

## APPENDIX B: GOALS AND OBJECTIVES

### Overview

Through a unique combination of academic and private practice opportunities, the Campbell Foundation-University of Tennessee orthopaedic residency program strives to provide each resident with a well-rounded foundation in the fundamentals of the science and art of orthopaedic surgery, from which he or she is able to continue learning for the remainder of his or her professional career. The program is designed to obtain a careful balance between academic and theoretical learning and practical experience, with graduated exposure to surgical techniques through a system of categorical orthopaedic services that form the basis of the residents' rotation schedules. Each rotation reinforces the core competencies with the goal of preparing the resident for contemporary orthopaedic practice in which he or she will be able to provide the best possible patient care. Residents are expected to master the cognitive and technical aspects of each rotation to allow progressive assumption of responsibility for more challenging diagnostic and treatment decisions and more complex operative procedures. A combination of didactic, role-modeling, and hands-on training provides each resident with the opportunity to refine his or her knowledge and skills, with clearly defined objectives and timely evaluation for each rotation. While **patient care** and **medical knowledge** are the most visible core competencies, each rotation provides **practice-based learning and improvement** through the resident's exposure to a busy clinical practice and the frequent specialty-based journal clubs from which residents gain scientific knowledge that can be applied to clinical and surgical situations.

**Interpersonal and communication skills and professionalism** are enforced during every rotation by one-on-one interaction with faculty members, who not only role model and instruct but also evaluate the resident's professional behavior and his or her ability to communicate with patients of all ages and circumstances. **System-based practice skills** are honed in all rotations by the completion of necessary forms, records, and other administrative paperwork required for both inpatient and outpatient care. Supervision and instruction of junior residents by more senior residents also develop communication and administrative skills. Although specific activities target each of the core competencies (see **Appendix C**), the assimilation of all of the competencies into every facet of a resident's day-to-day training is, we believe, an effective way to reinforce them and to ensure a well-rounded, well-prepared graduate.

## **Orthopaedic Trauma Rotation (PGY1, PGY2, PGY3, PGY4, PGY5)**

The three-month rotations in trauma at the PGY1, PGY2, PGY3, PGY4, and PGY5 levels are based primarily at a busy urban Level 1 trauma center (Memphis Regional Medical Center, The MED) and allow residents to refine their skills in triage, evaluation, and diagnosis of trauma patients; to steadily increase their participation in the multi-trauma team until serving as senior member; to increase responsibilities for pre-treatment decision making and post-treatment care; and to gradually take a larger role in increasingly complex operative procedures. Because a large number of patients with spinal trauma are treated at the MED, residents on these rotations also gain experience in the treatment of acute spinal injuries.

As the resident progresses from PGY1 to PGY5, he or she assumes more responsibility as a member of the trauma team and his or her active participation in surgery increases from serving as second assistant to being the primary surgeon, under the guidance of trauma faculty members. Progression is based on each resident's knowledge and skill. Diagnostic, treatment-planning, and follow-up skills are developed in the outpatient clinic, allowing residents to experience continuity of care from presentation to discharge.

Trauma rotations are directed by fellowship-trained trauma specialists: Dr. George W. Wood II, Dr. Edward A. Perez, Dr. Thomas A. Russell, and Dr. A. Paige Whittle. Other faculty members also staff surgical cases at the trauma center and are on-call for orthopaedic emergencies at the MED and other local emergency rooms.

### **Overall goals and objectives**

#### **Patient Care**

- Utilize proper triage procedures.
- Determine necessity of consultation with other specialties.
- Select appropriate diagnostic procedures for trauma patients.
- Determine indications for and timing of orthopaedic surgical procedures needed.
- Coordinate orthopaedic treatment with other disciplines.
- Perform the following surgical skills or procedures including but not limited to open reduction and internal fixation of fractures, intramedullary nailing (open and closed) of fractures, apply external fixation devices, percutaneous pinning techniques, soft-tissue management (débridement, grafting, tissue transfer, etc), and limb-salvage procedures.

#### **Medical Knowledge**

#### **Practice Based Learning and Improvement**

- Evaluate patient care practices, discuss how they meet standards, and develop ways to improve these practices.
- Participate in all mandated conferences.
- Complete a QA/QI project under faculty direction.

- Demonstrate improvement in clinical management.
- Implement new scientific advances and clinical approaches from a variety of sources into current patient care practices.
- Analyze and evaluate medical literature and examine alternate sources for relevant information that pertains to their patient's health problems.
- Take responsibility for lifelong learning.
- Use information technology such as Up-To-Date, PubMed or Ovid to enhance patient care.
- Teach fellow residents, medical students, and interns.
- Use patient care errors and near misses to teach residents and students.

### **Interpersonal and Communication Skills**

- Carefully listen to patients to assess the patient's health problems including verbal and non-verbal communications.
- Communicate and establish a therapeutic relationship with patients.
- Demonstrate effective communication skills with patients, families, and other health care personnel, especially communications addressing end-of-life decisions.
- Present a case accurately and succinctly to attending physicians, fellow residents, and other health care professionals.
- Provide timely, legible, thorough, succinct medical record documentation - histories and physical examinations, admission notes, progress notes, procedure notes and discharge summaries.
- Educate and counsel patients, and families using non-technical and clear language.
- Demonstrate skill in handling all difficult patient care situations.
- Speak clearly when addressing patient issues and management plans with patients, families, and health care colleagues.
- Spend adequate time with patients addressing their questions and concerns.
- Work well within team context relating to students, residents, attending physicians, nurses, and patients
- Communicate effectively when discussing patient conditions and health care practices with fellow residents, attending physicians and other health care providers.
- Represent the orthopaedics staff in interactions with patients and their families, acting with compassion and consideration at all times.

### **Professionalism**

- Professionally interact with patients, attending physicians and allied health care personnel.
- Establish trust with patients and staff.
- Demonstrate respect, compassion, integrity, punctuality, reliability, and honesty with regards to patients and colleagues.
- Show regard for the opinions of others.
- Display initiative and leadership.

- Acknowledge errors, alert patients and appropriate health care providers, and create an action plan to minimize them.
- Demonstrate concern for educational development of students and residents.
- Volunteer for activities for the good of the institution and community.
- Ask for help when needed and seek and accept feedback.
- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Maintain patient confidentiality.
- Demonstrate understanding of the ethical concerns about pharmaceutical and patient gifts.
- Compassionately respond to issues of culture, age, gender, ethnicity, and disability in patient care.
- Interface with referring and consulting physicians and appropriate hospital staff in a professional and respectful manner, recognizing and instituting the core competencies.

### **Systems Based Practice**

- Deliver high-quality medical care and demonstrate ability to practice medicine in a private, government, and inner city hospital settings
- Demonstrate knowledge of types of medical practice and health care delivery systems and understand how this affects patient care.
- Demonstrate knowledge of business aspects of medical practice including coding and insurance.
- Work with ancillary team members (discharge planners, case managers, and social workers) to provide high quality cost-effective care.
- Practice effective allocation of health care resources to avoid compromising quality of care.
- Interact with patients, attending physicians and allied health care personnel as part of a health care team.
- Serve as a patient advocate in the outpatient and inpatient setting.
- Direct care in inpatient and outpatient settings as a member of a multidisciplinary team.
- Demonstrate knowledge of how the health care system including other physicians, nurses, and health care professionals affect their patient care practices.

### **Specific goals and objectives**

#### PGY1

For PGY1 residents, the trauma rotation serves as an introduction to the treatment of patients with traumatic, often multiple, orthopaedic injuries. At this level, the resident's involvement in the trauma team consists primarily of triage and assisting more senior members.

Specific skills to be developed include:

- Basic emergency life-support skills
- Determination of appropriate tests and imaging studies
- Interpretation of routine radiographic views
- Casting and splinting techniques
- Closed reduction of fractures
- Appropriate traction choice and implementation
- Patient evaluation in outpatient clinic
- Postoperative management of trauma patients
- Second assistant in basic trauma operative procedures such as reduction and fixation of simple fracture patterns, hardware removal, irrigation and débridement of open wounds, suturing and stapling techniques

## PGY2

PGY2 residents assume a more active role in the trauma team, providing more input into diagnosis and treatment of multi-trauma patients. They consult with faculty members in treatment-decision making and follow-up care planning.

Specific skills to be developed include:

- Formulation of treatment plans for emergency treatment of trauma patients
- Determination of necessity of consultation with other specialties
- Interpretation of more sophisticated radiographic views (including specialized views of the joints and spine)
- Evaluation of postoperative patients and formulation of follow-up care protocols
- Appropriate application of orthoses, such as braces, casts, commercial immobilizers
- Primary surgeon (with faculty monitoring) for basic trauma operative procedures such as reduction and fixation of simple fracture patterns, hardware removal, irrigation and débridement of open wounds, suturing and stapling techniques, intramedullary nailing of long bone fractures
- First assistant in more complicated procedures, such as closed reduction and percutaneous pinning of fractures

## PGY3

PGY3 residents begin to function as an integral part of the trauma team, formulating emergency treatment plans and determining appropriate imaging and laboratory studies. With faculty consultation, they determine appropriate indications for operative or nonoperative treatment.

Specific skills to be developed include:

- Formulation and execution of emergency treatment of trauma patients
- Interpretation of imaging studies in addition to radiography, such as computed tomography, angiography, and bone scanning
- Determination of indications for and timing of orthopaedic surgical procedures

- Primary surgeon, with faculty monitoring, for open reduction and internal fixation of simple fracture patterns, including intramedullary nailing and plate-and-screw fixation
- First assistant for more complex procedures, such as application of external fixation devices, bone and skin grafting, tissue transfer, etc.
- Assumption of responsibility for care of postoperative patients, including rehabilitation planning

#### PGY4

PGY4 residents are "second-in-command" of the trauma team, assisting faculty and senior residents in the emergency treatment of multi-trauma patients and actively determining appropriate operative and nonoperative treatment methods. They also instruct and assist more junior residents in their duties.

Specific skills to be developed include:

- Coordination of orthopaedic treatment with other specialties
- Interpretation of imaging studies including radiographs, computed tomography, bone scanning, and magnetic resonance imaging
- Determination of necessity and timing of operative orthopaedic treatment
- Application of external fixation devices for temporary or definitive fixation
- Primary surgeon, with faculty monitoring, for open reduction and internal fixation of simple fracture patterns, including intramedullary nailing and plate-and-screw fixation
- Primary surgeon, with faculty monitoring, for more complex procedures, such as bone and skin grafting, tissue transfer, etc.; open and closed intramedullary nailing of long-bone, non-articular fractures; plate-and-screw fixation of long-bone, non-articular fractures
- First assistant for more complex procedures, including acetabular, pelvic, and spinal fractures; comminuted fractures; intraarticular fractures; and reconstructive procedures for malunion or nonunion

#### PGY5

At the PGY5 level, the resident is the senior-most member of the trauma team, directing other team members as to appropriate emergency treatment and diagnostic modalities. He or she is responsible for the immediate care of multi-trauma patients and for determining the necessity for and timing of orthopaedic operative procedures.

Specific skills to be developed include:

- Coordination of orthopaedic treatment with other specialties
- Interpretation of imaging studies including radiographs, computed tomography, bone scanning, and magnetic resonance imaging
- Patient evaluation in outpatient clinics to determine appropriate treatment, non-operative or operative, of complications of fractures, such as nonunion, malunion, and osteomyelitis

- Primary surgeon, with faculty monitoring, for open reduction and internal fixation of simple fracture patterns, including intramedullary nailing and plate-and-screw fixation
- Primary surgeon, with faculty monitoring, for more complex procedures, such as bone and skin grafting, tissue transfer, etc.; open and closed intramedullary nailing of long-bone, non-articular fractures; plate-and-screw fixation of long-bone, non-articular fractures
- Primary surgeon, with faculty monitoring, for more complex procedures, including acetabular, pelvic, and spinal fractures; comminuted fractures; intraarticular fractures; and reconstructive procedures for malunion or nonunion

## **Implementation**

In addition to daily role-modeling and one-on-one instruction, orthopaedic trauma treatment skills are enhanced by a number of specific activities.

- Daily morning conference for presentation and discussion of trauma patients, postoperative and preoperative, for planning of treatment and follow-up care and review of complications; every new patient is presented in a PowerPoint presentation to the faculty and other residents for discussion
- Weekly Fracture Conference at which different fractures are presented and discussed, with emphasis on classification, treatment options, and outcomes based on the resident's reading and study.
- Monthly multi-disciplinary trauma rounds at which presentations of multi-trauma patients are made in conjunction with other services such as general surgery, vascular surgery, plastic surgery, and medicine.
- Monthly Morbidity & Mortality Conference at which outcomes and complications are presented and discussed with a view to preventing future occurrences.
- Regular hands-on surgical training courses emphasizing fracture fixation
- Basic science lecture series for presentation and discussion of the biology and biomechanics of fracture healing
- Trauma Journal Club for discussion of relevant current literature

## **Reading list**

- Bucholz and Heckman: Rockwood and Green's Fractures in Adults, 5<sup>th</sup> edition
- Browner, Jupiter, Levine, and Trafton: Skeletal Trauma, 3<sup>rd</sup> edition.
- Koval and Zuckerman: Handbook of Fractures
- Selected articles from relevant literature (list maintained in library and distributed to residents at start of rotation)

## **Evaluation**

- Residents are globally evaluated by faculty members based on the elements of the core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. Their progression to more responsibility and more

participation in surgery is based on observed advances in medical knowledge and practice-based learning. In the out-patient and in-patient postoperative settings, they are evaluated on their professionalism and communication skills in dealing with patients, families, other specialists, medical and paramedical personnel, junior and senior residents, and faculty members. System-based practice is evaluated by the resident's participation in monthly departmental meetings where M&M reports are presented, administrative issues are raised, and strategies for improving patient care are developed.

- Written evaluations are completed by faculty members at the end of each rotation.
- Annual oral examinations are held each year, with one section devoted to care of multi-trauma patients.

### **Sports medicine rotations (PGY2, PGY4, PGY5)**

The 6-week sports medicine rotations are directed by fellowship-trained sports medicine specialists Dr. Frederick Azar, Dr. Robert Miller, Dr. S. Terry Canale, Dr. Barry Phillips, and Dr. Jeff Dlabach. Clinical experience is gained primarily at the private-practice outpatient clinics. Most outpatient surgeries are done at the Campbell Clinic surgery center or other free-standing surgery centers. With faculty members serving as team physicians for a number and variety of local professional, collegiate, and secondary school athletic teams, resident experience with sports-related conditions and injuries is broad and varied. The presence of several certified athletic trainers among the physical therapy staff ensures adequate exposure to conditioning and rehabilitation protocols.

### **Overall goals and objectives**

#### **Patient Care**

- Provide specialized diagnostic test and maneuvers for sport injuries.
- Interpret diagnostic imaging results (radiographs, CT, MRI).
- Formulate physical therapy protocols for nonoperative treatment of sports injuries.
- Determine appropriate operative procedure for athlete according to individual differences (i.e., age, condition, level of competition).
- Formulate postoperative rehabilitation protocols.
- Perform the following surgical skills or procedures including but not limited to knee arthroscopy, shoulder arthroscopy (lateral decubitus position, beach chair position), ankle ligament reconstruction, rotator cuff, ACL reconstruction (open and arthroscopic), shoulder stabilization, and tendon repair and reconstruction.

#### **Medical Knowledge**

#### **Practice Based Learning and Improvement**

- Evaluate patient care practices, discuss how they meet standards, and develop ways to improve these practices.
- Participate in all mandated conferences.
- Complete a QA/QI project under faculty direction.
- Demonstrate improvement in clinical management.
- Implement new scientific advances and clinical approaches from a variety of sources into current patient care practices.
- Analyze and evaluate medical literature and examine alternate sources for relevant information that pertains to their patient's health problems.
- Take responsibility for lifelong learning.
- Use information technology such as Up-To-Date, PubMed or Ovid to enhance patient care.
- Teach fellow residents, medical students, and interns.
- Use patient care errors and near misses to teach residents and students.

### **Interpersonal and Communication Skills**

- Carefully listen to patients to assess the patient's health problems including verbal and non-verbal communications.
- Communicate and establish a therapeutic relationship with patients.
- Demonstrate effective communication skills with patients, families, and other health care personnel, especially communications addressing end-of-life decisions.
- Present a case accurately and succinctly to attending physicians, fellow residents, and other health care professionals.
- Provide timely, legible, thorough, succinct medical record documentation - histories and physical examinations, admission notes, progress notes, procedure notes and discharge summaries.
- Educate and counsel patients, and families using non-technical and clear language.
- Demonstrate skill in handling all difficult patient care situations.
- Speak clearly when addressing patient issues and management plans with patients, families, and health care colleagues.
- Spend adequate time with patients addressing their questions and concerns.
- Work well within team context relating to students, residents, attending physicians, nurses, and patients
- Communicate effectively when discussing patient conditions and health care practices with fellow residents, attending physicians and other health care providers.
- Represent the orthopaedics staff in interactions with patients and their families, acting with compassion and consideration at all times.

### **Professionalism**

- Professionally interact with patients, attending physicians and allied health care personnel.
- Establish trust with patients and staff.

- Demonstrate respect, compassion, integrity, punctuality, reliability, and honesty with regards to patients and colleagues.
- Show regard for the opinions of others.
- Display initiative and leadership.
- Acknowledge errors, alert patients and appropriate health care providers, and create an action plan to minimize them.
- Demonstrate concern for educational development of students and residents.
- Volunteer for activities for the good of the institution and community.
- Ask for help when needed and seek and accept feedback.
- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Maintain patient confidentiality.
- Demonstrate understanding of the ethical concerns about pharmaceutical and patient gifts.
- Compassionately respond to issues of culture, age, gender, ethnicity, and disability in patient care.
- Interface with referring and consulting physicians and appropriate hospital staff in a professional and respectful manner, recognizing and instituting the core competencies.

### **Systems Based Practice**

- Deliver high-quality medical care and demonstrate ability to practice medicine in a private, government, and inner city hospital settings
- Demonstrate knowledge of types of medical practice and health care delivery systems and understand how this affects patient care.
- Demonstrate knowledge of business aspects of medical practice including coding and insurance.
- Work with ancillary team members (discharge planners, case managers, and social workers) to provide high quality cost-effective care.
- Practice effective allocation of health care resources to avoid compromising quality of care.
- Interact with patients, attending physicians and allied health care personnel as part of a health care team.
- Serve as a patient advocate in the outpatient and inpatient setting.
- Direct care in inpatient and outpatient settings as a member of a multidisciplinary team.
- Demonstrate knowledge of how the health care system including other physicians, nurses, and health care professionals affect their patient care practices.

### **Specific goals and objectives**

#### PGY2 (Sports Medicine C)

This rotation serves at the resident's introduction to the specialized diagnostic tests and maneuvers used for evaluation of patients with athletic injuries and to the nonoperative

and operative options for treatment of these injuries. Working with faculty and senior residents, PGY2 residents participate in pre-season evaluations and in-season treatment of professional, collegiate, and secondary-school athletes.

Specific skills to be developed include:

- Accurate history-taking and physical examination of patients with sports-related injuries, including diagnostic maneuvers such as the Lachman, pivot shift, reverse pivot shift, etc.
- Determination of appropriate diagnostic imaging modalities for evaluation of ligamentous, tendinous, and bony pathologies
- Interpretation of plain radiographic views and specialized views used for evaluation of the ankle, knee, elbow, and shoulder (i.e., Hughston view, sunrise view, etc.)
- Understanding of the physiology and biomechanics of sports-related injuries
- Recognition of the incidence of common athletic injuries in specific age groups and specific sports to assist in differential diagnosis
- Use of physical therapy modalities in the nonoperative treatment of sports injuries
- Use of braces and orthoses for treatment and prevention of sports injuries
- Principles of rehabilitation and strength training to allow determination of appropriate regimens for injured athletes
- Placement of arthroscopic portals in the knee and shoulder (as first assistant)
- Basic arthroscopic triangulation techniques for evaluation and treatment of the knee and shoulder (as first assistant), including loose body removal, meniscal repair, and joint débridement.
- Basic surgical approaches for open reconstructive procedures of the ankle, knee, elbow, and shoulder

#### PGY4 (Sports Medicine B)

During this second three-month rotation in sports medicine, the resident assumes more responsibility for patient evaluation and formulation of operative and nonoperative treatment plans. He or she also participates in the supervision and instruction of junior residents. Along with faculty members, the resident provides on-site coverage for professional, collegiate, and secondary-school athletic events.

Specific skills to be developed include:

- Refinement of diagnostic skills using physical maneuvers and imaging modalities
- Interpretation of more sophisticated imaging modalities, including computed tomography and magnetic resonance imaging
- Formulation of nonoperative and operative treatment plans
- Familiarity with appropriate protocols for on-field treatment of injured athletes, including those with spinal injuries
- Primary surgeon (with faculty monitoring) for basic arthroscopic procedures, loose body removal, meniscal repair, joint débridement. ACL repair and reconstruction, tendon and ligament repair

- First assistant for more complex arthroscopic procedures, such as ligament (PCL, MCL, PLC) reconstruction, repair or reconstruction of the rotator cuff and other shoulder stabilization procedures,
- First assistant for open procedures such as tibial and femoral osteotomies, osteochondral allograft procedures, autologous chondrocyte implantation, tendon and ligament repair, treatment of knee dislocations

### PGY5 (Sports Medicine A)

During the final three-month sports medicine rotation, the resident assumes more responsibility for the supervision and instruction of junior residents and serves as primary surgeon for more complex surgical procedures, both open and arthroscopic. Clinical skills in diagnosis are refined, and treatment plans for more complicated conditions or injuries are formulated and implemented.

Specific skills to be developed include:

- Continued care of injured athletes from evaluation and treatment-planning through implementation and rehabilitation
- Assumption of larger role in on-site coverage of sports events, including implementation of emergency treatment protocols and determination of safe return-to-play
- Formulation and implementation of operative and nonoperative treatment
- Coordination of treatment with other professionals (physical therapist, athletic trainers, other medical specialties)
- Primary surgeon (with faculty monitoring) for more complex arthroscopic procedures, such as ligament (ACL, PCL, MCL) reconstruction, repair or reconstruction of the rotator cuff and other shoulder stabilization procedures
- Primary surgeon (with faculty monitoring) for open procedures such as tibial and femoral osteotomies, osteochondral allograft procedures, autologous chondrocyte implantation, tendon and ligament repair, treatment of knee dislocations

### Implementation

In addition to daily role-modeling and one-on-one instruction, orthopaedic trauma treatment skills are enhanced by a number of specific activities.

- Daily rounds of pre- and postoperative patients, discussion of treatment and follow-up protocols with faculty
- Weekly Clinicopathology Conference for presentation of cases, outcomes studies, and other relevant literature
- Sports Medicine journal club
- Basic Science lecture series on the anatomy, biology, and biomechanics of sports injuries
- Sports medicine conferences, sponsored locally by Campbell Clinic in conjunction with other medical facilities

- On-field and locker-room experience with team physicians

### **Evaluation**

- Residents are globally evaluated by faculty members based on the elements of the core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. Their progression to more responsibility and more participation in surgery is based on observed advances in medical knowledge and practice-based learning. In the out-patient and in-patient postoperative settings, they are evaluated on their professionalism and communication skills in dealing with patients, families, other specialists, medical and paramedical personnel, junior and senior residents, and faculty members. System-based practice is evaluated by the resident's participation in clinical protocols, including coding and record keeping activities.
- Written evaluations are completed by faculty members at the end of each rotation.
- Annual oral examinations are held each year, with one section devoted to care of patients with sports injuries.

### **Reading list**

- Miller: Review of Sports Medicine
- AOSSM: Sports Medicine Curriculum
- AAOS: OKU Sports Medicine, 3<sup>rd</sup> edition
- McGinty: Operative Arthroscopy, 3<sup>rd</sup> edition
- Selected articles from relevant literature (list maintained in library and distributed to residents at start of rotation)

### **Total Joint Rotations (PGY2, PGY4, PGY5)**

The 6-week total joint rotations are directed by fellowship-trained specialists in total joint arthroplasty: Dr. James L. Guyton, Dr. James W. Harkess, Dr. Andrew Crenshaw, and Dr. David G. LaVelle.

### **General goals and objectives**

#### **Patient Care**

- Use specialized diagnostic tests and maneuvers.
- Interpret imaging studies (radiographs, CT, MRI).
- Determine appropriate indications for total joint arthroplasty.
- Formulate appropriate rehabilitation protocols after total joint arthroplasty.
- Perform the following surgical skills or procedures including but not limited to surgical approaches to the joints, joint relieving and limb alignment osteotomies,

hemiarthroplasty, total hip arthroplasty, total knee arthroplasty, and total shoulder arthroplasty.

### **Medical Knowledge**

- Demonstrate familiarity with various types of implants, the advantages and disadvantages of each, and the appropriate patient selection for each.

### **Practice Based Learning and Improvement**

- Evaluate patient care practices, discuss how they meet standards, and develop ways to improve these practices.
- Participate in all mandated conferences.
- Complete a QA/QI project under faculty direction.
- Demonstrate improvement in clinical management.
- Implement new scientific advances and clinical approaches from a variety of sources into current patient care practices.
- Analyze and evaluate medical literature and examine alternate sources for relevant information that pertains to their patient's health problems.
- Take responsibility for lifelong learning.
- Use information technology such as Up-To-Date, PubMed or Ovid to enhance patient care.
- Teach fellow residents, medical students, and interns.
- Use patient care errors and near misses to teach residents and students.

### **Interpersonal and Communication Skills**

- Carefully listen to patients to assess the patient's health problems including verbal and non-verbal communications.
- Communicate and establish a therapeutic relationship with patients.
- Demonstrate effective communication skills with patients, families, and other health care personnel, especially communications addressing end-of-life decisions.
- Present a case accurately and succinctly to attending physicians, fellow residents, and other health care professionals.
- Provide timely, legible, thorough, succinct medical record documentation - histories and physical examinations, admission notes, progress notes, procedure notes and discharge summaries.
- Educate and counsel patients, and families using non-technical and clear language.
- Demonstrate skill in handling all difficult patient care situations.
- Speak clearly when addressing patient issues and management plans with patients, families, and health care colleagues.
- Spend adequate time with patients addressing their questions and concerns.
- Work well within team context relating to students, residents, attending physicians, nurses, and patients

- Communicate effectively when discussing patient conditions and health care practices with fellow residents, attending physicians and other health care providers.
- Represent the orthopaedics staff in interactions with patients and their families, acting with compassion and consideration at all times.

### **Professionalism**

- Professionally interact with patients, attending physicians and allied health care personnel.
- Establish trust with patients and staff.
- Demonstrate respect, compassion, integrity, punctuality, reliability, and honesty with regards to patients and colleagues.
- Show regard for the opinions of others.
- Display initiative and leadership.
- Acknowledge errors, alert patients and appropriate health care providers, and create an action plan to minimize them.
- Demonstrate concern for educational development of students and residents.
- Volunteer for activities for the good of the institution and community.
- Ask for help when needed and seek and accept feedback.
- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Maintain patient confidentiality.
- Demonstrate understanding of the ethical concerns about pharmaceutical and patient gifts.
- Compassionately respond to issues of culture, age, gender, ethnicity, and disability in patient care.
- Interface with referring and consulting physicians and appropriate hospital staff in a professional and respectful manner, recognizing and instituting the core competencies.

### **Systems Based Practice**

- Deliver high-quality medical care and demonstrate ability to practice medicine in a private, government, and inner city hospital settings
- Demonstrate knowledge of types of medical practice and health care delivery systems and understand how this affects patient care.
- Demonstrate knowledge of business aspects of medical practice including coding and insurance.
- Work with ancillary team members (discharge planners, case managers, and social workers) to provide high quality cost-effective care.
- Practice effective allocation of health care resources to avoid compromising quality of care.
- Interact with patients, attending physicians and allied health care personnel as part of a health care team.
- Serve as a patient advocate in the outpatient and inpatient setting.

- Direct care in inpatient and outpatient settings as a member of a multidisciplinary team.
- Demonstrate knowledge of how the health care system including other physicians, nurses, and health care professionals affect their patient care practices.

### **Specific goals and objectives**

#### PGY2

The 6-week rotation during the PGY2 year serves as the introduction to the indications for and techniques of total joint arthroplasty, primarily of the hip, knee, and shoulder. Residents accompany faculty members during initial patient evaluation, operative procedure, and postoperative follow-up and rehabilitation.

#### Specific skills to be developed:

- Specific history-taking and physical examination items for evaluation of patients with degenerative joint disease
- Knowledge of the effect of comorbidities on treatment decisions
- Understanding of the pharmacology of medications prescribed
- Appropriate use of diagnostic tests and maneuvers
- Appropriate use and interpretation of imaging techniques (radiographs, CT, MRI)
- Determination of indications and contraindications to total joint arthroplasty
- Knowledge of basic approaches to the hip, knee, and shoulder for total joint replacement
- Serve as first or second assistant for total joint arthroplasty procedures
- Serve as primary surgeon (with faculty monitoring) or first assistant for hemiarthroplasty procedures and osteotomies

#### PGY4

During this 6-week rotation the resident assumes more responsibility for treatment planning and for instruction of junior residents. More knowledge is gained in operative techniques and postoperative care.

#### Specific skills to be developed:

- Refinement of diagnostic skills in clinical setting, including use of more sophisticated MRI techniques and other imaging modalities
- Formulation and implementation of treatment plans
- Postoperative care of total joint arthroplasty patients
- Formulation and monitoring of postoperative rehabilitation protocols
- Serve as primary surgeon (with faculty monitoring) for uncomplicated total joint arthroplasty procedures, hemiarthroplasties, and joint-relieving osteotomies
- Serve as first assistant for more complex procedures, such as revision arthroplasty and minimally-invasive arthroplasty techniques

#### PGY5

During the third 6-week rotation in total joint arthroplasty, the resident becomes a senior member of the team and assumes increased responsibility for patient care and for supervision and instruction of junior residents. More surgical experience is gained in advanced arthroplasty techniques, including revision techniques and minimally-invasive techniques.

Specific skills to be developed:

- Refinement of diagnostic skills in clinical setting, including use of more sophisticated MRI techniques and other imaging modalities
- Formulation and implementation of treatment plans
- Postoperative care of total joint arthroplasty patients
- Formulation and monitoring of postoperative rehabilitation protocols
- Serve as primary surgeon (with faculty monitoring) for uncomplicated total joint arthroplasty procedures, hemiarthroplasties, and joint-relieving osteotomies
- Serve as primary surgeon (with faculty monitoring) for more complex procedures, such as revision arthroplasties and minimally-invasive arthroplasties

### **Implementation**

In addition to daily role-modeling and one-on-one instruction, skills in total joint arthroplasty skills are enhanced by a number of specific activities.

- Daily rounds of pre- and postoperative patients, discussion of treatment and follow-up protocols with faculty
- Weekly Clinicopathology Conference for presentation of cases, outcomes studies, and other relevant literature
- Total Joint Arthroplasty journal club
- Basic Science lecture series on the anatomy, biology, and biomechanics of total joint arthroplasty
- Core Curriculum Conference series of presentations on indications, contraindications, implants, and techniques for total joint arthroplasty

### **Evaluation**

- Residents are globally evaluated by faculty members based on the elements of the core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. Their progression to more responsibility and more participation in surgery is based on observed advances in medical knowledge and practice-based learning. In the out-patient and in-patient postoperative settings, they are evaluated on their professionalism and communication skills in dealing with patients, families, other specialists, medical and paramedical personnel, junior and senior residents, and faculty members. System-based practice is evaluated by the resident's participation in clinical protocols, including coding and record keeping activities.
- Written evaluations are completed by faculty members at the end of each rotation.

- Annual oral examinations are held each year, with one section devoted to care of patients with total joint arthroplasties.

**Reading list**

- Canale: Campbell's Operative Orthopaedics, 10<sup>th</sup> edition
- Morrey: Joint Replacement Arthroplasty, 3<sup>rd</sup> edition
- Callaghan, Rosenberg, Rubash: The Adult Hip
- Selected articles from relevant literature (list maintained in library and distributed to residents at start of rotation)

**General Orthopaedics (PGY1, PGY2, PGY4)**

The 6-week rotations in general orthopaedics are directed by faculty members with special interest and expertise in diagnosis and treatment of a variety of common orthopaedic conditions and injuries. These patient encounters often serve as the first line of treatment, allowing referral to an orthopaedic specialist if appropriate, and will constitute a large part of the resident's private practice. These rotations will prepare the resident to assume the medical and administrative obligations involved in the care of patients with common musculoskeletal complaints. Patients are seen primarily at the Campbell Clinic private-practice clinics and surgery is done primarily at the Baptist Hospitals, Methodist Hospitals, and Campbell Clinic out-patient surgery center.

**Overall goals and objectives****Clinical skills to be developed**

- History taking
- Physical examination
- Basic imaging techniques for diagnosis (radiographic views, CT, MTI)
- Formulation of nonoperative and operative treatment plans
- Formulation of physical therapy protocol for nonoperative treatment and protocols for postoperative rehabilitation

**Surgical skills to be developed**

- Joint injection techniques
- Surgical approaches
- Techniques of arthrodesis
- Tendon transfer techniques
- Amputation procedures

**Specific goals and objectives**

PGY 1 and PGY2

This 6-week rotation introduces the resident to the basic elements of patient evaluation and examination for a variety of common orthopaedic conditions. Emphasis is on diagnosis and consideration of treatment options, operative and nonoperative, and follow-up and rehabilitation protocols. Patient population includes those of a wide variety of age ranges, functional levels, and joint involvement.

Specific skills to be developed:

- History taking and physical examination of the orthopaedic patient with a non-specific condition or injury
- Appropriate use and interpretation of imaging studies, including radiography, CT, MRI
- Understanding of the pharmacology of prescribed medications and interactions with other medications
- Recognition of the impact of medical comorbidities on treatment decisions
- Determination of the indications for and use of casting, bracing, orthoses
- Joint injection techniques
- Serves as first assistant for operative procedures such as arthrodesis, tendon transfers, amputation, intramedullary nailing of long bone fractures, closed reduction and percutaneous pinning of fractures, open reduction and internal fixation of fractures, and arthroscopic reconstructive procedures (adults)

PGY4

The second 6-week rotation in general orthopaedics gives the resident more opportunity for treatment planning and implementation and for increased postoperative in-patient responsibilities. He or she also has increased responsibility for supervision and instruction of junior residents and is allowed more participation in operative procedures.

Specific skills to be developed:

- Refinement of diagnostic skills with use of specialized testing maneuvers and modalities
- Recognition and classification of joint destroying processes, such as arthritis, CMT, Gaucher, hemophilia, etc.
- Formulation and implementation of treatment plans, including postoperative rehabilitation
- Determination of the necessity of consultation with other specialties
- Serve as primary surgeon (with faculty monitoring) for more complex procedures such as arthrodesis, osteotomies, amputations, tendon transfers, intramedullary nailing of long bone fractures, closed reduction and percutaneous pinning of fractures, open reduction and internal fixation of fractures, and arthroscopic reconstructive procedures (adults)



**Implementation**

In addition to daily role-modeling and one-on-one instruction, skills in total joint arthroplasty skills are enhanced by a number of specific activities.

- Daily rounds of pre- and postoperative patients, discussion of treatment and follow-up protocols with faculty
- Weekly Clinicopathology Conference for presentation of cases, outcomes studies, and other relevant literature
- Journal of Bone & Joint journal club
- Basic Science lecture series on the anatomy, biology, and biomechanics of orthopaedic disease
- Core Curriculum Conference series of presentations on common orthopaedic diseases and conditions

**Evaluation**

- Residents are globally evaluated by faculty members based on the elements of the core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. Their progression to more responsibility and more participation in surgery is based on observed advances in medical knowledge and practice-based learning. In the out-patient and in-patient postoperative settings, they are evaluated on their professionalism and communication skills in dealing with patients, families, other specialists, medical and paramedical personnel, junior and senior residents, and faculty members. System-based practice is evaluated by the resident's participation in clinical protocols, including coding and record keeping activities.
- Written evaluations are completed by faculty members at the end of each rotation.
- Annual oral examinations are held each year, with one section devoted to general orthopaedics

**Reading list**

- Hoppenfeld & DeBoer: Exposures in Orthopaedics: The Anatomic Approach, 4<sup>th</sup> edition
- Resnick: Diagnosis of Bone and Joint Disorders, 4<sup>th</sup> edition.
- Canale: Campbell's Operative Orthopaedics, 10<sup>th</sup> edition
- Current relevant articles (list maintained in library and distributed to residents at start of rotation)

**Adult Reconstructive Surgery (PGY4, PGY5)**

These 6-week rotations are based primarily at the MED and the VA hospitals and are directed by Dr. Greg Dabov and Dr. Paige Whittle. These rotations focus on correction of deformities in a largely indigent population and provide a large and varied operative

experience. Residents at the VAH also gain experience in rehabilitation of amputees and those with spinal cord injuries.

### **Overall goals and objectives**

#### **Patient Care**

- Use specialized diagnostic tests and maneuvers.
- Interpret imaging studies (radiographs, CT, MRI).
- Determine appropriate treatment of degenerative and posttraumatic joint conditions (nonoperative versus operative).
- Formulate appropriate rehabilitation protocols, including those for amputees and spinal-cord-injured patients.
- Perform the following surgical skills or procedures including but not limited to surgical approaches to the joints, irrigation and débridement, bone grafting for infection, limb alignment osteotomies, limb lengthening/shortening osteotomies, amputation and revision of amputations, revision arthroplasty techniques for instability or infection, and spine stabilization procedures.

#### **Medical Knowledge**

- Demonstrate an understanding of the biology of disease processes such as neoplasms and infections and their effects on the musculoskeletal system.
- Demonstrate a familiarity with the medical treatment of orthopaedic disease processes.
- Demonstrate an understanding of the capabilities and limitations of orthopaedic reconstructive procedures.

#### **Practice Based Learning and Improvement**

- Evaluate patient care practices, discuss how they meet standards, and develop ways to improve these practices.
- Participate in all mandated conferences.
- Complete a QA/QI project under faculty direction.
- Demonstrate improvement in clinical management.
- Implement new scientific advances and clinical approaches from a variety of sources into current patient care practices.
- Analyze and evaluate medical literature and examine alternate sources for relevant information that pertains to their patient's health problems.
- Take responsibility for lifelong learning.
- Use information technology such as Up-To-Date, PubMed or Ovid to enhance patient care.
- Teach fellow residents, medical students, and interns.
- Use patient care errors and near misses to teach residents and students.

#### **Interpersonal and Communication Skills**

- Carefully listen to patients to assess the patient's health problems including verbal and non-verbal communications.
- Communicate and establish a therapeutic relationship with patients.

- Demonstrate effective communication skills with patients, families, and other health care personnel, especially communications addressing end-of-life decisions.
- Present a case accurately and succinctly to attending physicians, fellow residents, and other health care professionals.
- Provide timely, legible, thorough, succinct medical record documentation - histories and physical examinations, admission notes, progress notes, procedure notes and discharge summaries.
- Educate and counsel patients, and families using non-technical and clear language.
- Demonstrate skill in handling all difficult patient care situations.
- Speak clearly when addressing patient issues and management plans with patients, families, and health care colleagues.
- Spend adequate time with patients addressing their questions and concerns.
- Work well within team context relating to students, residents, attending physicians, nurses, and patients
- Communicate effectively when discussing patient conditions and health care practices with fellow residents, attending physicians and other health care providers.
- Represent the orthopaedics staff in interactions with patients and their families, acting with compassion and consideration at all times.

### **Professionalism**

- Professionally interact with patients, attending physicians and allied health care personnel.
- Establish trust with patients and staff.
- Demonstrate respect, compassion, integrity, punctuality, reliability, and honesty with regards to patients and colleagues.
- Show regard for the opinions of others.
- Display initiative and leadership.
- Acknowledge errors, alert patients and appropriate health care providers, and create an action plan to minimize them.
- Demonstrate concern for educational development of students and residents.
- Volunteer for activities for the good of the institution and community.
- Ask for help when needed and seek and accept feedback.
- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Maintain patient confidentiality.
- Demonstrate understanding of the ethical concerns about pharmaceutical and patient gifts.
- Compassionately respond to issues of culture, age, gender, ethnicity, and disability in patient care.
- Interface with referring and consulting physicians and appropriate hospital staff in a professional and respectful manner, recognizing and instituting the core competencies.

### **Systems Based Practice**

- Deliver high-quality medical care and demonstrate ability to practice medicine in a private, government, and inner city hospital settings
- Demonstrate knowledge of types of medical practice and health care delivery systems and understand how this affects patient care.
- Demonstrate knowledge of business aspects of medical practice including coding and insurance.
- Work with ancillary team members (discharge planners, case managers, and social workers) to provide high quality cost-effective care.
- Practice effective allocation of health care resources to avoid compromising quality of care.
- Interact with patients, attending physicians and allied health care personnel as part of a health care team.
- Serve as a patient advocate in the outpatient and inpatient setting.
- Direct care in inpatient and outpatient settings as a member of a multidisciplinary team.
- Demonstrate knowledge of how the health care system including other physicians, nurses, and health care professionals affect their patient care practices.

### **Specific goals and objectives**

#### PGY4

- Clinical evaluation and examination of patients with degenerative and posttraumatic musculoskeletal deformities
- Appropriate use of diagnostic maneuvers and imaging techniques
- Determination of the indications for and timing of reconstructive procedures
- Serve as primary surgeon (with faculty monitoring) for operative procedures including limb alignment, shortening, and lengthening osteotomies; primary and revision amputations; bone grafting

#### PGY5

- Refine clinical evaluation and examination skills
- Appropriate use and interpretation of advanced imaging techniques
- Determination of the indications for and timing of reconstructive procedures
- Serve as primary surgeon (with faculty monitoring) for operative procedures including limb alignment, shortening, and lengthening osteotomies; primary and revision amputations; bone grafting; revision arthroplasties; and spine stabilization procedures

### **Implementation**

In addition to daily role-modeling and one-on-one instruction, skills in total joint arthroplasty skills are enhanced by a number of specific activities.

- Daily rounds of pre- and postoperative patients, discussion of treatment and follow-up protocols with faculty
- Daily morning conference with faculty for presentation and discussion of cases to determine appropriate management plans and to discuss treatment and prevention of complications
- Weekly Clinicopathology Conference for presentation of cases, outcomes studies, and other relevant literature
- Journal of Bone & Joint journal club
- Basic Science lecture series on the anatomy, biology, and biomechanics of orthopaedic disease
- Core Curriculum Conference series of presentations on common orthopaedic diseases and conditions

### **Evaluation**

- Residents are globally evaluated by faculty members based on the elements of the core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. Their progression to more responsibility and more participation in surgery is based on observed advances in medical knowledge and practice-based learning. In the out-patient and in-patient postoperative settings, they are evaluated on their professionalism and communication skills in dealing with patients, families, other specialists, medical and paramedical personnel, junior and senior residents, and faculty members. System-based practice is evaluated by the resident's participation in clinical protocols, including coding and record keeping activities.
- Written evaluations are completed by faculty members at the end of each rotation.
- Annual oral examinations are held each year, with one section devoted to adult reconstructive surgery

### **Reading list**

- Hoppenfeld & DeBoer: Exposures in Orthopaedics: The Anatomic Approach, 4<sup>th</sup> edition
- Resnick: Diagnosis of Bone and Joint Disorders, 4<sup>th</sup> edition.
- Canale: Campbell's Operative Orthopaedics, 10<sup>th</sup> edition
- Current relevant articles (list maintained in library and distributed to residents at start of rotation)

### **Pediatric Orthopaedics (PGY3, PGY5)**

The two three-month rotations in Pediatric Orthopaedics are directed by fellowship-trained pediatric orthopaedic specialists (Dr. Terry Canale, Dr. James Beaty, Dr. William Warner, and Dr. Jeffery Sawyer) and provide ample exposure to pediatric disorders and

pediatric trauma with instruction in outpatient clinics, private office, and surgery at LeBonheur Children's Medical Center. In addition to regular outpatient clinics, specialty clinics are held for patients with congenital, neuromuscular, and developmental disorders, giving residents a broad knowledge base in pediatric orthopaedics.

### **Overall goals and objectives**

#### **Patient Care**

- Counsel and educate pediatric patients and their families about conditions and management plans.
- Use specialized tests and maneuvers for diagnosis in pediatric patients.
- Interpret imaging studies (ultrasound, CT, MRI) for diagnosis and differentiation of normal growth variations from pathologic conditions
- Triage of pediatric trauma patients, including necessity for consultation with other specialties
- Perform the following surgical skills or procedures including but not limited to closed and open fracture fixation in pediatric patients, pinning of slipped capital femoral epiphysis, correction of foot deformities (i.e., clubfoot, flatfoot, coalitions, etc.), osteotomies for limb alignment or length equalization, limb shortening and lengthening procedures, and anterior and posterior spinal instrumentation for spinal deformities (i.e., scoliosis, kyphosis, spondylolisthesis).

#### **Medical Knowledge**

#### **Practice Based Learning and Improvement**

- Evaluate patient care practices, discuss how they meet standards, and develop ways to improve these practices.
- Participate in all mandated conferences.
- Complete a QA/QI project under faculty direction.
- Demonstrate improvement in clinical management.
- Implement new scientific advances and clinical approaches from a variety of sources into current patient care practices.
- Analyze and evaluate medical literature and examine alternate sources for relevant information that pertains to their patient's health problems.
- Take responsibility for lifelong learning.
- Use information technology such as Up-To-Date, PubMed or Ovid to enhance patient care.
- Teach fellow residents, medical students, and interns.
- Use patient care errors and miscalculations to teach residents and students.

#### **Interpersonal and Communication Skills**

- Carefully listen to patients to assess the patient's health problems including verbal and non-verbal communications.
- Communicate and establish a therapeutic relationship with patients.

- Demonstrate effective communication skills with patients, families, and other health care personnel, especially communications addressing end-of-life decisions.
- Present a case accurately and succinctly to attending physicians, fellow residents, and other health care professionals.
- Provide timely, legible, thorough, succinct medical record documentation - histories and physical examinations, admission notes, progress notes, procedure notes and discharge summaries.
- Educate and counsel patients, and families using non-technical and clear language.
- Demonstrate skill in handling all difficult patient care situations.
- Speak clearly when addressing patient issues and management plans with patients, families, and health care colleagues.
- Spend adequate time with patients addressing their questions and concerns.
- Work well within team context relating to students, residents, attending physicians, nurses, and patients
- Communicate effectively when discussing patient conditions and health care practices with fellow residents, attending physicians and other health care providers.
- Represent the orthopaedics staff in interactions with patients and their families, acting with compassion and consideration at all times.

### **Professionalism**

- Professionally interact with patients, attending physicians and allied health care personnel.
- Establish trust with patients and staff.
- Demonstrate respect, compassion, integrity, punctuality, reliability, and honesty with regards to patients and colleagues.
- Show regard for the opinions of others.
- Display initiative and leadership.
- Acknowledge errors, alert patients and appropriate health care providers, and create an action plan to minimize them.
- Demonstrate concern for educational development of students and residents.
- Volunteer for activities for the good of the institution and community.
- Ask for help when needed and seek and accept feedback.
- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Maintain patient confidentiality.
- Demonstrate understanding of the ethical concerns about pharmaceutical and patient gifts.
- Compassionately respond to issues of culture, age, gender, ethnicity, and disability in patient care.
- Interface with referring and consulting physicians and appropriate hospital staff in a professional and respectful manner, recognizing and instituting the core competencies.

**Systems Based Practice**

- Deliver high-quality medical care and demonstrate ability to practice medicine in a private, government, and inner city hospital settings
- Demonstrate knowledge of types of medical practice and health care delivery systems and understand how this affects patient care.
- Demonstrate knowledge of business aspects of medical practice including coding and insurance.
- Work with ancillary team members (discharge planners, case managers, and social workers) to provide high quality cost-effective care.
- Practice effective allocation of health care resources to avoid compromising quality of care.
- Interact with patients, attending physicians and allied health care personnel as part of a health care team.
- Serve as a patient advocate in the outpatient and inpatient setting.
- Direct care in inpatient and outpatient settings as a member of a multidisciplinary team.
- Demonstrate knowledge of how the health care system including other physicians, nurses, and health care professionals affect their patient care practices.

**Specific goals and objectives**

## PGY3

Residents at the PGY3 level accompany faculty members to specialty clinics and participate in patient evaluations and examinations, as well as assist in surgical procedures. They also are responsible for daily rounds of postoperative patients and communication of information to faculty and senior residents.

Specific skills to be developed include:

- Communication with pediatric patients and their parents
- Examination techniques specifically focused on pediatric musculoskeletal conditions, including those of congenital, developmental, and traumatic etiologies
- Development of appropriate treatment plans, including indications for and timing of operative procedures
- Appropriate use of nonoperative modalities such as bracing, casting, and traction
- Use of appropriate imaging modalities, including radiography, Ultrasound, MRI, bone scan, and differentiation of normal anatomic variants from pathologic conditions
- Closed reduction and casting of simple fractures
- Joint aspiration
- Manipulation and casting for clubfoot deformities
- Serve as primary surgeon (with faculty monitoring) for operative procedures such as closed reduction and percutaneous pinning of fractures, percutaneous pinning of SCFE, open reduction and internal fixation of fractures, and the treatment of septic arthritis and osteomyelitis

- Serve as first assistant for more complex procedures such as clubfoot correction, tarsal coalition resection, hip and acetabular osteotomies, spinal correction (with and without instrumentation), reconstruction of congenital deformities

## PGY5

Senior residents in this rotation assume more of the responsibility for diagnosis and treatment planning, as well as for supervision and instruction of junior residents. They evaluate patients in the pediatric emergency department and in the out-patient clinics, including specialty clinics, and with faculty consultation, determine appropriate operative or nonoperative treatment. They also follow patients in the hospital and in the out-patient clinics to experience continuity of care from initial evaluation through treatment to discharge from care.

Specific skills to be developed include:

- Interpretation of imaging modalities including ultrasound, CT, MRI, bone scans for differentiation of normal variants from pathologic conditions
- Use of appropriate local, regional, and general anesthesia for pediatric patients
- Recognition of metabolic, neurologic, and medical problems that impact the treatment of pediatric orthopaedic patients
- Appropriate emergency techniques for treatment of pediatric trauma, including spinal injuries; determination of appropriate evaluation techniques, necessity for consultation with other specialties, and timing of emergency surgery
- Serve as primary surgeon (with faculty monitoring) for more complex procedures such as hip and acetabular osteotomies, spinal correction (with and without instrumentation), reconstruction of congenital deformities

## Implementation

- Daily hospital rounds with staff for evaluation and discussion of individual patients
- Weekly pediatric clinics, including specialty clinics (clubfoot, scoliosis, myelomeningocele, cerebral palsy, sickle cell)
- Pediatric journal club
- Weekly core curriculum conferences

## Evaluation

- Residents are globally evaluated by faculty members based on the elements of the core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. Their progression to more responsibility and more participation in patient care including surgery is based on observed advances in medical knowledge and practice-based learning. In the out-patient and in-patient postoperative settings, they are evaluated on their professionalism and communication skills in dealing with patients, families, other specialists, medical

and paramedical personnel, junior and senior residents, and faculty members. System-based practice is evaluated by the resident's participation in clinical protocols, including coding and record keeping activities.

- Written evaluations are completed by faculty members at the end of each rotation.
- Annual oral examinations are held each year, with one section devoted to pediatric orthopaedics

### **Reading list**

- Beaty & Kasser: Rockwood and Wilkins Fractures in Children, 5<sup>th</sup> edition
- Morrissy: Lovell & Winter's Pediatric Orthopaedics
- Green & Swiontkowski: Skeletal Trauma in Children, 3<sup>rd</sup> edition
- Canale: Campbell's Operative Orthopaedics, 10<sup>th</sup> edition
- Current relevant articles (list maintained in library and distributed to residents at start of rotation)

### **Foot and ankle surgery (PGY3)**

This 6-week rotation is under the direction of four fellowship-trained foot and ankle specialists: Dr. Greer Richardson, Dr. Drew Murphy, Dr. Susan Ishikawa, and Dr. David Richardson. The resident assists in the outpatient care of patients in the private practice Campbell Clinic facilities and serves as first assistant or primary surgeon (with faculty monitoring).

### **Overall goals and objectives**

#### **Patient Care**

- Appropriately use laboratory testing for underlying disease states that affect the foot and ankle.
- Use specialized diagnostic tests and maneuvers for foot and ankle disorders, especially those associated with diabetes mellitus and rheumatoid arthritis.
- Interpret imaging studies (radiographs, CT, MRI) of foot and ankle disorders.
- Determine appropriate operative or nonoperative treatment plan for each patient depending on pathology, age, activity level, medical comorbidities.
- Formulate physical therapy protocol for nonoperative treatment and postoperative rehabilitation protocols after foot or ankle surgery, including splinting and bracing.
- Perform the following surgical skills or procedures including but not limited to local block anesthesia for foot and ankle surgery, metatarsal and phalangeal osteotomies for correction of foot deformities (i.e., hallux valgus, adult flatfoot, etc), arthrodesis of joints of the foot and ankle for posttraumatic and degenerative conditions, closed and open reduction of fractures of the foot and ankle, internal and external fixation of fracture of the foot and ankle, and tendon transfer, repair, and reconstruction.

#### **Medical Knowledge**

- Demonstrate an understanding of the anatomy and biomechanics of the foot and ankle and their effect on treatment.
- Recognize common foot and ankle disorders and ability to describe using standard nomenclature (e.g. frontal, sagittal, transverse plane deformities; cavus, varus, planus).
- Demonstrate a familiarity with nonoperative treatment of common foot and ankle disorders, including the use of orthoses, bracing, and casting.

### **Practice Based Learning and Improvement**

- Evaluate patient care practices, discuss how they meet standards, and develop ways to improve these practices.
- Participate in all mandated conferences.
- Complete a QA/QI project under faculty direction.
- Demonstrate improvement in clinical management.
- Implement new scientific advances and clinical approaches from a variety of sources into current patient care practices.
- Analyze and evaluate medical literature and examine alternate sources for relevant information that pertains to their patient's health problems.
- Take responsibility for lifelong learning.
- Use information technology such as Up-To-Date, PubMed or Ovid to enhance patient care.
- Teach fellow residents, medical students, and interns.
- Use patient care errors and near misses to teach residents and students.

### **Interpersonal and Communication Skills**

- Carefully listen to patients to assess the patient's health problems including verbal and non-verbal communications.
- Communicate and establish a therapeutic relationship with patients.
- Demonstrate effective communication skills with patients, families, and other health care personnel, especially communications addressing end-of-life decisions.
- Present a case accurately and succinctly to attending physicians, fellow residents, and other health care professionals.
- Provide timely, legible, thorough, succinct medical record documentation - histories and physical examinations, admission notes, progress notes, procedure notes and discharge summaries.
- Educate and counsel patients, and families using non-technical and clear language.
- Demonstrate skill in handling all difficult patient care situations.
- Speak clearly when addressing patient issues and management plans with patients, families, and health care colleagues.
- Spend adequate time with patients addressing their questions and concerns.
- Work well within team context relating to students, residents, attending physicians, nurses, and patients

- Communicate effectively when discussing patient conditions and health care practices with fellow residents, attending physicians and other health care providers.
- Represent the orthopaedics staff in interactions with patients and their families, acting with compassion and consideration at all times.

### **Professionalism**

- Professionally interact with patients, attending physicians and allied health care personnel.
- Establish trust with patients and staff.
- Demonstrate respect, compassion, integrity, punctuality, reliability, and honesty with regards to patients and colleagues.
- Show regard for the opinions of others.
- Display initiative and leadership.
- Acknowledge errors, alert patients and appropriate health care providers, and create an action plan to minimize them.
- Demonstrate concern for educational development of students and residents.
- Volunteer for activities for the good of the institution and community.
- Ask for help when needed and seek and accept feedback.
- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Maintain patient confidentiality.
- Demonstrate understanding of the ethical concerns about pharmaceutical and patient gifts.
- Compassionately respond to issues of culture, age, gender, ethnicity, and disability in patient care.
- Interface with referring and consulting physicians and appropriate hospital staff in a professional and respectful manner, recognizing and instituting the core competencies.

### **Systems Based Practice**

- Deliver high-quality medical care and demonstrate ability to practice medicine in a private, government, and inner city hospital settings
- Demonstrate knowledge of types of medical practice and health care delivery systems and understand how this affects patient care.
- Demonstrate knowledge of business aspects of medical practice including coding and insurance.
- Work with ancillary team members (discharge planners, case managers, and social workers) to provide high quality cost-effective care.
- Practice effective allocation of health care resources to avoid compromising quality of care.
- Interact with patients, attending physicians and allied health care personnel as part of a health care team.
- Serve as a patient advocate in the outpatient and inpatient setting.

- Direct care in inpatient and outpatient settings as a member of a multidisciplinary team.
- Demonstrate knowledge of how the health care system including other physicians, nurses, and health care professionals affect their patient care practices.

### **Reading list**

- Alexander: The Foot: Examination and Diagnosis
- AAOS OKU Foot and Ankle, edition 3
- AOFAS/AAOS Advanced Reconstruction of the Foot and Ankle
- Canale: Campbell's Operative Orthopaedics, 10<sup>th</sup> edition
- Current relevant articles (list maintained in library and distributed to residents at start of rotation)

### **Implementation**

- Daily foot and ankle clinics with faculty
- Daily hospital rounds with faculty
- First assistant or primary surgeon (with faculty monitoring) at private hospitals, VAH, the MED, and free-standing surgery centers
- Bi-monthly specialty foot and ankle conferences
- Weekly foot and ankle journal club, along with case presentations and discussion
- Core curriculum conference

### **Evaluation**

- Residents are globally evaluated by faculty members based on the elements of the core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. Their progression to more responsibility and more participation in surgery is based on observed advances in medical knowledge and practice-based learning. In the out-patient and in-patient postoperative settings, they are evaluated on their professionalism and communication skills in dealing with patients, families, other specialists, medical and paramedical personnel, junior and senior residents, and faculty members. System-based practice is evaluated by the resident's participation in clinical protocols, including coding and record keeping activities.
- Written evaluations are completed by faculty members at the end of each rotation.
- Annual oral examinations are held each year, with one section devoted to foot and ankle surgery

### **Hand surgery (PGY3)**

This 6-week rotation is directed by fellowship-trained hand specialists: Dr. David Cannon, Dr. James Calandruccio, and Dr. Mark Jobe. The resident assists in the outpatient care of patients in the private practice Campbell Clinic facilities and serves as

first assistant or primary surgeon (with faculty monitoring). The resident gains experience in the diagnosis and treatment of a variety of congenital, developmental, and traumatic hand conditions while assisting in specialty hand clinics at the VAH, the MED, and Le Bonheur Children's Medical Center. Operative experience is gained by serving as first assistant or primary surgeon (with faculty monitoring) for a wide range of operative procedures for conditions affecting the upper extremity.

### **General goals and objectives**

#### **Patient Care**

- Use specialized diagnostic tests and maneuvers for hand and wrist disorders, including diagnosis of peripheral nerve disorders.
- Interpret imaging studies (radiographs, CT, MRI) of hand and wrist disorders.
- Determine appropriate operative or nonoperative treatment plan.
- Formulate physical therapy protocol for nonoperative treatment and postoperative rehabilitation protocols after hand or wrist surgery, including splinting and injection techniques (i.e., DeQuervain's, carpal tunnel, tendonitis, tenosynovitis)
- Perform the following surgical skills or procedures including but not limited to local block anesthesia for hand and wrist surgery, basic skin incisions and skin closure techniques (i.e., Z-plasty), closed and open fixation of hand and wrist fractures, tendon, ligament, and nerve repair and reconstruction, tendon transfers, use of flaps and grafts for wound coverage, arthrodesis and arthroplasty of phalangeal and carpal joints, and reimplantation of digits

#### **Medical Knowledge**

##### **Practice Based Learning and Improvement**

- Evaluate patient care practices, discuss how they meet standards, and develop ways to improve these practices.
- Participate in all mandated conferences.
- Complete a QA/QI project under faculty direction.
- Demonstrate improvement in clinical management.
- Implement new scientific advances and clinical approaches from a variety of sources into current patient care practices.
- Analyze and evaluate medical literature and examine alternate sources for relevant information that pertains to their patient's health problems.
- Take responsibility for lifelong learning.
- Use information technology such as Up-To-Date, PubMed or Ovid to enhance patient care.
- Teach fellow residents, medical students, and interns.
- Use patient care errors and near misses to teach residents and students.

##### **Interpersonal and Communication Skills**

- Carefully listen to patients to assess the patient's health problems including verbal and non-verbal communications.
- Communicate and establish a therapeutic relationship with patients.

- Demonstrate effective communication skills with patients, families, and other health care personnel, especially communications addressing end-of-life decisions.
- Present a case accurately and succinctly to attending physicians, fellow residents, and other health care professionals.
- Provide timely, legible, thorough, succinct medical record documentation - histories and physical examinations, admission notes, progress notes, procedure notes and discharge summaries.
- Educate and counsel patients, and families using non-technical and clear language.
- Demonstrate skill in handling all difficult patient care situations.
- Speak clearly when addressing patient issues and management plans with patients, families, and health care colleagues.
- Spend adequate time with patients addressing their questions and concerns.
- Work well within team context relating to students, residents, attending physicians, nurses, and patients
- Communicate effectively when discussing patient conditions and health care practices with fellow residents, attending physicians and other health care providers.
- Represent the orthopaedics staff in interactions with patients and their families, acting with compassion and consideration at all times.

### **Professionalism**

- Professionally interact with patients, attending physicians and allied health care personnel.
- Establish trust with patients and staff.
- Demonstrate respect, compassion, integrity, punctuality, reliability, and honesty with regards to patients and colleagues.
- Show regard for the opinions of others.
- Display initiative and leadership.
- Acknowledge errors, alert patients and appropriate health care providers, and create an action plan to minimize them.
- Demonstrate concern for educational development of students and residents.
- Volunteer for activities for the good of the institution and community.
- Ask for help when needed and seek and accept feedback.
- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Maintain patient confidentiality.
- Demonstrate understanding of the ethical concerns about pharmaceutical and patient gifts.
- Compassionately respond to issues of culture, age, gender, ethnicity, and disability in patient care.
- Interface with referring and consulting physicians and appropriate hospital staff in a professional and respectful manner, recognizing and instituting the core competencies.

### **Systems Based Practice**

- Deliver high-quality medical care and demonstrate ability to practice medicine in a private, government, and inner city hospital settings
- Demonstrate knowledge of types of medical practice and health care delivery systems and understand how this affects patient care.
- Demonstrate knowledge of business aspects of medical practice including coding and insurance.
- Work with ancillary team members (discharge planners, case managers, and social workers) to provide high quality cost-effective care.
- Practice effective allocation of health care resources to avoid compromising quality of care.
- Interact with patients, attending physicians and allied health care personnel as part of a health care team.
- Serve as a patient advocate in the outpatient and inpatient setting.
- Direct care in inpatient and outpatient settings as a member of a multidisciplinary team.
- Demonstrate knowledge of how the health care system including other physicians, nurses, and health care professionals affect their patient care practices.

### **Implementation**

- Daily hospital rounds with faculty
- Daily hand clinics, including specialty clinics (congenital deformity, arthritic hand, etc)
- Bi-monthly hand conference
- Hand journal club
- Specialized hands-on training in microsurgical techniques

### **Reading list**

- ASSH: The Hand: Examination and Diagnosis
- Green: Operative Hand Surgery
- Canale: Campbell's Operative Orthopaedics, 10<sup>th</sup> edition
- Current relevant articles (list maintained in library and distributed to residents at start of rotation)

### **Evaluation**

- Residents are globally evaluated by faculty members based on the elements of the core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. Their progression to more responsibility and more participation in surgery is based on observed advances in medical knowledge and practice-based learning. In the out-patient and in-patient postoperative settings, they are evaluated on their professionalism and communication skills in dealing with patients, families, other specialists, medical and paramedical personnel, junior and senior residents, and faculty members. System-based practice is

- evaluated by the resident's participation in clinical protocols, including coding and record keeping activities.
- Written evaluations are completed by faculty members at the end of each rotation.
  - Annual oral examinations are held each year, with one section devoted to upper extremity surgery

## **Spine surgery (PGY4)**

This 6-week rotation is directed by fellowship-trained spine specialists Dr. Keith Williams, Dr. Francis Camillo, Dr. Patrick Curlee, Dr. Ray Gardocki, and Dr. George Wood II. The resident gains experience in the diagnosis and treatment of traumatic and nontraumatic conditions of the cervical, thoracic, and lumbar spine through participation in private practice clinics, emergency clinics, and specialty clinics. The presence of a Level 1 trauma center assures adequate exposure to all levels of spinal trauma, and a wide variety of degenerative spinal conditions are treated at the VAH.

### **General goals and objectives**

#### **Patient Care**

- Use specialized diagnostic tests and maneuvers for spinal disorders.
- Interpret imaging studies (radiographs, CT, MRI) of the spine.
- Determine appropriate operative or nonoperative treatment plan.
- Formulate physical therapy protocol for nonoperative treatment and postoperative rehabilitation protocols after spinal surgery.
- Perform the following surgical skills or procedures including but not limited to injection techniques; anterior and posterior approaches to the spine; fusion techniques for the cervical, thoracic, and lumbar spine; use of spinal instrumentation, including screws, rods, cables, etc.; reduction and fixation of spinal fractures; lumbar discectomy; and spinal decompression, laminectomy, and foraminotomy.

#### **Medical Knowledge**

- Differentiate between traumatic, congenital, and degenerative conditions of the spine.

#### **Practice Based Learning and Improvement**

- Evaluate patient care practices, discuss how they meet standards, and develop ways to improve these practices.
- Participate in all mandated conferences.
- Complete a QA/QI project under faculty direction.
- Demonstrate improvement in clinical management.
- Implement new scientific advances and clinical approaches from a variety of sources into current patient care practices.
- Analyze and evaluate medical literature and examine alternate sources for relevant information that pertains to their patient's health problems.

- Take responsibility for lifelong learning.
- Use information technology such as Up-To-Date, PubMed or Ovid to enhance patient care.
- Teach fellow residents, medical students, and interns.
- Use patient care errors and near misses to teach residents and students.

### **Interpersonal and Communication Skills**

- Carefully listen to patients to assess the patient's health problems including verbal and non-verbal communications.
- Communicate and establish a therapeutic relationship with patients.
- Demonstrate effective communication skills with patients, families, and other health care personnel, especially communications addressing end-of-life decisions.
- Present a case accurately and succinctly to attending physicians, fellow residents, and other health care professionals.
- Provide timely, legible, thorough, succinct medical record documentation - histories and physical examinations, admission notes, progress notes, procedure notes and discharge summaries.
- Educate and counsel patients, and families using non-technical and clear language.
- Demonstrate skill in handling all difficult patient care situations.
- Speak clearly when addressing patient issues and management plans with patients, families, and health care colleagues.
- Spend adequate time with patients addressing their questions and concerns.
- Work well within team context relating to students, residents, attending physicians, nurses, and patients
- Communicate effectively when discussing patient conditions and health care practices with fellow residents, attending physicians and other health care providers.
- Represent the orthopaedics staff in interactions with patients and their families, acting with compassion and consideration at all times.

### **Professionalism**

- Professionally interact with patients, attending physicians and allied health care personnel.
- Establish trust with patients and staff.
- Demonstrate respect, compassion, integrity, punctuality, reliability, and honesty with regards to patients and colleagues.
- Show regard for the opinions of others.
- Display initiative and leadership.
- Acknowledge errors, alert patients and appropriate health care providers, and create an action plan to minimize them.
- Demonstrate concern for educational development of students and residents.
- Volunteer for activities for the good of the institution and community.
- Ask for help when needed and seek and accept feedback.

- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Maintain patient confidentiality.
- Demonstrate understanding of the ethical concerns about pharmaceutical and patient gifts.
- Compassionately respond to issues of culture, age, gender, ethnicity, and disability in patient care.
- Interface with referring and consulting physicians and appropriate hospital staff in a professional and respectful manner, recognizing and instituting the core competencies.

### **Systems Based Practice**

- Deliver high-quality medical care and demonstrate ability to practice medicine in a private, government, and inner city hospital settings
- Demonstrate knowledge of types of medical practice and health care delivery systems and understand how this affects patient care.
- Demonstrate knowledge of business aspects of medical practice including coding and insurance.
- Work with ancillary team members (discharge planners, case managers, and social workers) to provide high quality cost-effective care.
- Practice effective allocation of health care resources to avoid compromising quality of care.
- Interact with patients, attending physicians and allied health care personnel as part of a health care team.
- Serve as a patient advocate in the outpatient and inpatient setting.
- Direct care in inpatient and outpatient settings as a member of a multidisciplinary team.
- Demonstrate knowledge of how the health care system including other physicians, nurses, and health care professionals affect their patient care practices.

### **Implementation**

- Daily hospital rounds with faculty
- Daily clinic schedules for evaluation, treatment planning, and follow-up of patients with spinal pathologies
- Weekly Clinicopathology Conference
- Weekly Core Curriculum Conference
- Monthly spine conference
- Spine journal club

### **Reading list**

- Hoppenfeld: Physical Examination of the Spine and Extremities
- Canale: Campbell's Operative Orthopaedics, 10<sup>th</sup> edition
- Current relevant articles (list maintained in library and distributed to residents at start of rotation)

**Evaluation**

- Residents are globally evaluated by faculty members based on the elements of the core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. Their progression to more responsibility and more participation in surgery is based on observed advances in medical knowledge and practice-based learning. In the out-patient and in-patient postoperative settings, they are evaluated on their professionalism and communication skills in dealing with patients, families, other specialists, medical and paramedical personnel, junior and senior residents, and faculty members. System-based practice is evaluated by the resident's participation in clinical protocols, including coding and record keeping activities.
- Written evaluations are completed by faculty members at the end of each rotation. Annual oral examinations are held each year, with one section devoted to spine surgery.

**Orthopaedic oncology (PGY2)**

This 6-week rotation focuses on adult and pediatric orthopaedic oncology and is directed by a fellowship-trained orthopaedic oncologist, Dr. Robert Heck. During this rotation residents learn diagnostic and decision-making skills relevant to musculoskeletal tumors in adults and children, as well as surgical limb-sparing procedures. Regular weekly conferences present neoplastic conditions (both primary and metastatic), which are discussed by faculty, residents, pathologist, and radiologist. Patients are evaluated and treated in both private practice facilities and at Methodist University Hospital.

**General goals and objectives****Patient Care**

- Use specialized diagnostic tests for benign and malignant musculoskeletal tumors in adults and children.
- Interpret imaging studies (radiographs, CT, MRI) of musculoskeletal neoplasms.
- Interpret pathology studies for benign and malignant tumors.
- Appropriately use staging systems for musculoskeletal tumors.
- Determine appropriate operative or nonoperative treatment plan for benign, malignant, and metastatic tumors of the musculoskeletal system.
- Coordinate treatment with other medical specialists.
- Perform the following surgical skills or procedures including but not limited to biopsy of bone and soft tissue tumors; extended curettage; marginal and wide resection of musculoskeletal neoplasms; reconstruction using allograft and tumor prostheses; and treatment of patients with metastatic carcinoma and multiple myeloma.

**Medical Knowledge**

- Demonstrate an understanding of the pathogenesis and general treatment for benign, malignant, and metastatic tumors of the musculoskeletal system.

### **Practice Based Learning and Improvement**

- Evaluate patient care practices, discuss how they meet standards, and develop ways to improve these practices.
- Participate in all mandated conferences.
- Complete a QA/QI project under faculty direction.
- Demonstrate improvement in clinical management.
- Implement new scientific advances and clinical approaches from a variety of sources into current patient care practices.
- Analyze and evaluate medical literature and examine alternate sources for relevant information that pertains to their patient's health problems.
- Take responsibility for lifelong learning.
- Use information technology such as Up-To-Date, PubMed or Ovid to enhance patient care.
- Teach fellow residents, medical students, and interns.
- Use patient care errors and near misses to teach residents and students.

### **Interpersonal and Communication Skills**

- Carefully listen to patients to assess the patient's health problems including verbal and non-verbal communications.
- Communicate and establish a therapeutic relationship with patients.
- Demonstrate effective communication skills with patients, families, and other health care personnel, especially communications addressing end-of-life decisions.
- Present a case accurately and succinctly to attending physicians, fellow residents, and other health care professionals.
- Provide timely, legible, thorough, succinct medical record documentation - histories and physical examinations, admission notes, progress notes, procedure notes and discharge summaries.
- Educate and counsel patients, and families using non-technical and clear language.
- Demonstrate skill in handling all difficult patient care situations.
- Speak clearly when addressing patient issues and management plans with patients, families, and health care colleagues.
- Spend adequate time with patients addressing their questions and concerns.
- Work well within team context relating to students, residents, attending physicians, nurses, and patients
- Communicate effectively when discussing patient conditions and health care practices with fellow residents, attending physicians and other health care providers.
- Represent the orthopaedics staff in interactions with patients and their families, acting with compassion and consideration at all times.

### **Professionalism**

- Professionally interact with patients, attending physicians and allied health care personnel.
- Establish trust with patients and staff.
- Demonstrate respect, compassion, integrity, punctuality, reliability, and honesty with regards to patients and colleagues.
- Show regard for the opinions of others.
- Display initiative and leadership.
- Acknowledge errors, alert patients and appropriate health care providers, and create an action plan to minimize them.
- Demonstrate concern for educational development of students and residents.
- Volunteer for activities for the good of the institution and community.
- Ask for help when needed and seek and accept feedback.
- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Maintain patient confidentiality.
- Demonstrate understanding of the ethical concerns about pharmaceutical and patient gifts.
- Compassionately respond to issues of culture, age, gender, ethnicity, and disability in patient care.
- Interface with referring and consulting physicians and appropriate hospital staff in a professional and respectful manner, recognizing and instituting the core competencies.

### **Systems Based Practice**

- Deliver high-quality medical care and demonstrate ability to practice medicine in a private, government, and inner city hospital settings
- Demonstrate knowledge of types of medical practice and health care delivery systems and understand how this affects patient care.
- Demonstrate knowledge of business aspects of medical practice including coding and insurance.
- Work with ancillary team members (discharge planners, case managers, and social workers) to provide high quality cost-effective care.
- Practice effective allocation of health care resources to avoid compromising quality of care.
- Interact with patients, attending physicians and allied health care personnel as part of a health care team.
- Serve as a patient advocate in the outpatient and inpatient setting.
- Direct care in inpatient and outpatient settings as a member of a multidisciplinary team.
- Demonstrate knowledge of how the health care system including other physicians, nurses, and health care professionals affect their patient care practices.

### **Implementation**

- Weekly tumor conference: review of research, classification, case presentations, and treatment discussions

- Weekly Clinicopathology Conference: staff and resident presentations on outcome studies, treatments, classifications
- Weekly Core Curriculum Conference: basic science series
- Tumor journal club

### **Reading list**

- Simon & Springfield: Surgery for Bone and Soft-Tissue Tumors
- Wold: Atlas of Orthopaedic Pathology
- Canale: Campbell's Operative Orthopaedics, 10<sup>th</sup> edition
- Current relevant articles (list maintained in library and distributed to residents at start of rotation)

### **Evaluation**

- Residents are globally evaluated by faculty members based on the elements of the core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice. Their progression to more responsibility and more participation in surgery is based on observed advances in medical knowledge and practice-based learning. In the out-patient and in-patient postoperative settings, they are evaluated on their professionalism and communication skills in dealing with patients, families, other specialists, medical and paramedical personnel, junior and senior residents, and faculty members. System-based practice is evaluated by the resident's participation in clinical protocols, including coding and record keeping activities.
- Written evaluations are completed by faculty members at the end of each rotation.
- Annual oral examinations are held each year, with one section devoted to basic science, including orthopaedic oncology.

## **Anatomy and pathology (PGY3)**

This three-month rotation is largely non-clinical and provides the resident dedicated time and concentrated study in orthopaedic oncology and for clinical and basic science research, except for night call approximately one night per month. This rotation allows time for use of the basic science laboratories and anatomy laboratory. In conjunction with the staff pathologist, the residents prepare the case presentations and lectures on orthopaedic pathology for the weekly Clinicopathology Conferences.

### **General goals and objectives**

#### **Patient Care**

#### **Medical Knowledge**

- Strengthen knowledge of orthopaedic science principles.
- Expand knowledge of orthopaedic anatomy.

- Provide basis for evaluation of a range of orthopaedic neoplasms and conditions, including laboratory and pathology studies.
- Allow time for basic science and clinical research to advance projects and stimulate interest in research.
- Develop research, organizational, and teaching skills by instruction of medical students and presentations to fellow residents and faculty.
- Develop critical reading skills and understanding of differing levels of evidence, differing outcomes measurement tools, and use of statistical methods.

### **Practice Based Learning and Improvement**

- Evaluate patient care practices, discuss how they meet standards, and develop ways to improve these practices.
- Participate in all mandated conferences.
- Complete a QA/QI project under faculty direction.
- Demonstrate improvement in clinical management.
- Implement new scientific advances and clinical approaches from a variety of sources into current patient care practices.
- Analyze and evaluate medical literature and examine alternate sources for relevant information that pertains to their patient's health problems.
- Take responsibility for lifelong learning.
- Use information technology such as Up-To-Date, PubMed or Ovid to enhance patient care.
- Teach fellow residents, medical students, and interns.
- Use patient care errors and near misses to teach residents and students.

### **Interpersonal and Communication Skills**

- Carefully listen to patients to assess the patient's health problems including verbal and non-verbal communications.
- Communicate and establish a therapeutic relationship with patients.
- Demonstrate effective communication skills with patients, families, and other health care personnel, especially communications addressing end-of-life decisions.
- Present a case accurately and succinctly to attending physicians, fellow residents, and other health care professionals.
- Provide timely, legible, thorough, succinct medical record documentation - histories and physical examinations, admission notes, progress notes, procedure notes and discharge summaries.
- Educate and counsel patients, and families using non-technical and clear language.
- Demonstrate skill in handling all difficult patient care situations.
- Speak clearly when addressing patient issues and management plans with patients, families, and health care colleagues.
- Spend adequate time with patients addressing their questions and concerns.
- Work well within team context relating to students, residents, attending physicians, nurses, and patients

- Communicate effectively when discussing patient conditions and health care practices with fellow residents, attending physicians and other health care providers.
- Represent the orthopaedics staff in interactions with patients and their families, acting with compassion and consideration at all times.

### **Professionalism**

- Professionally interact with patients, attending physicians and allied health care personnel.
- Establish trust with patients and staff.
- Demonstrate respect, compassion, integrity, punctuality, reliability, and honesty with regards to patients and colleagues.
- Show regard for the opinions of others.
- Display initiative and leadership.
- Acknowledge errors, alert patients and appropriate health care providers, and create an action plan to minimize them.
- Demonstrate concern for educational development of students and residents.
- Volunteer for activities for the good of the institution and community.
- Ask for help when needed and seek and accept feedback.
- Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Maintain patient confidentiality.
- Demonstrate understanding of the ethical concerns about pharmaceutical and patient gifts.
- Compassionately respond to issues of culture, age, gender, ethnicity, and disability in patient care.
- Interface with referring and consulting physicians and appropriate hospital staff in a professional and respectful manner, recognizing and instituting the core competencies.

### **Systems Based Practice**

- Deliver high-quality medical care and demonstrate ability to practice medicine in a private, government, and inner city hospital settings
- Demonstrate knowledge of types of medical practice and health care delivery systems and understand how this affects patient care.
- Demonstrate knowledge of business aspects of medical practice including coding and insurance.
- Work with ancillary team members (discharge planners, case managers, and social workers) to provide high quality cost-effective care.
- Practice effective allocation of health care resources to avoid compromising quality of care.
- Interact with patients, attending physicians and allied health care personnel as part of a health care team.
- Serve as a patient advocate in the outpatient and inpatient setting.

- Direct care in inpatient and outpatient settings as a member of a multidisciplinary team.
- Demonstrate knowledge of how the health care system including other physicians, nurses, and health care professionals affect their patient care practices.

**Reading list**

- Wold: Atlas of Orthopaedic Pathology
- AAOS: Orthopaedic Basic Science
- Current relevant articles (list maintained in library and distributed to residents at start of rotation)

**Evaluation**

- Residents on this non-clinical rotation are evaluated by the staff orthopaedic pathologist and other faculty members based on their knowledge of orthopaedic basic science, pathology, and oncology as evidenced by their regular presentations at Clinicopathology Conferences.
- Written evaluations are completed by faculty members at the end of each rotation.
- Annual oral examinations are held each year, with one section devoted to basic science, including orthopaedic oncology.