates knowledge of normal bone development  &lt;br&gt; • Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., plain radiographs)  &lt;br&gt; • Demonstrates knowledge of most common sites of metastatic disease and primary sites of disease (e.g., primary sites breast, prostate, lung, kidney, thyroid)</td>
<td>• Demonstrates knowledge of pathophysiology related to destructive bone lesion (e.g., understands the function of receptor activator of nuclear factor kappa-B ligand [RANKL], osteoprotegerin [OPG] and osteoclasts in the bone turnover in skeletal metastasis)  &lt;br&gt; • Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., CT scan of chest/abdomen/pelvis, MRI of spine)  &lt;br&gt; • Demonstrates some knowledge of natural history of destructive bone lesion (e.g., understands behavior of various histologies [i.e., lung vs. breast cancer]; understands the different behavior of primary bone sarcoma vs. bone metastasis)  &lt;br&gt; • Demonstrates knowledge of destructive bone lesion anatomy and basic surgical approaches (e.g., understands the location of neurovascular</td>
<td>• Demonstrates knowledge of current literature and alternative treatments (e.g., alternative treatments, including external beam radiation, radiofrequency ablation, cryoablation, bisphosphonate use)  &lt;br&gt; • Understands indications for prophylactic fixation (e.g., be aware of at least one scoring system [Mirels, Beals] as well as more nuanced factors [histology, response to treatment, etc.])  &lt;br&gt; • Understands the effects of intervention on natural history of destructive bone lesion  &lt;br&gt; • Understands alternative surgical approaches (e.g., understands the role of resection/prosthetic replacement vs. intramedullary stabilization depending on location of lesion)  &lt;br&gt; • Understands role of radiation or medical therapy (vs. surgical options; their use post-operatively; specific role of chemotherapy,</td>
<td>• Understands controversies within the field (e.g., resection/prosthetic reconstruction vs. intramedullary fixation; short vs. long stem hip reconstruction; bipolar vs. total hip arthroplasty (THA) for hip lesions; resection of solitary bone metastasis)  &lt;br&gt; • Formulates differential diagnosis based on imaging studies  &lt;br&gt; • Able to perform risk assessment of operative vs. non-operative care (e.g., understands concepts of nutritional status, current function/activity, medical comorbidities/American Society of Anesthesiologists [ASA] level)  &lt;br&gt; • Applies understanding of natural history to clinical decision making (e.g., understands balance of expected lifespan to planned intervention [i.e., complex acetabular reconstruction for patient with widespread lung metastasis and six weeks to live]; develops</td>
<td>• Primary author/presenter of original work within the field</td>
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<tr>
<td>Structures in upper/lower extremities and pelvis; understand basic surgical approach to humeral and femoral nails</td>
<td>Hormonal therapy, bisphosphonates for common primary cancers that spread to bone</td>
<td>Shared-decision making skills for patient discussions/interactions</td>
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<tr>
<td>• Understands basic pre-surgical planning and templating</td>
<td>• Demonstrates knowledge of alternatives for primary sarcoma of bone (e.g., understand role of resection vs. palliative care; understands role of limb salvage vs. amputation)</td>
<td>• Understands biomechanics and implant choices (e.g., understands concepts of failure in compression vs. tension; understands the benefit of supplemental methylmethacrylate; understands the pros/cons of plate vs. rod fixation)</td>
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<td>• Demonstrates knowledge of non-operative treatment options and surgical indications (e.g., understands non-operative options, including protected weight-bearing/radiation of lower extremity lesions, as well as bracing of upper extremity lesion)</td>
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### Metastatic Bone Lesion – Patient Care

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<tr>
<td>• Obtains history and performs basic physical exam (e.g., pain, function, past medical/surgical/social/ family history, review of systems, heart, lungs, extremity exam, including range of motion, strength, sensation, skin changes, tenderness)</td>
<td>• Obtains focused history and performs focused exam (e.g., history: specific questions re: past history of cancer or radiation, prior treatments, pre-existing pain, smoking or chemical exposure, constitutional symptoms such as fever; physical exam: notes lymph node involvement, lumps/nodules)</td>
<td>• Appropriately orders and interprets advanced imaging studies/lab studies (e.g., 3D radiographic studies to include CT and MRI, lab studies including role of serum protein electrophoresis [SPEP]/urine protein electrophoresis [UPEP], prostate specific antigen [PSA], other tumor markers)</td>
<td>• Recommends appropriate biopsy, including biopsy alternatives and appropriate techniques (e.g., understands role of open biopsy vs. needle biopsy)</td>
<td>• Discusses prognosis and end-of-life care with patients and family</td>
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<tr>
<td>• Appropriately orders basic imaging studies (e.g., plain radiographs, including AP/lateral of the lesion Joint above and below the lesion)</td>
<td>• Appropriately interprets basic imaging studies (e.g., able to describe the radiographic appearance [osteolytic, osteoblastic, etc.])</td>
<td>• Recommends complex non-operative treatment (radiofrequency ablation [RFA] or cryoablation, bisphosphonates kyphoplasty or vertebroplasty)</td>
<td>• Capable of performing prophylactic fixation based on diagnosis and risk (e.g., able to perform prophylactic intramedullary stabilization of femur, prophylactic bipolar hemiarthroplasty of the hip)</td>
<td>• Independently performs open biopsy</td>
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<tr>
<td>• Prescribes non-operative treatments (e.g., including protected weight-bearing bracing, no intervention)</td>
<td>• Prescribes and manages non-operative treatment (e.g., understands when to have the patient back to clinic for follow-up; understands when to order new radiographic imaging studies)</td>
<td>• Completes comprehensive pre-operative planning with alternatives</td>
<td>• Completes pre-operative preparation and consultation (e.g., oncology, radiation oncology, counseling)</td>
<td>• Performs endoprosthetic reconstruction for periarticular lesions (options include: megaprostheses of proximal humerus, proximal femur, distal femur, proximal tibia)</td>
</tr>
<tr>
<td>• Provides basic peri-operative management (e.g., intravenous [IV] antibiotics, IV fluids, DVT prophylaxis, pain control, nutrition)</td>
<td>• Completes pre-operative planning with instrumentation and implants</td>
<td>• Completes comprehensive pre-operative planning with alternatives</td>
<td>• Completes pre-operative preparation and consultation (e.g., oncology, radiation oncology, counseling)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Lists potential complications (e.g., including Infection, wound complications, neurovascular compromise, tumor)</td>
<td>• Capable of diagnosis and early management of complications</td>
<td>• Capable of diagnosis and early management of complications</td>
<td>• Modifies and adjusts post-operative treatment plan as needed</td>
<td>• Surgically treats complex complications (e.g., surgical treatment of hardware failure, periprosthetic fracture, progression of disease)</td>
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| progression, prosthetic hip dislocation, DVT/PE, pulmonary embolism [PE], pneumonia | (e.g., able to diagnose: infection, DVT/PE, wound breakdown, neurovascular compromise, hardware failure) | • Capable of treating post-operative complications (e.g., non-operative treatment of: infection, wound breakdown, DVT/PE) | for prosthetic reconstruction; understands approaches for resection of proximal humerus, distal femur and proximal tibia) | • Capable of surgical treatment of infection or wound breakdown |

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## Meniscal Tear – Medical Knowledge

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<tbody>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to meniscal tear</td>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., tear personality, chondral injury/changes)</td>
<td>• Demonstrates knowledge of current literature and alternative treatments</td>
<td>• Understands controversies within the field (e.g., repair techniques)</td>
<td>• Primary author/presenter of original work within the field</td>
</tr>
<tr>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., joint space height, Fairbank changes)</td>
<td>• Understands biology of meniscal healing</td>
<td>• Understands rehabilitation mechanics (e.g., quad strength closed vs. open chain)</td>
<td>• Understands how to prevent/avoid potential complications</td>
<td></td>
</tr>
<tr>
<td>• Understands mechanism of injury</td>
<td>• Understands the effects of intervention on natural history of meniscal tear</td>
<td>• Understands biomechanics and implant choices</td>
<td>• Applies understanding of natural history to clinical decision-making</td>
<td></td>
</tr>
<tr>
<td>• Demonstrates some knowledge of natural history of meniscal tear</td>
<td>• Demonstrates knowledge of meniscal anatomy and basic surgical approaches</td>
<td>• Understands alternative surgical approaches (e.g., repair vs. debridement)</td>
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<tr>
<td>• Demonstrates knowledge of non-operative treatment options and surgical indications</td>
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<tbody>
<tr>
<td>• Obtains history and performs basic physical exam (e.g., age, gender, HPI, PMHx, social history, ROM, joint tenderness, effusion, neurovascular status)</td>
<td>• Obtains focused history and performs focused exam (e.g., McMurray, Steinmann, applies compression)</td>
<td>• Appropriately orders and interprets advanced imaging studies (e.g., MRI findings)</td>
<td>• Capable of performing meniscal repair—all techniques open and arthroscopic</td>
<td>• Capable of performing revision of meniscal repair or meniscal transplant</td>
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</tr>
<tr>
<td>• Appropriately orders basic imaging studies (e.g., plain film radiographs)</td>
<td>• Appropriately interprets basic imaging studies (e.g., standing radiographs as needed, Fairbank changes)</td>
<td>• Provides complex non-operative treatment (e.g., concomitant injuries—ligament, fractures)</td>
<td>• Capable of performing alternative surgical approaches to a meniscal tear</td>
<td>• Capable of treating complex complications</td>
<td></td>
</tr>
<tr>
<td>• Prescribes non-operative treatments</td>
<td>• Prescribes and manages non-operative treatment (e.g., quad strength closed chain)</td>
<td>• Capable of performing diagnostic arthroscopy and meniscal debridement</td>
<td>• Modifies and adjusts post-operative treatment plan as needed (e.g., knee arthrofibrosis, continued pain)</td>
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<tr>
<td>• Provides basic peri-operative management (e.g., neurovascular status, ROM, brace)</td>
<td>• Injects/aspirates knee</td>
<td>• Capable of treating complications both intra- and post-operatively</td>
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<tr>
<td>• Lists potential complications (e.g., pain, infection, neurovascular injury, loss of motion, degenerative joint disease [DJD])</td>
<td>• Examines knee under anesthesia</td>
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<tr>
<td>• Capable of diagnosis and early management of complications</td>
<td>• Provides post-operative management and rehabilitation (e.g., ROM, quad strength closed chain, WB status)</td>
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<tr>
<td></td>
<td>• Capable of performing diagnostic arthroscopy and meniscal debridement</td>
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<td></td>
<td>• Demonstrates knowledge of common presentation of hip septic arthritis</td>
<td>• Demonstrates knowledge of pathophysiology of joint damage related to septic arthritis</td>
<td>• Demonstrates knowledge of the vascular supply in the skeletally immature hip</td>
<td>• Demonstrates knowledge of options and anatomy for surgical approaches</td>
<td>• Participates in research in the field with publication</td>
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<td>• Demonstrates knowledge of basic hip anatomy</td>
<td>• Demonstrates knowledge of basic surgical approach</td>
<td>• Demonstrates knowledge of microbiology and antibiotic choices</td>
<td>• Demonstrates knowledge of atypical infecting organisms and management options</td>
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<td></td>
<td>• Demonstrates knowledge of basic imaging studies</td>
<td>• Demonstrates knowledge of the differential diagnosis of the irritable hip</td>
<td>• Demonstrates knowledge of potential complications</td>
<td>• Demonstrates knowledge of clinical and laboratory data relevant to differential diagnosis</td>
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<tr>
<td></td>
<td>• Demonstrates knowledge of appropriate laboratory studies</td>
<td>• Understands natural history and the effects of intervention</td>
<td>• Demonstrates knowledge of advanced imaging studies</td>
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<tr>
<td>• Obtains history and performs basic physical exam</td>
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<tr>
<td>• Orders appropriate initial imaging and laboratory studies</td>
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<tr>
<td>• Provides initial management</td>
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<tr>
<td>• Lists potential complications</td>
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## Rotator Cuff Injury – Medical Knowledge

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<tbody>
<tr>
<td>• Understands surgical anatomy (e.g., rotator cuff muscles/tendons,</td>
<td>• Demonstrates knowledge of surgical indications (e.g., non-operative</td>
<td>• Demonstrates knowledge of current literature and alternatives</td>
<td>• Understands controversies within field. Examples: single vs.</td>
<td>• Participates in research in the field with publication cites/teaches</td>
</tr>
<tr>
<td>deltoid, axillary nerve position, acromion, biceps, labrum)</td>
<td>management, therapy, injections, rotator cuff repair, subacromial</td>
<td>understands pathophysiology of concomitant injuries (e.g., biceps</td>
<td>double row repairs, partial repair of massive tears, suprascapular</td>
<td>junior residents appropriate outcomes studies</td>
</tr>
<tr>
<td>Demonstrates knowledge of basic imaging studies: radiographs (e.g.,</td>
<td>decompression)</td>
<td>tendonitis, acromioclavicular joint disease, labral pathology,</td>
<td>nerve dysfunction</td>
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<tr>
<td>true AP, axillary, supraspinatus outlet)</td>
<td>Demonstrates knowledge of basic surgical approaches and portal</td>
<td>arthritis)</td>
<td>end stage rotator cuff tear arthropathy and treatment options</td>
<td></td>
</tr>
<tr>
<td>• Understands pathophysiology related to rotator cuff injury (e.g.,</td>
<td>placement (e.g., anterior, subacromial, posterior, accessory posterior)</td>
<td>Understands rehabilitation mechanics (e.g., Neer Phase 1-3)</td>
<td>Understands tear pattern, appropriate repair, biceps tenodesis (e.g.,</td>
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<tr>
<td>impingement, partial thickness cuff tears, extrinsic versus intrinsic</td>
<td>• Understands biomechanics and implant choices</td>
<td>• Understands natural history of rotator cuff disease (e.g.,</td>
<td>L-shaped, concentric, U-shaped, tissue quality, biceps subluxation)</td>
<td></td>
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<tr>
<td>theory of cuff tearing)</td>
<td>• Understands pathophysiology of failed rotator cuff repair (e.g.,</td>
<td>• Understands pathophysiology of failed rotator cuff repair (e.g.,</td>
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<tr>
<td>• Understands biology of soft tissue tendon healing</td>
<td>symptomatic vs. asymptomatic cuff tears, impingement, intrinsic</td>
<td>biology, implant failure, stiffness, infection, smoking, tendon</td>
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<tr>
<td>• Demonstrates knowledge of advanced imaging studies/lab studies (e.g.,</td>
<td>versus extrinsic mechanisms)</td>
<td>quality, vascularity)</td>
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<td>MRI, ultrasound, CT arthrogram)</td>
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# Rotator Cuff Injury – Patient Care

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<tr>
<td>- Obtains history and performs basic physical examination (e.g., age, gender, smoker, trauma, night pain, weakness, inspection for atrophy, ROM)</td>
<td>- Obtains focused history and performs physical examination (e.g., provocative tests, Neer/Hawkins, O'Brien's, lag signs, pseudoparalysis, lift-off, belly press, scapular dyskinesia)</td>
<td>- Interprets basic imaging studies (e.g., rotator cuff tear on MRI, muscle atrophy on MRI, proximal humeral migration on x-ray)</td>
<td>- Able to order and interpret advanced imaging studies (e.g., tear size, muscle atrophy, labral tears, arthritis, subscapularis tears)</td>
<td>- Capable of performing complex arthroscopic rotator cuff repairs, revision rotator cuff repair, tendon transfers</td>
</tr>
<tr>
<td>- Lists surgical complications (e.g., infection, stiffness, RSD, retear)</td>
<td>- Orders basic imaging studies</td>
<td>- Completes pre-operative planning with instrumentation and implants (e.g., patient positioning, arthroscopic equipment, anchors)</td>
<td>- Completes comprehensive pre-operative planning and alternatives</td>
<td>- Surgically treats complex complications (e.g., revision rotator cuff repair with tendon transfer, reverse shoulder replacement for anterosuperior escape)</td>
</tr>
<tr>
<td>- Obtains focused history and performs physical examination (e.g., provocative tests, Neer/Hawkins, O'Brien's, lag signs, pseudoparalysis, lift-off, belly press, scapular dyskinesia)</td>
<td>- Performs basic surgical approaches and portal placement (e.g., anterior, subacromial, posterior, accessory posterior)</td>
<td>- Performs diagnostic arthroscopy, subacromial decompression, distal clavicle resection, biceps tenotomy</td>
<td>- Capable of performing rotator cuff repair</td>
<td>- Capable of performing complex arthroscopic rotator cuff repairs, revision rotator cuff repair, tendon transfers</td>
</tr>
<tr>
<td>- Orders basic imaging studies</td>
<td>- Performs simple shoulder procedures (e.g., subacromial injection)</td>
<td>- Prescribes non-operative treatment</td>
<td>- Appropriately interprets post-operative imaging studies/implant positioning</td>
<td></td>
</tr>
<tr>
<td>- Performs basic surgical approaches and portal placement (e.g., anterior, subacromial, posterior, accessory posterior)</td>
<td>- Provides basic post-operative management (e.g., phases of cuff repair rehab, Phase 1-3)</td>
<td>- Diagnoses surgical complications</td>
<td>- Modifies and adjusts post-operative rehabilitation plan as needed (e.g., modify for massive cuff repairs, post-operative stiffness)</td>
<td>- Treats complications both intra- and post-operatively (e.g., irrigation/debridement for infections, proper infection treatment protocol, infectious disease consultation)</td>
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### Pediatric Supracondylar Humerus Fracture – Medical Knowledge

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<tr>
<td>- Demonstrates knowledge of elbow anatomy relevant to pin fixation (e.g., location of ulnar nerve and changes with elbow position; locations of median and radial nerves)</td>
<td>- Understands mechanism of injury and fracture classification (e.g., Gartland classification)</td>
<td>- Understands the biology of fracture healing (e.g., hematoma formation, inflammation, early soft tissue and periosteal bone formation, hard callus, edema, remodeling)</td>
</tr>
<tr>
<td>- Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., arthrogram/MRI to assess articular surface)</td>
<td>- Understands the effects of intervention on natural history of supracondylar humerus fracture (e.g., avoidance of malunion, Volkmann's ischemic contracture)</td>
<td>- Understands the biology of fracture healing (e.g., hematoma formation, inflammation, early soft tissue and periosteal bone formation, hard callus, edema, remodeling)</td>
</tr>
<tr>
<td>- Knows the importance of arm position during examination (e.g., neutral position for olecranon bursitis, 90° flexion for radial nerve)</td>
<td>- Understands the effects of intervention on natural history of supracondylar humerus fracture (e.g., avoidance of malunion, Volkmann's ischemic contracture)</td>
<td>- Understands the biology of fracture healing (e.g., hematoma formation, inflammation, early soft tissue and periosteal bone formation, hard callus, edema, remodeling)</td>
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<td>- Understands the biology of fracture healing (e.g., hematoma formation, inflammation, early soft tissue and periosteal bone formation, hard callus, edema, remodeling)</td>
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<tr>
<td>percutaneous pinning [CRPP] function well, and possible vascular injury</td>
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<tr>
<td>Demonstrate knowledge of supracondylar humerus fracture anatomy and basic surgical approaches (e.g., direction of displacement and neurological/vascular structures at risk affects choice of approach)</td>
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<tr>
<td>Understands basic pre-surgical planning; anticipates obstacles to reduction, understands reduction maneuvers</td>
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<td>fracture], fracture pattern/comminution)</td>
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### Pediatric Supracondylar Humerus Fracture – Patient Care

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<tr>
<td>• Obtains history and performs basic physical exam (e.g., injury mechanism, radial and ulnar pulse assessment)</td>
<td>• Recognizes vascular, nerve or other associated injuries; assess median, radial and ulnar nerves, role of Doppler arterial assessment and perfusion assessment, differentiates anterior interosseous nerve vs. complete median nerve palsy</td>
<td>• Recognizes factors that could predict difficult reduction and post-operative complication risk (e.g., abnormal vascular examination, neurological deficits, brachial sign or severe soft tissue swelling, associated forearm fracture)</td>
<td>• Capable of performing a closed reduction and pinning</td>
<td>• Manages open fractures and fractures with neurological and vascular complications; open approaches and dissect out vascular and neurological structures, appropriate exposure and debridement for open fractures</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies (e.g., AP and lateral elbow radiographs, oblique views if concern for condylar component)</td>
<td>• Appropriately interprets basic imaging studies and recognizes fracture patterns</td>
<td>• Appropriately orders and interprets advanced imaging studies</td>
<td>• Capable of removing obstacles to reduction through closed or open methods (e.g., milking maneuver, open reduction)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Prescribes non-operative treatments</td>
<td>• Splints or casts fracture appropriately (e.g., flexion less than 90 degrees, accommodates for swelling potential)</td>
<td>• Completes comprehensive pre-operative planning with alternatives; recognizes fracture patterns that may preclude lateral entry only pinning or necessitate ORIF</td>
<td>• Capable of performing alternative surgical approaches to the supracondylar humerus fracture (e.g., milking maneuver, open approaches)</td>
<td>• Capable of surgically treating complex complications (e.g., osteotomy for severe cubitus varus)</td>
</tr>
<tr>
<td>• Provides basic peri-operative management</td>
<td>• Completes pre-operative planning with instrumentation and implants</td>
<td>• Modifies and adjusts post-operative treatment plan as needed (e.g., recognizes deviations from typical postoperative course)</td>
<td>• Capable of surgically treating simple complications (e.g., compartment release, wound problems)</td>
<td>• Capable of surgically treating complex complications (e.g., osteotomy for severe cubitus varus)</td>
</tr>
<tr>
<td>• Lists potential complications</td>
<td>• Performs basic management of supracondylar humerus fracture; uncomplicated closed reduction</td>
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<td></td>
<td>• Provides post-operative management and rehabilitation (e.g., cast or splint care, manage swelling, monitor neurological and vascular status, office pin)</td>
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removal)
- Capable of diagnosis and early management of complications, including compartment syndrome, pin tract sepsis, cast problems

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Compassion, integrity, and respect for others as well as sensitivity and responsiveness to diverse patient populations, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation. Knowledge about respect for and adherence to the ethical principles relevant to the practice of medicine, remembering in particular that responsiveness to patients that supersedes self-interest is an essential aspect of medical practice – Professionalism

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<tr>
<td>• Consistently demonstrates behavior that conveys caring, honesty, and genuine interest in patients and families</td>
<td>• Demonstrates an understanding of the importance of compassion, integrity, respect, sensitivity, and responsiveness while exhibiting these attitudes consistently in common and uncomplicated situations</td>
<td>• Exhibits these attitudes consistently in complex and complicated situations</td>
<td>• Develops and uses an integrated and coherent approach to understanding and effectively working with others to provide good medical care that integrates personal standards with standards of medicine</td>
<td>• Demonstrates leadership and mentoring regarding these principles of bioethics</td>
</tr>
<tr>
<td>• Recognizes the diversity of patient populations with respect to gender, age, culture, race, religion, disabilities, sexual orientation, and socioeconomic status</td>
<td>• Consistently recognizes ethical issues in practice; discusses, analyzes, and manages in common and frequent clinical situations including socioeconomic variances in patient care</td>
<td>• Recognizes how own personal beliefs and values impact medical care</td>
<td>• Consistently considers and manages ethical issues in practice</td>
<td>• Manages ethical misconduct in patient management and practice</td>
</tr>
<tr>
<td>• Recognizes the importance and priority of patient care, with an emphasis on the care that the patient wants and needs; demonstrates a commitment to this value</td>
<td>• Knowledgeable about the beliefs, values, and practices of diverse patient populations and the potential impact on patient care</td>
<td>• Recognizes ethical violations in professional and patient aspects of medical practice</td>
<td>• Consistently practices medicine as related to specialty care in a manner that upholds values and beliefs of self and medicine</td>
<td>• Demonstrates leadership and mentoring regarding these principles of bioethics</td>
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### Accountability to patients, society, and the profession; personal responsibility to maintain emotional, physical, and mental health – Professionalism

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<tr>
<td>• Understands when assistance is needed and willing to ask for help</td>
<td>• Recognizes limits of knowledge in common clinical situations and asks for assistance</td>
<td>• Consistently recognizes limits of knowledge in uncommon and complicated clinical situations; develops and implements plans for the best possible patient care</td>
<td>• Mentors and models personal and professional responsibility to colleagues</td>
<td>• Develops organizational policies and education to support the application of these principles in the practice of medicine</td>
</tr>
<tr>
<td>• Exhibits basic professional responsibilities, such as timely reporting for duty, being rested and ready to work, displaying appropriate attire and grooming, and delivering patient care as a functional physician</td>
<td>• Recognizes value of humility and respect towards patients and associate staff</td>
<td>• Assesses application of principles of physician wellness, alertness, delegation, teamwork, and optimization of personal performance to the practice of medicine</td>
<td>• Recognizes signs of physician impairment and demonstrates appropriate steps to address impairment in colleagues</td>
<td>• Practices consistent with the American Academy of Orthopaedic Surgeons (AAOS) Standards of Professionalism</td>
</tr>
<tr>
<td>• Aware of the basic principles and aspects of the general maintenance of emotional, physical, mental health, and issues related to fatigue/sleep deprivation</td>
<td>• Demonstrates adequate management of personal, emotional, physical, mental health, and fatigue</td>
<td>• Seeks out assistance when necessary to promote and maintain personal, emotional, physical, and mental health</td>
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<tbody>
<tr>
<td>• Acknowledges gaps in personal knowledge and expertise, and frequently asks for feedback from teachers and colleagues</td>
<td>• Continually assesses performance by evaluating feedback and assessments</td>
<td>• Accurately assesses areas of competence and deficiencies and modifies learning plan</td>
<td>• Performs self-directed learning without external guidance</td>
<td>• Incorporates practice change based upon new evidence</td>
</tr>
<tr>
<td>• Demonstrates computer literacy and basic computer skills in clinical practice</td>
<td>• Develops a learning plan based on feedback with some external assistance</td>
<td>• Demonstrates use of published review articles or guidelines to review common topics in practice</td>
<td>• Critically evaluates and uses patient outcomes to improve patient care</td>
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<tr>
<td>• Uses patient care experiences to direct learning</td>
<td>• Uses patient care experiences to direct learning</td>
<td>• Uses patient care experiences to direct learning</td>
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<tr>
<td>• Describes basic concepts in clinical epidemiology, biostatistics, and clinical reasoning</td>
<td>• Ranks study designs by their level of evidence</td>
<td>• Applies a set of critical appraisal criteria to different types of research, including synopses of original research findings, systematic reviews and meta-analyses, and clinical practice guidelines</td>
<td>• Demonstrates a clinical practice that incorporates principles and basic practices of evidence-based practice and information mastery</td>
<td>• Independently teaches and assesses evidence-based medicine and information mastery techniques</td>
</tr>
<tr>
<td>• Categorizes the study design of a research study</td>
<td>• Identifies bias affecting study validity</td>
<td>• Critically evaluates information from others: colleagues, experts, industry representatives, and patient-delivered information</td>
<td>• Cites evidence supporting several common practices</td>
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<td>• Formulates a searchable question from a clinical question</td>
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## Systems thinking, including cost-effective practice – Systems-based Practice

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<td>• Describes basic levels of systems of care (e.g., self-management to societal)</td>
<td>• Gives examples of cost and value implications of care he or she provides (e.g., gives examples of alternate sites of care resulting in different costs for individual patients)</td>
<td>• Orders and schedules tests in appropriate systems for individual patients balancing expenses and quality</td>
<td>• Effectively manages clinic team and schedules for patient and workflow efficiency</td>
<td>• Leads systems change at micro and macro level (e.g., manages operating room [OR] team and patient flow in a multi-case OR day)</td>
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### Resident will work in interprofessional teams to enhance patient safety and quality care – Systems-based Practice

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<tr>
<td>• Recognizes importance of complete and timely documentation in teamwork and patient safety</td>
<td>• Uses checklists and briefings to prevent adverse events in health care</td>
<td>• Participates in quality improvement or patient safety program and/or project</td>
<td>• Maintains team situational awareness and promote “speaking up” with concerns</td>
<td>• Develops and publishes quality improvement project results</td>
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### Uses technology to accomplish safe health care delivery – Systems-based Practice

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<tr>
<td>• Explains the role of the Electronic Health Record (EHR) and Computerized Physician Order Entry (CPOE) in prevention of medical errors</td>
<td>• Appropriately and accurately enters patient data in EHR</td>
<td>• Reconciles conflicting data in the medical record</td>
<td>• Contributes to reduction of risks of automation and computerized systems by reporting system problems</td>
<td>• Recommends systems re-design for faculty computerized processes</td>
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### Communication – Interpersonal and Communication Skills

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<tr>
<td>• Communicates with patients about routine care (e.g., actively seeks and understands the patient’s/family’s perspective; able to focus in on the patient’s chief complaint and ask pertinent questions related to that complaint)</td>
<td>• Communicates competently within systems and other care providers, and provides detailed information about patient care (e.g., demonstrates sensitivity to patient— and family—related information gathering/sharing to social cultural context; begins to engage patient in patient-based decision making, based on the patient’s understanding and ability to carry out the proposed plan; demonstrates empathic response to patient’s and family’s needs; actively seeks information from multiple sources, including consultations; avoids being a source of conflict; able to obtain informed consent [risks, benefits, alternatives, and expectations])</td>
<td>• Communicates competently in difficult patient circumstances (e.g., able to customize emotionally difficult information, such as end-of-life or loss-of-limb discussions; supports patient and family; engages in patient-based decision making incorporating patient and family/cultural values and preferences)</td>
<td>• Communicates competently in complex/adversarial situations (e.g., understand a patient’s secondary motivations in the treatment of his or her care—drug seeking, disability issues, and legal cases; able to sustain working relationships during complex and challenging situations, including transitions of care—treatment of a metastatic pathologic fracture; able to manage conflict with peers, subordinates, and superiors)</td>
<td>• Demonstrates leadership in communication activities (e.g., coaches others to improve communication skills; engages in self-reflection on how to improve communication skills)</td>
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### Teamwork (e.g., physician, nursing and allied health care providers, administrative and research staff) – Interpersonal and Communication Skills

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<td>• Recognizes and communicates critical patient information in a timely and accurate manner to other members of the treatment team</td>
<td>• Supports and respects decisions made by team</td>
<td>• Able to facilitate, direct, and delegate team-based patient care activities</td>
<td>• Leads team-based care activities and communications</td>
<td>• Seeks leadership opportunities within professional organizations</td>
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<tr>
<td>• Recognizes and communicates role as a team member to patients and staff</td>
<td>• Actively participates in team-based care; Supports activities of other team members, communicates their roll to the patient and family</td>
<td>• Understands the Operating Room team leadership role and obligations</td>
<td>• Able to identify and rectify problems with team communication</td>
<td>• Able to lead/facilitate meetings within organization/system</td>
</tr>
<tr>
<td>• Responds to requests for information</td>
<td>• Supports and respects decisions made by team</td>
<td>• Able to facilitate, direct, and delegate team-based patient care activities</td>
<td>• Leads team-based care activities and communications</td>
<td>• Seeks leadership opportunities within professional organizations</td>
</tr>
<tr>
<td>Example: Lab results, accurate and timely progress notes, answers pages in a timely manner</td>
<td>Example: Hand-offs, transitions of care, communicates with other health care providers and staff members</td>
<td>Example: Leads daily rounds, communicates plan of action with OR personnel</td>
<td>Example: Organizes and verifies hand-off rounds, coverage issues</td>
<td>Example: Organizes and verifies hand-off rounds, coverage issues</td>
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The ACGME Case Log System for Orthopaedic Surgery allows residents to document the breadth of their surgical experience during residency and to enable the ACGME’s surgical Review Committees to monitor programs to ensure that residents have an adequate volume and variety of experiences. In anticipation of the Next Accreditation System (NAS), all surgical Review Committees identified case categories that are representative of broader procedural experiences of a non-fellowship-educated surgeon in the specialty, as well as expectations for minimum numbers in each case category. The minimum number requirements represent expectations for experience—not the achievement of competence.

Effective July 1, 2013, expectations for recording CPT codes for each case changed. Residents should continue to enter all CPT codes representing their participation as Resident Surgeon for each case. However, ONE code per case must be selected as the primary code. While multiple CPT codes may apply for some cases, such as multiple levels and/or bone grafting in a lumbar decompression and fusion, a resident must choose ONE primary code to submit in the Case Log System. Additional codes should be entered to fully capture the complexity of each case and enable the Review Committee to monitor and identify trends among both the primary and secondary codes that may eventually lead to changes in the defined case categories and/or numbers.

The Review Committee recognizes that in some situations, more than one distinct surgical procedure may be performed during a single session of anesthesia. In these cases, it is appropriate for the resident to submit two separate case logs, each with its own primary code. For instance, in a case of polytrauma, there may be one procedure to fix a fractured femur, and a separate procedure to fix a fractured tibia. Two separate case logs (each with its own primary code) should be submitted if the resident participates in both procedures. Similarly, if bilateral procedures are done in the same setting (such as bilateral total knee arthroplasties or bilateral carpal tunnel releases), two separate cases (each with its own primary code) should be submitted in the Case Log System if the resident participates in both procedures. Following these guidelines allows equivalent tracking of the volume and variety of cases for each resident, preventing variances based on how cases are coded.

All surgical Review Committees were asked to provide guidance to programs on the level of resident participation in a case. Accordingly, the Review Committee for Orthopaedic Surgery developed the following definitions and guidelines:

Residents must log procedural experiences as either Level 1 or Level 2. They should not log a procedure if they participate at less than these levels. All procedures at both levels require appropriate faculty member supervision and participation in the case. At this time, both Level 1 and Level 2 participation will count toward meeting the minimum number requirements.

**Level 1 – Primary** or **Supervising** resident surgeon: The resident is scrubbed on the case and participates in pre-operative assessment and planning. In addition:

a. **Primary** – The resident performs key portions of the procedure.

b. **Supervising** – The resident guides another resident through key portions of the procedure.
   ▪ **NOTE:** When a resident acts as a supervising surgeon and another resident is the primary surgeon, both residents may log the case as Level 1.

**Level 2 – Assisting** resident surgeon – The resident is scrubbed in on the case and participates in pre-operative assessment and planning, assists a more senior surgeon in the key portions, and may participate in opening or closing or other non-key portions.
Orthopaedic Surgery Case Log Definitions

Adult Patient: Any patient 17 or older at the time of the procedure.

Pediatric Patient: Any patient younger than 17 at the time of the procedure.

Oncology Patient: Any patient for whom the procedure diagnosed or treated is primary or metastatic, benign or malignant, bone or soft tissue tumors.

Involved Microsurgery: The procedure involved a microscope in the repair of a nerve or vessel.

Primary Credit: CPT code that is used to calculate the number of cases for each of the required defined case categories. If a case is entered with more than one CPT code, one CPT code must be selected for credit. This code is the primary code. If the code selected for credit is not one of those being tracked, then while the case will count towards the total number of cases for the area/type to which it is mapped, it will not count towards the required minimum number in any defined case category.

Secondary Credit: Any CPT code that is not identified for credit. All secondary codes will count towards the total number of cases for the area/type to which it is mapped.

Trauma Cases: There are no CPT codes for trauma. The Case Log System captures trauma cases by summing the cases that include CPT codes in the “Fracture and/or Dislocation” and “Manipulation” areas of all areas except spine, integumentary, and nervous system.

Percentiles Summary Graph: Sum of all CPT codes logged for each listed area (Shoulder; Humerus/Elbow; Forearm/Wrist; Hand/Fingers; Pelvis/Hip; Femur/Knee; Leg/Ankle; Foot/Toes; Other Musculoskeletal; Spine; Integumentary; Nervous System; Miscellaneous; Oncology Cases, Microsurgeries, Trauma).

Frequently Asked Questions

Q. How were the key case categories and required minimum numbers for each identified?  
   [Program Requirements: IV.A.6.d).(1).(a-i)]

A. Review Committee members analyzed the national data for graduating residents for academic years 2007-2008, 2008-2009, and 2009-2010, evaluating national averages and standard deviations to develop provisional minimum required numbers. The final numbers were derived based on the collective expertise and professional judgment of the Committee members. A limited set of CPT codes were identified for each key case category. A Minimums Report is available within the ACGME Case Log System that programs can generate at any time in order to monitor resident experience in each category. While only certain CPT codes (and no more than one CPT code per case) will count towards meeting the minimum number requirements, residents should enter all CPT codes that reflect their active and meaningful participation as a surgeon, since the full Case Log Report will contain this information and may be useful at a later time for hospital credentialing requests.

Q. Are PGY-1 residents permitted to log cases in the ACGME Case Log System?  
   [Program Requirement: IV.A.6.e)]
A. All residents must prospectively log cases into the ACGME Case Log System during the entirety of their residency experience. Only orthopaedic cases must be entered; cases completed on other services (e.g., neurological surgery) must not be entered. A resident completing a general surgery intern year who had not matched into an orthopaedic surgery program at the same time is not permitted to 'count' cases that may have been entered during the intern year.

Q. How did the Review Committee determine the minimum and maximum total numbers of required cases? [Program Requirement: IV.A.6.e).(1)]

A. The Review Committee referenced the 2008-2009 national data summarizing case totals in order to set the requirements for minimum and maximum case numbers. Based on these statistics, and utilizing the collective expertise of Committee members, the range of 1000-3000 total procedures was determined to be appropriate.

Q. What are the expectations for compliance with the requirement for entering resident surgical cases into the ACGME Case Log System in a timely manner? [Program Requirement: V.A.1).(d)]

A. Cases should be entered into the ACGME Case Log System as soon as possible to ensure that the information is accurate and complete. Ideally, residents will do this daily, or at least weekly. It is suggested that the program director review the logs quarterly to make sure that resident experience is accurately reflected. Note: cases cannot be entered following completion of the program.

Q. How should each resident’s experience in the ACGME Case Log System be monitored? [Program Requirement: V.A.1).(d)]

A. The program director should be reviewing resident Case Log entries, and in particular the Minimums Report, at least quarterly in order to ensure that each resident is making appropriate progress towards meeting the required minimum numbers in each key case category. The program director can access this information by logging into the Case Log System with his or her ADS password and program number.

Q. How often does the ACGME publish Case Log data?

A. The ACGME publishes data for the previous academic year on the Review Committee’s web page on the ACGME website no later than December 1 of each calendar year. Program personnel should contact the Executive Director of the Review Committee with any questions regarding national and program data reports. Contact information can be found on the Review Committee web page on the ACGME website.

Q. Can program directors view case log experience entered by residents from other programs?

A. No, program directors are only provided with their own program residents’ data.

Q. What are the Review Committee’s expectations for monitoring resident case logs? [Program Requirement V.A.2.d)]

A. Programs must monitor the accurate and timely entry of cases into the system. As part of monitoring resident progress towards developing competence in surgical skills, cumulative
operative experience reports should be generated from the Case Log System and reviewed with each resident as part of his or her semiannual review. More frequent monitoring and feedback is highly recommended.

A variety of Case Log Reports are available in the system; each providing useful information for monitoring.

- **Code Summary Report**
  This report provides the number of times each CPT code is entered into the Case Log System by the program’s residents. Filtering by specific CPT code, attending, institution, and/or patient type can provide useful information on surgical activity in the program that might, for example, be used to make targeted changes in rotation schedules, curriculum, faculty assignments, etc. This report can also be especially helpful in monitoring the procedures that do not count towards the minimums. Choosing non-tracked codes on the area drop-down will show the CPT codes that have been entered and will not count on the minimums report. These codes can be easily reviewed to determine if the resident miscoded something that should be adjusted or it really was a minor procedure that doesn’t fit into the Review Committee minimums. Note that the Credit drop-down box defaults to “Primary.” Other Credit drop-down options are “All” and “Secondary.”

- **Minimums Report**
  When the default settings are used, a table listing all residents in the program is generated that shows the number of cases for each resident in each defined case category, as well as the minimum number required for each. Individual tables may be generated for discussion with individual residents.

- **Resident Activity Report**
  This is a summary report that provides total number of cases, total number of CPT codes, most recent procedure date and last time an update was made for each resident or for the selected resident. This report is a quick way to keep tabs on how frequently residents are entering their cases. For example, if the program requires residents to enter cases each week, the report can be run weekly; a resident that has not entered a case within the past week would be quickly identified.

- **Resident Brief Report**
  The brief report lists the procedure date, case ID, CPT code, institution, resident role, attending, and description for each case for each selected resident using the selected filters. This is one of two reports that include a filter for RRC Case Type (All, Microsurgery, or Oncology).

- **Resident Experience Report by Year**
  This report lists the number of procedures performed by the selected resident for each PG year as well as the total number for each area/type. The use of available filters such as resident role, patient type, area/type can provide additional insight into resident experience.

- **Resident Full Detail Report**
  All information for each case entered into the Case Log System is displayed in this report, making this report most useful for getting an in-depth view of a resident’s experience during a defined period. For example, this report could be generated for each resident for the preceding three-month period and used as part of a quarterly evaluation meeting with the program director or designated faculty mentor. The use of filters can be used to provide additional insight into the resident’s activities (e.g., filtering for a specific defined category for a resident with a short term improvement plan that is being assessed). Note that this is the other report that includes a filter for RRC Case Type (All, Microsurgery, or Oncology).
- Tracked Procedures for Specialty by Category
  This report generates the CPT codes mapped to each defined case category as well as the CPT codes that are available but not tracked.

The use of filters allows the program to get specific information to use for targeting needed program improvements. For example, selecting a specific institution would provide data on that institution’s contribution to the surgical/clinical activity in the program. If the institution was added with the goal of providing specific foot/toes procedures, the program could determine if this goal was being met. Programs are encouraged to incorporate these tools as part of their program improvement activities.
ACGME Program Requirements for Graduate Medical Education in Orthopaedic Surgery

Common Program Requirements are in BOLD

Introduction

Int.A. Residency is an essential dimension of the transformation of the medical student to the independent practitioner along the continuum of medical education. It is physically, emotionally, and intellectually demanding, and requires longitudinally-concentrated effort on the part of the resident.

The specialty education of physicians to practice independently is experiential, and necessarily occurs within the context of the health care delivery system. Developing the skills, knowledge, and attitudes leading to proficiency in all the domains of clinical competency requires the resident physician to assume personal responsibility for the care of individual patients. For the resident, the essential learning activity is interaction with patients under the guidance and supervision of faculty members who give value, context, and meaning to those interactions. As residents gain experience and demonstrate growth in their ability to care for patients, they assume roles that permit them to exercise those skills with greater independence. This concept--graded and progressive responsibility--is one of the core tenets of American graduate medical education. Supervision in the setting of graduate medical education has the goals of assuring the provision of safe and effective care to the individual patient; assuring each resident’s development of the skills, knowledge, and attitudes required to enter the unsupervised practice of medicine; and establishing a foundation for continued professional growth.

Int.B. Orthopaedic surgery includes the study and prevention of musculoskeletal diseases, disorders, and injuries, and their treatment by medical, surgical, and physical methods.

Int.C. The educational program in orthopaedic surgery must be 60 months in length.

I. Institutions

I.A. Sponsoring Institution

One sponsoring institution must assume ultimate responsibility for the program, as described in the Institutional Requirements, and this responsibility extends to resident assignments at all participating sites.

The sponsoring institution and the program must ensure that the program director has sufficient protected time and financial support for his or her educational and administrative responsibilities to the program.

I.A.1. To provide an adequate interdisciplinary educational experience, the
institution that sponsors the orthopaedic program should also participate in ACGME-accredited programs in general surgery, internal medicine, and pediatrics. (Core)

I.B. Participating Sites

I.B.1. There must be a program letter of agreement (PLA) between the program and each participating site providing a required assignment. The PLA must be renewed at least every five years. (Core)

The PLA should:

I.B.1.a) identify the faculty who will assume both educational and supervisory responsibilities for residents; (Detail)

I.B.1.b) specify their responsibilities for teaching, supervision, and formal evaluation of residents, as specified later in this document; (Detail)

I.B.1.c) specify the duration and content of the educational experience; and, (Detail)

I.B.1.d) state the policies and procedures that will govern resident education during the assignment. (Detail)

I.B.2. The program director must submit any additions or deletions of participating sites routinely providing an educational experience, required for all residents, of one month full time equivalent (FTE) or more through the Accreditation Council for Graduate Medical Education (ACGME) Accreditation Data System (ADS). (Core)

I.B.3. Participating sites should be in close enough proximity to the primary site to facilitate resident participation in program conferences and rounds. (Detail)

I.B.3.a) Residents at distant participating sites must attend and participate in regularly scheduled and held teaching rounds, lectures and conferences. On average, there must be at least four hours of formal teaching activities each week. (Detail)

II. Program Personnel and Resources

II.A. Program Director

II.A.1. There must be a single program director with authority and accountability for the operation of the program. The sponsoring institution’s GMEC must approve a change in program director. (Core)

II.A.1.a) The program director must submit this change to the ACGME via the ADS. (Core)
II.A.2. The program director should continue in his or her position for a length of time adequate to maintain continuity of leadership and program stability.  

II.A.3. Qualifications of the program director must include:

II.A.3.a) requisite specialty expertise and documented educational and administrative experience acceptable to the Review Committee;  

II.A.3.b) current certification in the specialty by the American Board of Orthopaedic Surgery (ABOS), or specialty qualifications that are acceptable to the Review Committee;  

II.A.3.c) current medical licensure and appropriate medical staff appointment;  

II.A.3.d) a minimum of four years of clinical practice in the specialty post-residency/fellowship;  

II.A.3.e) a minimum of two years of experience as an associate program director of an ACGME-accredited orthopaedic surgery program, or three years of participation as an active faculty member in an ACGME-accredited orthopaedic surgery program; and,  

II.A.3.f) evidence of periodic updates of knowledge and skills to discharge the roles and responsibilities for teaching, supervision, and formal evaluation of residents.  

II.A.4. The program director must administer and maintain an educational environment conducive to educating the residents in each of the ACGME competency areas.  

The program director must:

II.A.4.a) oversee and ensure the quality of didactic and clinical education in all sites that participate in the program;  

II.A.4.b) approve a local director at each participating site who is accountable for resident education;  

II.A.4.c) approve the selection of program faculty as appropriate;  

II.A.4.d) evaluate program faculty;  

II.A.4.e) approve the continued participation of program faculty based on evaluation;  

II.A.4.f) monitor resident supervision at all participating sites;  

II.A.4.g) prepare and submit all information required and requested by
II.A.4.g).(1) This includes but is not limited to the program application forms and annual program updates to the ADS, and ensure that the information submitted is accurate and complete.

II.A.4.h) ensure compliance with grievance and due process procedures as set forth in the Institutional Requirements and implemented by the sponsoring institution;

II.A.4.i) provide verification of residency education for all residents, including those who leave the program prior to completion;

II.A.4.j) implement policies and procedures consistent with the institutional and program requirements for resident duty hours and the working environment, including moonlighting,

and, to that end, must:

II.A.4.j).(1) distribute these policies and procedures to the residents and faculty;

II.A.4.j).(2) monitor resident duty hours, according to sponsoring institutional policies, with a frequency sufficient to ensure compliance with ACGME requirements;

II.A.4.j).(3) adjust schedules as necessary to mitigate excessive service demands and/or fatigue; and,

II.A.4.j).(4) if applicable, monitor the demands of at-home call and adjust schedules as necessary to mitigate excessive service demands and/or fatigue.

II.A.4.k) monitor the need for and ensure the provision of back up support systems when patient care responsibilities are unusually difficult or prolonged;

II.A.4.l) comply with the sponsoring institution’s written policies and procedures, including those specified in the Institutional Requirements, for selection, evaluation and promotion of residents, disciplinary action, and supervision of residents;

II.A.4.m) be familiar with and comply with ACGME and Review Committee policies and procedures as outlined in the ACGME Manual of Policies and Procedures;

II.A.4.n) obtain review and approval of the sponsoring institution’s
all applications for ACGME accreditation of new programs; (Detail)

changes in resident complement; (Detail)

major changes in program structure or length of training; (Detail)

progress reports requested by the Review Committee; (Detail)

requests for increases or any change to resident duty hours; (Detail)

voluntary withdrawals of ACGME-accredited programs; (Detail)

requests for appeal of an adverse action; and, (Detail)

appeal presentations to a Board of Appeal or the ACGME. (Detail)

obtain DIO review and co-signature on all program application forms, as well as any correspondence or document submitted to the ACGME that addresses: (Detail)

program citations, and/or, (Detail)

request for changes in the program that would have significant impact, including financial, on the program or institution. (Detail)

maintain a current record of research activity by residents and faculty members. (Detail)

At each participating site, there must be a sufficient number of faculty with documented qualifications to instruct and supervise all residents at that location. (Core)

The faculty must:

devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities; and to demonstrate a strong interest in the education of residents, and (Core)
II.B.1.b) administer and maintain an educational environment conducive to educating residents in each of the ACGME competency areas. (Core)

II.B.2. The physician faculty must have current certification in the specialty by the American Board of Orthopaedic Surgery, or possess qualifications judged acceptable to the Review Committee. (Core)

II.B.2.a) There must be a minimum of three faculty members, including the program director, each of whom devotes at least 20 hours per week to the program. These faculty members must have current ABOS certification in the specialty. (Core)

II.B.2.b) There must be at least one FTE physician faculty member (FTE equals 45 hours per week devoted to the program), who has current ABOS certification in the specialty, for every four residents in the program. (Core)

II.B.2.c) The primary provider of orthopaedic surgery education in any subspecialty area must have ABMS/ABOS certification. Other qualified and properly credentialed practitioners may participate in the education of residents as determined by the program director. (Core)

II.B.3. The physician faculty must possess current medical licensure and appropriate medical staff appointment. (Core)

II.B.4. The nonphysician faculty must have appropriate qualifications in their field and hold appropriate institutional appointments. (Core)

II.B.5. The faculty must establish and maintain an environment of inquiry and scholarship with an active research component. (Core)

II.B.5.a) The faculty must regularly participate in organized clinical discussions, rounds, journal clubs, and conferences. (Detail)

II.B.5.b) Some members of the faculty should also demonstrate scholarship by one or more of the following:

II.B.5.b).(1) peer-reviewed funding; (Detail)

II.B.5.b).(2) publication of original research or review articles in peer-reviewed journals, or chapters in textbooks; (Detail)

II.B.5.b).(3) publication or presentation of case reports or clinical series at local, regional, or national professional and scientific society meetings; or, (Detail)

II.B.5.b).(4) participation in national committees or educational organizations. (Detail)
II.B.5.c) Faculty should encourage and support residents in scholarly activities. (Core)

II.B.6. Faculty members, including the program director, must regularly participate in faculty development activities related to resident education, including evaluation, feedback, mentoring, supervision, or teaching. (Core)

II.B.6.a) The program must maintain documentation of faculty member participation in these activities, and provide it on request. (Core)

II.C. Other Program Personnel

The institution and the program must jointly ensure the availability of all necessary professional, technical, and clerical personnel for the effective administration of the program. (Core)

II.C.1. There should be institutional support for a full-time equivalent orthopaedic surgery program coordinator designated specifically for orthopaedic surgical education. (Core)

II.C.1.a) Programs with more than 20 residents should be provided with additional administrative support. (Detail)

II.D. Resources

The institution and the program must jointly ensure the availability of adequate resources for resident education, as defined in the specialty program requirements. (Core)

These resources must include:

II.D.1. workspace for residents that includes ready access to computers at all clinical sites; (Detail)

II.D.2. current technological resources for production of presentations, manuscripts, or portfolios; and, (Detail)

II.D.3. a dedicated space to facilitate basic surgical skills training. (Detail)

II.E. Medical Information Access

Residents must have ready access to specialty-specific and other appropriate reference material in print or electronic format. Electronic medical literature databases with search capabilities should be available. (Detail)

II.E.1. Residents must have Internet access to appropriate full-text journals and electronic medical reference resources for education and patient care at all participating sites. (Detail)

III. Resident Appointments
III.A. Eligibility Criteria

The program director must comply with the criteria for resident eligibility as specified in the Institutional Requirements. (Core)

III.A.1. Eligibility Requirements – Residency Programs

III.A.1.a) All prerequisite post-graduate clinical education required for initial entry or transfer into ACGME-accredited residency programs must be completed in ACGME-accredited residency programs, or in Royal College of Physicians and Surgeons of Canada (RCPSC)-accredited or College of Family Physicians of Canada (CFPC)-accredited residency programs located in Canada. Residency programs must receive verification of each applicant’s level of competency in the required clinical field using ACGME or CanMEDS Milestones assessments from the prior training program. (Core)

III.A.1.b) A physician who has completed a residency program that was not accredited by ACGME, RCPSC, or CFPC may enter an ACGME-accredited residency program in the same specialty at the PGY-1 level and, at the discretion of the program director at the ACGME-accredited program may be advanced to the PGY-2 level based on ACGME Milestones assessments at the ACGME-accredited program. This provision applies only to entry into residency in those specialties for which an initial clinical year is not required for entry. (Core)

III.A.1.c) A Review Committee may grant the exception to the eligibility requirements specified in Section III.A.2.b) for residency programs that require completion of a prerequisite residency program prior to admission. (Core)

III.A.1.d) Review Committees will grant no other exceptions to these eligibility requirements for residency education. (Core)

III.A.1.e) It is strongly suggested that the program policies for resident selection recognize the value and importance of recruiting qualified women and minority students. (Detail)

III.A.2. Eligibility Requirements – Fellowship Programs

All required clinical education for entry into ACGME-accredited fellowship programs must be completed in an ACGME-accredited residency program, or in an RCPSC-accredited or CFPC-accredited residency program located in Canada. (Core)

III.A.2.a) Fellowship programs must receive verification of each entering fellow’s level of competency in the required field
using ACGME or CanMEDS Milestones assessments from the core residency program. (Core)

III.A.2.b) Fellow Eligibility Exception

A Review Committee may grant the following exception to the fellowship eligibility requirements:

An ACGME-accredited fellowship program may accept an exceptionally qualified applicant**, who does not satisfy the eligibility requirements listed in Sections III.A.2. and III.A.2.a), but who does meet all of the following additional qualifications and conditions: (Core)

III.A.2.b).(1) Assessment by the program director and fellowship selection committee of the applicant’s suitability to enter the program, based on prior training and review of the summative evaluations of training in the core specialty; and (Core)

III.A.2.b).(2) Review and approval of the applicant’s exceptional qualifications by the GMEC or a subcommittee of the GMEC; and (Core)

III.A.2.b).(3) Satisfactory completion of the United States Medical Licensing Examination (USMLE) Steps 1, 2, and, if the applicant is eligible, 3, and; (Core)

III.A.2.b).(4) For an international graduate, verification of Educational Commission for Foreign Medical Graduates (ECFMG) certification; and, (Core)

III.A.2.b).(5) Applicants accepted by this exception must complete fellowship Milestones evaluation (for the purposes of establishment of baseline performance by the Clinical Competency Committee), conducted by the receiving fellowship program within six weeks of matriculation. This evaluation may be waived for an applicant who has completed an ACGME International-accredited residency based on the applicant’s Milestones evaluation conducted at the conclusion of the residency program. (Core)

III.A.2.b).(5).(a) If the trainee does not meet the expected level of Milestones competency following entry into the fellowship program, the trainee must undergo a period of remediation, overseen by the Clinical Competency Committee and monitored by the GMEC or a subcommittee of the GMEC. This period of remediation must not count toward time in fellowship training. (Core)
** An exceptionally qualified applicant has (1) completed a non-ACGME-accredited residency program in the core specialty, and (2) demonstrated clinical excellence, in comparison to peers, throughout training. Additional evidence of exceptional qualifications is required, which may include one of the following: (a) participation in additional clinical or research training in the specialty or subspecialty; (b) demonstrated scholarship in the specialty or subspecialty; (c) demonstrated leadership during or after residency training; (d) completion of an ACGME-International-accredited residency program.

III.B. Number of Residents

The program’s educational resources must be adequate to support the number of residents appointed to the program. \((\text{Core})\)

III.B.1. The program director may not appoint more residents than approved by the Review Committee, unless otherwise stated in the specialty-specific requirements. \((\text{Core})\)

III.C. Resident Transfers

III.C.1. Before accepting a resident who is transferring from another program, the program director must obtain written or electronic verification of previous educational experiences and a summative competency-based performance evaluation of the transferring resident. \((\text{Detail})\)

III.C.2. A program director must provide timely verification of residency education and summative performance evaluations for residents who may leave the program prior to completion. \((\text{Detail})\)

III.D. Appointment of Fellows and Other Learners

The presence of other learners (including, but not limited to, residents from other specialties, subspecialty fellows, PhD students, and nurse practitioners) in the program must not interfere with the appointed residents’ education. \((\text{Core})\)

III.D.1. The program director must report the presence of other learners to the DIO and GMEC in accordance with sponsoring institution guidelines. \((\text{Detail})\)

IV. Educational Program

IV.A. The curriculum must contain the following educational components:

IV.A.1. Overall educational goals for the program, which the program must make available to residents and faculty. \((\text{Core})\)
IV.A.2. Competency-based goals and objectives for each assignment at each educational level, which the program must distribute to residents and faculty at least annually, in either written or electronic form; (Core)

IV.A.3. Regularly scheduled didactic sessions; (Core)

IV.A.3.a) Basic science education and the principal clinical conferences should be provided at the primary clinical site. (Detail)

IV.A.3.b) Conferences and didactic sessions should be scheduled to permit resident attendance on a regular basis. (Core)

IV.A.3.c) Faculty members and residents must attend and participate in regularly scheduled and held teaching rounds, lectures, and conferences. (Core)

IV.A.3.c).(1) On average, there must be at least four hours of formal teaching activities each week. (Core)

IV.A.3.c).(2) Treatment indications, clinical outcomes, evidence-based guidelines, complications, morbidity, and mortality must be critically reviewed and discussed on a regular basis. (Core)

IV.A.3.d) The didactic curriculum must include:

IV.A.3.d).(1) basic sciences; (Core)

IV.A.3.d).(1).(a) This must include biochemistry, biomechanics, embryology, immunology, microbiology, pathology, pharmacology, and physiology. (Detail)

IV.A.3.d).(2) anatomy; (Core)

IV.A.3.d).(2).(a) This must include study and dissection of anatomic specimens by the residents and lectures or other formal sessions. (Detail)

IV.A.3.d).(3) pathology; (Core)

IV.A.3.d).(3).(a) This must include correlative pathology in which gross and microscopic pathology are related to clinical and roentgenographic findings. (Detail)

IV.A.3.d).(4) biomechanics; (Core)

IV.A.3.d).(4).(a) This must emphasize principles, terminology, and application to orthopaedics. (Detail)

IV.A.3.d).(5) appropriate use and interpretation of radiographic and
other imaging techniques; \( ^{(Core)} \)

IV.A.3.d).(6) orthopaedic oncology, rehabilitation of neurologic injury and disease, orthotics and prosthetics, and the ethics of medical practice; and, \( ^{(Core)} \)

IV.A.3.d).(7) basic motor skills, including proper and safe use of surgical instruments and operative techniques. \( ^{(Core)} \)

IV.A.3.d).(7).(a) The application of basic motor skills must be integrated into daily clinical activities, especially in the operating room. \( ^{(Core)} \)

IV.A.3.e) Organized instruction in the basic medical sciences must be integrated into the daily clinical activities by clearly linking the pathophysiologic process and findings to the diagnosis, treatment, and management of clinical disorders. \( ^{(Detail)} \)

IV.A.4. Delineation of resident responsibilities for patient care, progressive responsibility for patient management, and supervision of residents over the continuum of the program; and, \( ^{(Core)} \)

IV.A.5. ACGME Competencies

The program must integrate the following ACGME competencies into the curriculum: \( ^{(Core)} \)

IV.A.5.a) Patient Care and Procedural Skills

IV.A.5.a).(1) Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. \( ^{(Outcome)} \)

IV.A.5.a).(2) Residents must be able to competently perform all medical, diagnostic, and surgical procedures considered essential for the area of practice. Residents: \( ^{(Outcome)} \)

IV.A.5.a).(2).(a) must demonstrate competence in the pre-admission care, hospital care, operative care, and follow-up care (including rehabilitation) of patients; \( ^{(Outcome)} \)

IV.A.5.a).(2).(b) must demonstrate competence in their ability to:

IV.A.5.a).(2).(b).(i) gather essential and accurate information about their patients; \( ^{(Outcome)} \)

IV.A.5.a).(2).(b).(ii) make informed decisions about diagnostic and therapeutic interventions based on
patient information and preferences, up-to-date scientific evidence, and clinical judgment; 

IV.A.5.a).(2).(b).(iii) develop and carry out patient management plans, and; 

IV.A.5.a).(2).(b).(iv) provide health care services aimed at preventing health problems or maintaining health. 

IV.A.5.a).(2).(c) must demonstrate competence in the diagnosis and management of adult and pediatric orthopaedic disorders. 

IV.A.5.b) Medical Knowledge 

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

IV.A.5.b).(1) must demonstrate expertise in their knowledge of those areas appropriate for an orthopaedic surgeon; and, 

IV.A.5.b).(2) must demonstrate an investigatory and analytic thinking approach to clinical situations. 

IV.A.5.c) Practice-based Learning and Improvement 

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

Residents are expected to develop skills and habits to be able to meet the following goals: 

IV.A.5.c).(1) identify strengths, deficiencies, and limits in one’s knowledge and expertise; 

IV.A.5.c).(2) set learning and improvement goals; 

IV.A.5.c).(3) identify and perform appropriate learning activities; 

IV.A.5.c).(4) systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement;
IV.A.5.c).(5) incorporate formative evaluation feedback into daily practice; (Outcome)

IV.A.5.c).(6) locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems; (Outcome)

IV.A.5.c).(7) use information technology to optimize learning; (Outcome)

IV.A.5.c).(8) participate in the education of patients, families, students, residents and other health professionals; and, (Outcome)

IV.A.5.c).(9) apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness. (Outcome)

IV.A.5.d) Interpersonal and Communication Skills

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. (Outcome)

Residents are expected to:

IV.A.5.d).(1) communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds; (Outcome)

IV.A.5.d).(2) communicate effectively with physicians, other health professionals, and health related agencies; (Outcome)

IV.A.5.d).(3) work effectively as a member or leader of a health care team or other professional group; (Outcome)

IV.A.5.d).(4) act in a consultative role to other physicians and health professionals; (Outcome)

IV.A.5.d).(5) maintain comprehensive, timely, and legible medical records, if applicable; (Outcome)

IV.A.5.d).(6) create and sustain a therapeutic and ethically sound relationship with patients, and, (Outcome)

IV.A.5.d).(7) use effective listening skills, and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills. (Outcome)

IV.A.5.e) Professionalism
Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. (Outcome)

Residents are expected to demonstrate:

IV.A.5.e).(1) compassion, integrity, and respect for others; (Outcome)

IV.A.5.e).(2) responsiveness to patient needs that supersedes self-interest; (Outcome)

IV.A.5.e).(3) respect for patient privacy and autonomy; (Outcome)

IV.A.5.e).(4) accountability to patients, society and the profession; (Outcome)

IV.A.5.e).(5) sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation; (Outcome)

IV.A.5.e).(6) commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices; and, (Outcome)

IV.A.5.e).(7) sensitivity and responsiveness to fellow health care professionals’ culture, age, gender, and disabilities. (Outcome)

IV.A.5.f) Systems-based Practice

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. (Outcome)

Residents are expected to:

IV.A.5.f).(1) work effectively in various health care delivery settings and systems relevant to their clinical specialty; (Outcome)

IV.A.5.f).(2) coordinate patient care within the health care system relevant to their clinical specialty; (Outcome)

IV.A.5.f).(3) incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate; (Outcome)
IV.A.5.f).(4) advocate for quality patient care and optimal patient care systems; (Outcome)

IV.A.5.f).(5) work in interprofessional teams to enhance patient safety and improve patient care quality; and, (Outcome)

IV.A.5.f).(6) participate in identifying system errors and implementing potential systems solutions. (Outcome)

IV.A.6. Curriculum Organization and Resident Experiences

IV.A.6.a) The program director must be responsible for the design, implementation, and oversight of the PG-1 year. The PG-1 year must include: (Core)

IV.A.6.a).(1) six months of structured education on non-orthopaedic surgery rotations designed to foster proficiency in basic surgical skills, the per-operative care of surgical patients, musculoskeletal image interpretation, medical management of patients, and airway management skills; (Core)

IV.A.6.a).(1).(a) At least three months must be on surgical rotations chosen from the following: general surgery, general surgery trauma, plastic/burn surgery, surgical, or medical intensive care, and vascular surgery. (Core)

IV.A.6.a).(1).(b) The additional three months must be on rotations chosen from the following: anesthesiology, basic surgical skills, emergency medicine, general surgery, general surgery trauma, internal medicine, medical or surgical intensive care, musculoskeletal radiology, neurological surgery, pediatric surgery, physical medicine and rehabilitation, plastic/burn surgery, rheumatology, and vascular surgery. (Core)

IV.A.6.a).(1).(c) The total time a resident is assigned to any one non-orthopaedic service must not exceed two months. (Core)

IV.A.6.a).(2) formal instruction in basic surgical skills, which may be provided longitudinally or as a dedicated rotation during either the orthopaedic or non-orthopaedic surgical rotations; and, (Core)

IV.A.6.a).(2).(a) Basic surgical skills training must be designed to integrate with skills training in subsequent post graduate years and should prepare the PGY-1 resident to participate in orthopaedic surgery cases. (Core)
IV.A.6.a).(2).(b) The basic surgical skills curriculum must include:

IV.A.6.a).(2).(b).(i) goals and objectives and assessment metrics; (Core)

IV.A.6.a).(2).(b).(ii) skills used in the initial management of injured patients, including splinting, casting, application of traction devices, and other types of immobilization; and, (Core)

IV.A.6.a).(2).(b).(iii) basic operative skills, including soft tissue management, suturing, bone management, arthroscopy, fluoroscopy, and use of basic orthopaedic equipment. (Core)

IV.A.6.a).(3) six months of orthopaedic surgery rotations designed to foster proficiency in basic surgical skills, the general care of orthopaedic patients both as inpatients and in the outpatient clinics, the management of orthopaedic patients in the emergency department, and the cultivation of an orthopaedic knowledge base. (Core)

IV.A.6.b) The PG-1 year must include residents’ participation in activities that will give them the opportunity to:

IV.A.6.b).(1) formulate principles and assess, plan, and initiate treatment of adult and pediatric patients with surgical and/or medical problems; (Core)

IV.A.6.b).(2) care for patients with surgical and medical emergencies, multiple organ system trauma, soft tissue wounds; (Core)

IV.A.6.b).(3) care for critically-ill patients; and, (Core)

IV.A.6.b).(4) develop an understanding of surgical anesthesia, including anesthetic risks and complications. (Outcome)

IV.A.6.c) The PG-2-5 years must include at least 36 months of rotations on orthopaedic services. (Core)

IV.A.6.c).(1) Rotations on related services such as plastic surgery, physical medicine and rehabilitation, rheumatology, or neurological surgery are suggested but not required. (Detail)

IV.A.6.c).(2) The final 24 months of education must be obtained in a single program. (Core)

IV.A.6.d) Each resident’s experiences must include:

IV.A.6.d).(1) the diagnosis and management of adult and pediatric orthopaedic disorders, including: (Core)
IV.A.6.d).(1).(a) joint reconstruction; (Core)

IV.A.6.d).(1).(b) trauma, including multisystem trauma; (Core)

IV.A.6.d).(1).(c) surgery of the spine, including disk surgery, spinal trauma, and spinal deformities; (Core)

IV.A.6.d).(1).(d) hand surgery; (Core)

IV.A.6.d).(1).(e) foot surgery; (Core)

IV.A.6.d).(1).(f) athletic injuries; (Core)

IV.A.6.d).(1).(g) orthopaedic rehabilitation; (Core)

IV.A.6.d).(1).(h) orthopaedic oncology, including metastatic disease; and, (Core)

IV.A.6.d).(1).(i) amputations and post-amputation care. (Core)

IV.A.6.d).(2) non-operative outpatient diagnosis and care, including all orthopaedic anatomic areas; and, (Core)

IV.A.6.d).(2).(a) Each resident must have at least one half-day per week and should have two half-days per week of outpatient clinical experience in physician offices or hospital clinics with a minimum of 10 patients per session on all clinical rotations. (Core)

IV.A.6.d).(2).(b) Each resident must be supervised by faculty and instructed in pre- and post-operative assessment as well as the operative and non-operative care of general and subspecialty orthopaedic patients. (Core)

IV.A.6.d).(2).(c) Opportunities for resident involvement in all aspects of outpatient care of the same patient should be maximized. (Core)

IV.A.6.d).(3) increasing responsibility for patient care, under faculty supervision (as appropriate for each resident's ability and experience), as he or she progresses through the program. (Core)

IV.A.6.d).(3).(a) Residents must have inpatient and outpatient experience with all age groups. (Core)

IV.A.6.e) Clinical experience for PGY-1-5 residents must be tracked in the ACGME Case Log System. (Core)

IV.A.6.e).(1) Each graduating resident must log between 1000 and
IV.B. Residents’ Scholarly Activities

IV.B.1. The curriculum must advance residents’ knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care. (Core)

IV.B.1.a) Resident education must include instruction in experimental design, hypothesis testing, and other current research methods, as well as participation in clinical or basic research. (Detail)

IV.B.2. Residents should participate in scholarly activity. (Core)

IV.B.2.a) Each resident must demonstrate scholarship through at least one of the following activities:

IV.B.2.a).(1) participation in sponsored research; (Outcome)

IV.B.2.a).(2) preparation of an article for a peer-reviewed publication; (Outcome)

IV.B.2.a).(3) presentation of research at a regional or national meeting; or, (Outcome)

IV.B.2.a).(4) participation in a structured literature review of an important topic. (Outcome)

IV.B.3. The sponsoring institution and program should allocate adequate educational resources to facilitate resident involvement in scholarly activities. (Detail)

V. Evaluation

V.A. Resident Evaluation

V.A.1. The program director must appoint the Clinical Competency Committee. (Core)

V.A.1.a) At a minimum the Clinical Competency Committee must be composed of three members of the program faculty. (Core)

V.A.1.a).(1) The program director may appoint additional members of the Clinical Competency Committee.

V.A.1.a).(1).(a) These additional members must be physician faculty members from the same program or other programs, or other health professionals who have extensive contact and experience with the program’s residents in patient care and other health care settings. (Core)
V.A.1.a).(1).(b) Chief residents who have completed core residency programs in their specialty and are eligible for specialty board certification may be members of the Clinical Competency Committee. (Core)

V.A.1.b) There must be a written description of the responsibilities of the Clinical Competency Committee. (Core)

V.A.1.b).(1) The Clinical Competency Committee should:

V.A.1.b).(1).(a) review all resident evaluations semi-annually; (Core)

V.A.1.b).(1).(b) prepare and ensure the reporting of Milestones evaluations of each resident semi-annually to ACGME; and, (Core)

V.A.1.b).(1).(c) advise the program director regarding resident progress, including promotion, remediation, and dismissal. (Detail)

V.A.2. Formative Evaluation

V.A.2.a) The faculty must evaluate resident performance in a timely manner during each rotation or similar educational assignment, and document this evaluation at completion of the assignment. (Core)

V.A.2.b) The program must:

V.A.2.b).(1) provide objective assessments of competence in patient care and procedural skills, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice based on the specialty-specific Milestones; (Core)

V.A.2.b).(2) use multiple evaluators (e.g., faculty, peers, patients, self, and other professional staff); (Detail)

V.A.2.b).(3) document progressive resident performance improvement appropriate to educational level; and, (Core)

V.A.2.b).(4) provide each resident with documented semiannual evaluation of performance with feedback. (Core)

V.A.2.c) The evaluations of resident performance must be accessible for review by the resident, in accordance with institutional
V.A.2.d) Semiannual assessment must include a review of case volume and breadth, and must ensure that residents are entering cases into the ACGME Case Log System in a timely manner. (Core)

V.A.3. Summative Evaluation

V.A.3.a) The specialty-specific Milestones must be used as one of the tools to ensure residents are able to practice core professional activities without supervision upon completion of the program. (Core)

V.A.3.b) The program director must provide a summative evaluation for each resident upon completion of the program. (Core)

This evaluation must:

V.A.3.b).(1) become part of the resident’s permanent record maintained by the institution, and must be accessible for review by the resident in accordance with institutional policy; (Detail)

V.A.3.b).(2) document the resident’s performance during the final period of education; and, (Detail)

V.A.3.b).(3) verify that the resident has demonstrated sufficient competence to enter practice without direct supervision. (Detail)

V.B. Faculty Evaluation

V.B.1. At least annually, the program must evaluate faculty performance as it relates to the educational program. (Core)

V.B.2. These evaluations should include a review of the faculty’s clinical teaching abilities, commitment to the educational program, clinical knowledge, professionalism, and scholarly activities. (Detail)

V.B.3. This evaluation must include at least annual written confidential evaluations by the residents. (Detail)

V.C. Program Evaluation and Improvement

V.C.1. The program director must appoint the Program Evaluation Committee (PEC). (Core)

V.C.1.a) The Program Evaluation Committee:

V.C.1.a).(1) must be composed of at least two program faculty members and should include at least one resident;
(Core)

V.C.1.a).(2) must have a written description of its responsibilities; and,

V.C.1.a).(3) should participate actively in:

V.C.1.a).(3).(a) planning, developing, implementing, and evaluating educational activities of the program;

V.C.1.a).(3).(b) reviewing and making recommendations for revision of competency-based curriculum goals and objectives;

V.C.1.a).(3).(c) addressing areas of non-compliance with ACGME standards; and,

V.C.1.a).(3).(d) reviewing the program annually using evaluations of faculty, residents, and others, as specified below.

V.C.2. The program, through the PEC, must document formal, systematic evaluation of the curriculum at least annually, and is responsible for rendering a written, annual program evaluation.

The program must monitor and track each of the following areas:

V.C.2.a) resident performance;

V.C.2.b) faculty development;

V.C.2.c) graduate performance, including performance of program graduates on the certification examination;

V.C.2.c).(1) 80 percent of a program’s eligible graduates from the preceding five years taking Part I of the ABOS certifying examination for the first time should pass.

V.C.2.c).(2) 75 percent of a program’s eligible graduates from the preceding five years taking Part II of the ABOS certifying examination for the first time should pass.

V.C.2.c).(3) 80 percent of a program’s eligible graduates from the preceding five years taking the Part I written examination of the American Osteopathic Board of Orthopaedic Surgery (AOBOS) orthopaedic surgery certifying examination for the first time should pass.

V.C.2.c).(4) 75 percent of a program’s eligible graduates from the preceding five years taking the Part II oral examination of
the AOBOS orthopaedic surgery certifying examination for the first time should pass. *(Outcome)*

V.C.2.d) program quality; and, *(Core)*

V.C.2.d).(1) Residents and faculty must have the opportunity to evaluate the program confidentially and in writing at least annually, and *(Detail)*

V.C.2.d).(2) The program must use the results of residents’ and faculty members’ assessments of the program together with other program evaluation results to improve the program. *(Detail)*

V.C.2.e) progress on the previous year’s action plan(s). *(Core)*

V.C.3. The PEC must prepare a written plan of action to document initiatives to improve performance in one or more of the areas listed in section V.C.2., as well as delineate how they will be measured and monitored. *(Core)*

V.C.3.a) The action plan should be reviewed and approved by the teaching faculty and documented in meeting minutes. *(Detail)*

VI. Resident Duty Hours in the Learning and Working Environment

VI.A. Professionalism, Personal Responsibility, and Patient Safety

VI.A.1. Programs and sponsoring institutions must educate residents and faculty members concerning the professional responsibilities of physicians to appear for duty appropriately rested and fit to provide the services required by their patients. *(Core)*

VI.A.2. The program must be committed to and responsible for promoting patient safety and resident well-being in a supportive educational environment. *(Core)*

VI.A.3. The program director must ensure that residents are integrated and actively participate in interdisciplinary clinical quality improvement and patient safety programs. *(Core)*

VI.A.4. The learning objectives of the program must:

VI.A.4.a) be accomplished through an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events; and, *(Core)*

VI.A.4.b) not be compromised by excessive reliance on residents to fulfill non-physician service obligations. *(Core)*

VI.A.5. The program director and institution must ensure a culture of
professionalism that supports patient safety and personal responsibility. (Core)

VI.A.6. Residents and faculty members must demonstrate an understanding and acceptance of their personal role in the following:

VI.A.6.a) assurance of the safety and welfare of patients entrusted to their care; (Outcome)

VI.A.6.b) provision of patient- and family-centered care; (Outcome)

VI.A.6.c) assurance of their fitness for duty; (Outcome)

VI.A.6.d) management of their time before, during, and after clinical assignments; (Outcome)

VI.A.6.e) recognition of impairment, including illness and fatigue, in themselves and in their peers; (Outcome)

VI.A.6.f) attention to lifelong learning; (Outcome)

VI.A.6.g) the monitoring of their patient care performance improvement indicators; and, (Outcome)

VI.A.6.h) honest and accurate reporting of duty hours, patient outcomes, and clinical experience data. (Outcome)

VI.A.7. All residents and faculty members must demonstrate responsiveness to patient needs that supersedes self-interest. They must recognize that under certain circumstances, the best interests of the patient may be served by transitioning that patient’s care to another qualified and rested provider. (Outcome)

VI.B. Transitions of Care

VI.B.1. Programs must design clinical assignments to minimize the number of transitions in patient care. (Core)

VI.B.2. Sponsoring institutions and programs must ensure and monitor effective, structured hand-over processes to facilitate both continuity of care and patient safety. (Core)

VI.B.3. Programs must ensure that residents are competent in communicating with team members in the hand-over process. (Outcome)

VI.B.4. The sponsoring institution must ensure the availability of schedules that inform all members of the health care team of attending physicians and residents currently responsible for each patient’s care. (Detail)
VI.C. Alertness Management/Fatigue Mitigation

VI.C.1. The program must:

VI.C.1.a) educate all faculty members and residents to recognize the signs of fatigue and sleep deprivation; (Core)

VI.C.1.b) educate all faculty members and residents in alertness management and fatigue mitigation processes; and, (Core)

VI.C.1.c) adopt fatigue mitigation processes to manage the potential negative effects of fatigue on patient care and learning, such as naps or back-up call schedules. (Detail)

VI.C.2. Each program must have a process to ensure continuity of patient care in the event that a resident may be unable to perform his/her patient care duties. (Core)

VI.C.3. The sponsoring institution must provide adequate sleep facilities and/or safe transportation options for residents who may be too fatigued to safely return home. (Core)

VI.D. Supervision of Residents

VI.D.1. In the clinical learning environment, each patient must have an identifiable, appropriately-credentialed and privileged attending physician (or licensed independent practitioner as approved by each Review Committee) who is ultimately responsible for that patient’s care. (Core)

A licensed independent practitioner may include non-physician faculty working in conjunction with the orthopaedic surgery department. (Detail)

VI.D.1.a) This information should be available to residents, faculty members, and patients. (Detail)

VI.D.1.b) Residents and faculty members should inform patients of their respective roles in each patient’s care. (Detail)

VI.D.2. The program must demonstrate that the appropriate level of supervision is in place for all residents who care for patients. (Core)

Supervision may be exercised through a variety of methods. Some activities require the physical presence of the supervising faculty member. For many aspects of patient care, the supervising physician may be a more advanced resident or fellow. Other portions of care provided by the resident can be adequately supervised by the immediate availability of the supervising faculty member or resident physician, either in the institution, or by means of telephonic and/or electronic modalities. In some circumstances, supervision may include post-hoc review of resident-delivered care.
with feedback as to the appropriateness of that care.  

VI.D.3. Levels of Supervision

To ensure oversight of resident supervision and graded authority and responsibility, the program must use the following classification of supervision:  

VI.D.3.a) Direct Supervision – the supervising physician is physically present with the resident and patient.  

VI.D.3.b) Indirect Supervision:

VI.D.3.b).(1) with direct supervision immediately available – the supervising physician is physically within the hospital or other site of patient care, and is immediately available to provide Direct Supervision.  

VI.D.3.b).(2) with direct supervision available – the supervising physician is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic and/or electronic modalities, and is available to provide Direct Supervision.  

VI.D.3.c) Oversight – the supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered.  

VI.D.4. The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each resident must be assigned by the program director and faculty members.  

VI.D.4.a) The program director must evaluate each resident’s abilities based on specific criteria. When available, evaluation should be guided by specific national standards-based criteria.  

VI.D.4.b) Faculty members functioning as supervising physicians should delegate portions of care to residents, based on the needs of the patient and the skills of the residents.  

VI.D.4.c) Senior residents or fellows should serve in a supervisory role of junior residents in recognition of their progress toward independence, based on the needs of each patient and the skills of the individual resident or fellow.  

VI.D.5. Programs must set guidelines for circumstances and events in which residents must communicate with appropriate supervising faculty members, such as the transfer of a patient to an intensive care unit, or end-of-life decisions.
VI.D.5.a) Each resident must know the limits of his/her scope of authority, and the circumstances under which he/she is permitted to act with conditional independence.  

(Outcome)

VI.D.5.a).(1) In particular, PGY-1 residents should be supervised either directly or indirectly with direct supervision immediately available.  

(Core)

VI.D.6. Faculty supervision assignments should be of sufficient duration to assess the knowledge and skills of each resident and delegate to him/her the appropriate level of patient care authority and responsibility.  

(Detail)

VI.E. Clinical Responsibilities

The clinical responsibilities for each resident must be based on PGY-level, patient safety, resident education, severity and complexity of patient illness/condition and available support services.  

(Core)

VI.F. Teamwork

Residents must care for patients in an environment that maximizes effective communication. This must include the opportunity to work as a member of effective interprofessional teams that are appropriate to the delivery of care in the specialty.  

(Core)

VI.G. Resident Duty Hours

VI.G.1. Maximum Hours of Work per Week

Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities and all moonlighting.  

(Core)

VI.G.1.a) Duty Hour Exceptions

A Review Committee may grant exceptions for up to 10% or a maximum of 88 hours to individual programs based on a sound educational rationale.  

(Detail)

The Review Committee will not consider requests for exceptions to the 80-hour limit to the fellows' work week.

VI.G.1.a).(1) In preparing a request for an exception the program director must follow the duty hour exception policy from the ACGME Manual on Policies and Procedures.  

(Detail)

VI.G.1.a).(2) Prior to submitting the request to the Review Committee, the program director must obtain approval
VI.G.2. Moonlighting

VI.G.2.a) Moonlighting must not interfere with the ability of the resident to achieve the goals and objectives of the educational program. (Core)

VI.G.2.b) Time spent by residents in Internal and External Moonlighting (as defined in the ACGME Glossary of Terms) must be counted towards the 80-hour Maximum Weekly Hour Limit. (Core)

VI.G.2.c) PGY-1 residents are not permitted to moonlight. (Core)

VI.G.3. Mandatory Time Free of Duty

Residents must be scheduled for a minimum of one day free of duty every week (when averaged over four weeks). At-home call cannot be assigned on these free days. (Core)

VI.G.4. Maximum Duty Period Length

VI.G.4.a) Duty periods of PGY-1 residents must not exceed 16 hours in duration. (Core)

VI.G.4.b) Duty periods of PGY-2 residents and above may be scheduled to a maximum of 24 hours of continuous duty in the hospital. (Core)

VI.G.4.b).(1) Programs must encourage residents to use alertness management strategies in the context of patient care responsibilities. Strategic napping, especially after 16 hours of continuous duty and between the hours of 10:00 p.m. and 8:00 a.m., is strongly suggested. (Detail)

VI.G.4.b).(2) It is essential for patient safety and resident education that effective transitions in care occur. Residents may be allowed to remain on-site in order to accomplish these tasks; however, this period of time must be no longer than an additional four hours. (Core)

VI.G.4.b).(3) Residents must not be assigned additional clinical responsibilities after 24 hours of continuous in-house duty. (Core)

VI.G.4.b).(4) In unusual circumstances, residents, on their own initiative, may remain beyond their scheduled period of duty to continue to provide care to a single patient. Justifications for such extensions of duty are limited to reasons of required continuity for a severely ill or
unstable patient, academic importance of the events transpiring, or humanistic attention to the needs of a patient or family. (Detail)

VI.G.4.b).(4).(a) Under those circumstances, the resident must:

VI.G.4.b).(4).(a).(i) Appropriately hand over the care of all other patients to the team responsible for their continuing care; and, (Detail)

VI.G.4.b).(4).(a).(ii) Document the reasons for remaining to care for the patient in question and submit that documentation in every circumstance to the program director. (Detail)

VI.G.4.b).(4).(b) The program director must review each submission of additional service, and track both individual resident and program-wide episodes of additional duty. (Detail)

VI.G.5. Minimum Time Off between Scheduled Duty Periods

VI.G.5.a) PGY-1 residents should have 10 hours, and must have eight hours, free of duty between scheduled duty periods. (Core)

VI.G.5.b) Intermediate-level residents should have 10 hours free of duty, and must have eight hours between scheduled duty periods. They must have at least 14 hours free of duty after 24 hours of in-house duty. (Core)

PGY-2 and PGY-3 residents are considered to be at the intermediate level.

VI.G.5.c) Residents in the final years of education must be prepared to enter the unsupervised practice of medicine and care for patients over irregular or extended periods. (Outcome)

PGY-4 and PGY-5 residents and fellows (PGY-6 and above) are considered to be in the final years of education.

VI.G.5.c).(1) This preparation must occur within the context of the 80-hour, maximum duty period length, and one-day-off-in-seven standards. While it is desirable that residents in their final years of education have eight hours free of duty between scheduled duty periods, there may be circumstances when these residents must stay on duty to care for their patients or return to the hospital with fewer than eight hours free of duty. (Detail)
VI.G.5.c).(1).(a) Circumstances of return-to-hospital activities with fewer than eight hours away from the hospital by residents in their final years of education must be monitored by the program director. (Detail)

VI.G.5.c).(1).(b) The Review Committee defines such circumstances as: required continuity of care for a severely ill or unstable patient, or a complex patient with whom the resident has been involved; events of exceptional educational value; or, humanistic attention to the needs of a patient or family.

VI.G.6. Maximum Frequency of In-House Night Float

Residents must not be scheduled for more than six consecutive nights of night float. (Core)

VI.G.6.a) Night float may not exceed three months per year. (Detail)

VI.G.7. Maximum In-House On-Call Frequency

PGY-2 residents and above must be scheduled for in-house call no more frequently than every-third-night (when averaged over a four-week period). (Core)

VI.G.8. At-Home Call

VI.G.8.a) Time spent in the hospital by residents on at-home call must count towards the 80-hour maximum weekly hour limit. The frequency of at-home call is not subject to the every-third-night limitation, but must satisfy the requirement for one-day-in-seven free of duty, when averaged over four weeks. (Core)

VI.G.8.a).(1) At-home call must not be so frequent or taxing as to preclude rest or reasonable personal time for each resident. (Core)

VI.G.8.b) Residents are permitted to return to the hospital while on at-home call to care for new or established patients. Each episode of this type of care, while it must be included in the 80-hour weekly maximum, will not initiate a new “off-duty period”. (Detail)

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*Core Requirements*: Statements that define structure, resource, or process elements essential to every graduate medical educational program.

Detail Requirements*: Statements that describe a specific structure, resource, or process, for achieving compliance with a Core Requirement. Programs and sponsoring institutions in substantial compliance
with the Outcome Requirements may utilize alternative or innovative approaches to meet Core Requirements.

**Outcome Requirements:** Statements that specify expected measurable or observable attributes (knowledge, abilities, skills, or attitudes) of residents or fellows at key stages of their graduate medical education.

**Osteopathic Recognition**
For programs seeking Osteopathic Recognition for the entire program, or for a track within the program, the Osteopathic Recognition Requirements are also applicable.

[http://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/Osteopathic_Recognition_Requirements.pdf](http://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/Osteopathic_Recognition_Requirements.pdf)