

# Bayview Orthopaedic Service

## 1. Rotation Goals and Objectives by Core Competency

### General Goals & Objectives PGY- 2 Year

#### **A. Patient Care**

- 1) Learn the essentials of performing a history and physical examination
- 2) Learn the principles of ordering and interpreting plain radiograph
- 3) Recognize orthopaedic emergencies related to trauma, sepsis, and neurologic compromise
- 4) Know the evaluation strategy for patients with traumatic injuries
- 5) Demonstrate proficiency in common non-operative skills:
  - a. Splint and cast application
  - b. Joint aspiration/injection
  - c. Fracture manipulation
  - d. Joint reduction
  - e. Skeletal traction pin placement
- 6) Demonstrate basic operating room skills:
  - a. Positioning, preparation, and draping
  - b. Layered incision closure
  - c. Basic orthopaedic exposures and approaches of the spine and extremities
  - d. Basic arthroscopic techniques of the shoulder and knee
  - e. Basic techniques of fracture fixation including plate and screw fixation
- 7) Demonstrate the ability to care for orthopaedic patients postoperatively:
  - a. Pain management
  - b. Wound care
  - c. Antibiotic prophylaxis
  - d. Anticoagulation management
- 8) Consistently mark patients with initials prior to surgery and drape the initials into the surgical field.
- 9) Consistently perform the surgical time-out prior to incision.
- 10) Report medical errors to the attending surgeon when recognized
- 11) Develop patient management plan and discharge plan for patients admitted to the hospital

## **B. Interpersonal and Communication Skills**

- 1) Able to listen to patients' concerns and express sensitivity and empathy for their medical problems
- 2) Explain the risks and goals of surgery to patients and their families and alternatives to surgery (perform informed consent)
- 3) Establish an effective doctor-patient relationship – attire, grooming, demeanor, concern, and commitment
- 4) Establish an appropriate level of communication and relationship with ancillary staff:
  - a. Refrain from abusive behavior
  - b. Be courteous
  - c. Report staff who are disrespectful and perform their duties in an unsatisfactory manner
- 5) Write legibly and print name under all signatures
- 6) Date and time all notes
- 7) Dictate discharge summaries in a timely manner
- 8) Answer patient telephone calls on the same day they are received

## **C. Professionalism**

- 1) Sensitive and responsive to differences in culture, gender, age, and impairments of both patients and staff
- 2) Sensitive to the needs of patients and families
- 3) Reliable in the performance of responsibilities
- 4) Respectful of the opinions of other healthcare professionals
- 5) Ability to express opinions in a manner that is sensitive to others

## **D. Medical Knowledge**

- 1) Knowledge of basic anatomy of spine and extremities
- 2) Working knowledge of common orthopaedic emergencies:
  - a. Compartment syndrome
  - b. Open fractures
  - c. Dislocations and subluxations
  - d. Musculoskeletal infections, including cellulitis, septic arthritis, and osteomyelitis
  - e. Deep venous thrombosis, pulmonary embolism, and fat embolism syndrome
- 3) Working knowledge of common fractures
  - a. Distal radius
  - b. Ankle
  - c. Hip

- d. Tibial shaft
  - e. Femoral shaft
- 4) Working knowledge of classification and treatment of open fractures
  - 5) Working knowledge of degenerative and inflammatory arthritis
  - 6) Classification of shoulder instability and acromioclavicular injuries
  - 7) Working knowledge of common forefoot deformities, including lesser toe deformities, interdigital neuritis, and hallux rigidus
  - 8) Basic knowledge of implant biomaterials
  - 9) Basic geriatric principles including differences in the aging patient

#### **E. Practice-Based Learning and Improvement**

- 1) Ability to analyze effectiveness of his or her own interpretive, problem-solving, and surgical skills
- 2) Ability to use available information technology to obtain and manage information
- 3) Receptive to constructive criticism

#### **F. Systems-Based Practice**

- 1) Demonstrates ability to provide cost-effective care:
  - a. Utilization of appropriate diagnostic tests
  - b. Appropriate use of antibiotics
- 2) Utilization of the health care system to provide optimal patient care outside the hospital
- 3) Ability to fully utilize the chain of command in both the supervision of interns and medical students, and interaction with senior residents and attending staff
- 4) Ability to recognize emergencies and communicate the problem to appropriate personnel

### **General Goals & Objectives PGY- 3 Year**

#### **A. Patient Care**

- 1) Sharpen skills of performing a history and physical examination
- 2) Learn the principles of ordering and interpreting plain radiographs, CT and MR imaging, radionuclide scanning
- 3) Recognize orthopaedic emergencies related to trauma, sepsis, and neurologic compromise.
- 4) Know the evaluation strategy and initial management of patients with complex traumatic injuries, including spine trauma and periarticular fractures.
- 5) Demonstrate proficiency in common non-operative skills:

Splint and cast application

Joint aspiration/injection

Fracture manipulation

Joint reduction

Skeletal traction pin placement

- 6) Demonstrate basic operating room skills:

Positioning, preparation, and draping

Layered incision closure

Standard orthopaedic exposures and approaches of the extremities

Arthroscopic techniques of meniscal debridement and shoulder decompression

Basic steps of primary hip and knee arthroplasty

Basic techniques of fracture care including reduction techniques, plate and screw fixation, intramedullary fixation, long bone external fixation, hip screw, and bipolar hemiarthroplasty

Basic techniques of forefoot reconstruction

- 7) Demonstrate the ability to care for orthopaedic patients postoperatively:

Pain management

Wound care

Antibiotic prophylaxis

Anticoagulation management

- 8) Consistently mark patients with initials prior to surgery and drape the initials into the surgical field

- 9) Consistently perform the surgical time-out prior to incision

- 10) Report medical errors to the attending surgeon when recognized

- 11) Develop patient management plan and discharge plan for patients admitted to the hospital

**B. Interpersonal and Communication Skills**

- 1) Able to listen to patients' concerns and express sensitivity and empathy for their medical problems

- 2) Explain the risks and goals of surgery to patients and their families and alternatives to surgery (perform informed consent)

- 3) Establish an effective doctor-patient relationship – attire, grooming, demeanor, concern, and commitment
- 4) Establish an appropriate level of communication and relationship with ancillary staff:
  - Refrain from abusive behavior
  - Be courteous
  - Report staff who are disrespectful and perform their duties in an unsatisfactory manner
- 5) Write legibly and print name under all signatures
- 6) Date and time all notes
- 7) Dictate discharge summaries in a timely manner
- 8) Answer patient telephone calls on the same day they are received

**C. Professionalism**

- 1) Sensitive and responsive to differences in culture, gender, age, and impairments of both patients and staff
- 2) Sensitive to the needs of patients and families
- 3) Reliable in the performance of responsibilities
- 4) Respectful of the opinions of other healthcare professionals
- 5) Ability to express opinions in a manner that is sensitive to others

**D. Medical Knowledge**

- 1) Firm knowledge of topographical, functional, and surgical anatomy of spine and extremities
- 2) Working knowledge of common orthopaedic emergencies:
  - Compartment syndrome
  - Open fractures
  - Dislocations and subluxations
  - Musculoskeletal infections, including cellulitis, septic arthritis, and osteomyelitis
  - Deep venous thrombosis, pulmonary embolism, and fat embolism syndrome

3) Working knowledge of common fractures

Distal radius

Ankle

Hip

Tibial shaft

Femoral shaft

4) Working knowledge of classification and treatment of open fractures

5) Working knowledge of indications for total joint arthroplasty, advantages/disadvantages of common implant types, and principles of ligament balancing

6) Working knowledge of spectrum of rotator cuff disease (impingement, tendinosis, rupture), meniscal pathology, and treatment options for ACL injuries

7) Working knowledge of evaluation and surgical treatment options of hallux valgus, hallux rigidus, and forefoot deformities

**E. Practice-Based Learning and Improvement**

1) Ability to analyze effectiveness of his or her own interpretive, problem-solving, and surgical skills

2) Ability to use available information technology to obtain and manage information

3) Receptive to constructive criticism

**F. Systems-Based Practice**

1) Demonstrates ability to provide cost-effective care:

Utilization of appropriate diagnostic tests

Appropriate use of antibiotics

2) Utilization of the health care system to provide optimal patient care outside the hospital

3) Ability to fully utilize the chain of command in both the supervision of junior residents and medical students, and interaction with senior residents and attending staff

4) Ability to recognize emergencies and communicate the problem to appropriate personnel

## **General Goals & Objectives PGY- 4 Year**

### **A. Patient Care**

- 1) Sharpen skills of performing a history and physical examination
- 2) Proficiency in interpreting plain radiographs, CT and MR images, and radionuclide scans
- 3) Know the evaluation strategy and initial management of patients with complex traumatic injuries, including spine trauma and periarticular fractures
- 4) Demonstrate advanced operating room skills:
  - Room set-up, equipment requisition
  - Arthroscopic techniques of meniscal repair, ACL reconstruction, and shoulder stabilization
  - Proficient at primary hip and knee arthroplasty, basic knowledge of revision hip and knee arthroplasty techniques
  - Techniques of fracture care including reduction techniques, plate and screw fixation, intramedullary fixation, periarticular plate and external fixation, hip screw, and bipolar hemiarthroplasty
- 5) Demonstrate the ability to care for orthopaedic patients postoperatively:
  - Pain management
  - Wound care
  - Antibiotic prophylaxis
  - Anticoagulation management
- 6) Consistently mark patients with initials prior to surgery and drape the initials into the surgical field
- 7) Consistently perform the surgical time-out prior to incision
- 8) Report medical errors to the attending surgeon when recognized
- 9) Develop patient management plan and discharge plan for patients admitted to the hospital

### **B. Interpersonal and Communication Skill**

- 1) Able to listen to patients' concerns and express sensitivity and empathy for their medical problems

- 2) Explain the risks and goals of surgery to patients and their families and alternatives to surgery (perform informed consent)
- 3) Establish an effective doctor-patient relationship – attire, grooming, demeanor, concern, and commitment
- 4) Establish an appropriate level of communication and relationship with ancillary staff:
  - Refrain from abusive behavior
  - Be courteous
  - Report staff who are disrespectful and perform their duties in an unsatisfactory manner
- 5) Write legibly and print name under all signatures
- 6) Date and time all notes
- 7) Dictate discharge summaries in a timely manner
- 8) Answer patient telephone calls on the same day they are received

### **C. Professionalism**

- 1) Sensitive and responsive to differences in culture, gender, age, and impairments of both patients and staff
- 2) Sensitive to the needs of patients and families
- 3) Reliable in the performance of responsibilities
- 4) Respectful of the opinions of other healthcare professionals
- 5) Ability to express opinions in a manner that is sensitive to others

### **D. Medical Knowledge**

- 1) Advanced knowledge of surgical anatomy of extremities
- 2) Proficient at surgical techniques of reduction and fixation of common fractures, including distal radius, hip, femoral shaft, tibial shaft, ankle
- 3) Working knowledge of complex fractures, including classification, treatment options, and techniques of reduction and fixation

Proximal humerus

Distal humerus

Scaphoid

Distal femur

Tibial plateau

Pilon

Calcaneus

- 4) Proficient at primary total joint arthroplasty
- 5) Working knowledge of evaluation and treatment options for infected total joint arthroplasty
- 6) Working knowledge of indications for revision total joint arthroplasty, revision exposure techniques, and revision implant advantages/disadvantages
- 7) Working knowledge of shoulder instability, revision ACL surgery, complications of ACL surgery, and principles of injury in the throwing athlete
- 8) Working knowledge of inflammatory and degenerative arthritis of the foot and ankle; posterior tibialis tendon dysfunction, pes planus, and pes cavus deformities

#### **E. Practice-Based Learning and Improvement**

- 1) Ability to analyze effectiveness of his or her own interpretive, problem-solving, and surgical skills
- 2) Ability to use available information technology to obtain and manage information
- 3) Receptive to constructive criticism

#### **F. Systems-Based Practice**

- 1) Demonstrates ability to provide cost-effective care:
  - Utilization of appropriate diagnostic tests
  - Appropriate use of antibiotics
- 2) Utilization of the health care system to provide optimal patient care outside the hospital
- 3) Ability to fully utilize the chain of command in both the supervision of junior residents and medical students, and interaction with senior residents and attending staff
- 4) Ability to recognize emergencies and communicate the problem to appropriate personnel

### **General Goals & Objectives PGY- 5 Year**

#### **A. Patient Care**

- 1) Sharpen skills of performing a history and physical examination

- 2) Proficiency in interpreting plain radiographs, CT and MR images, and radionuclide scans
- 3) Know the evaluation strategy and initial management of patients with complex traumatic injuries, including spine trauma and periarticular fractures
- 4) Demonstrate advanced operating room skills:
  - Room set-up, equipment requisition
  - Standard and revision orthopaedic exposures and approaches of the spine and extremities
  - Arthroscopic techniques of revision ACL reconstruction, PCL reconstruction, and shoulder stabilization
  - Basic small joint arthroscopic techniques of elbow, wrist, and ankle
  - Proficient at primary and revision hip and knee arthroplasty techniques
  - Techniques of fracture care including intramedullary fixation, periarticular plate and external fixation, hip screw, and bipolar hemiarthroplasty, bone grafting techniques
  - Proficient at osteotomy, arthroplasty, and arthrodesis techniques for reconstruction of the foot and ankle
- 5) Demonstrate the ability to care for orthopaedic patients postoperatively:
  - Pain management
  - Wound care
  - Antibiotic prophylaxis
  - Anticoagulation management
- 6) Consistently mark patients with initials prior to surgery and drape the initials into the surgical field
- 7) Consistently perform the surgical time-out prior to incision
- 8) Report medical errors to the attending surgeon when recognized
- 9) Develop patient management plan and discharge plan for patients admitted to the hospital

## **B. Interpersonal and Communication Skills**

- 1) Able to listen to patients' concerns and express sensitivity and empathy for their medical problems
- 2) Explain the risks and goals of surgery to patients and their families and alternatives to surgery (perform informed consent)
- 3) Establish an effective doctor-patient relationship – attire, grooming, demeanor, concern, and commitment
- 4) Establish an appropriate level of communication and relationship with ancillary staff:
  - Refrain from abusive behavior
  - Be courteous
  - Report staff who are disrespectful and perform their duties in an unsatisfactory manner
- 5) Write legibly and print name under all signatures
- 6) Date and time all notes
- 7) Dictate discharge summaries and operative notes in a timely manner
- 8) Answer patient telephone calls on the same day they are received

## **C. Professionalism**

- 1) Sensitive and responsive to differences in culture, gender, age, and impairments of both patients and staff
- 2) Sensitive to the needs of patients and families
- 3) Reliable in the performance of responsibilities
- 4) Respectful of the opinions of other healthcare professionals
- 5) Ability to express opinions in a manner that is sensitive to others

## **D. Medical Knowledge**

- 1) Advanced knowledge of surgical anatomy of extremities
- 2) Proficient at surgical techniques of reduction and fixation of common and complex fractures, including periarticular and long bone fractures
- 3) Working knowledge of complex fractures, including classification, treatment options, and techniques of reduction and fixation
  - Proximal humerus

Distal humerus

Scaphoid

Distal femur

Tibial plateau

Pilon

Calcaneus

- 4) Working knowledge of evaluation and treatment options for infected total joint arthroplasty, osteomyelitis, and infected nonunions
- 5) Working knowledge of long-term outcomes of total joint arthroplasty, including variations with common implants
- 6) Working knowledge of on-field sports medicine, management of the elite athlete
- 7) Working knowledge of treatment options for deformities, arthritis, and complications of the foot and ankle, including malunions, nonunions, and revision surgery

#### **E. Practice-Based Learning and Improvement**

- 1) Ability to analyze effectiveness of his or her own interpretive, problem-solving, and surgical skills
- 2) Ability to use available information technology to obtain and manage information
- 3) Receptive to constructive criticism

#### **F. Systems-Based Practice**

- 1) Demonstrates ability to provide cost-effective care:  
Utilization of appropriate diagnostic tests  
  
Appropriate use of antibiotics
- 2) Utilization of the health care system to provide optimal patient care outside the hospital
- 3) Ability to function as team leader, supervise junior residents and medical students, and interact with attending staff
- 4) Ability to recognize emergencies and communicate the problem to appropriate personnel
- 5) Resident Supervision (Bayview Medical Center)

The residents assigned to the Orthopaedic Surgery Department at the Johns Hopkins Bayview Medical Center are a valued resource in providing care of patients in the clinic, hospital and in the operating room.

- A.** It is understood that the residents act under the direct supervision of the attending orthopaedic surgery staff.
- B.** Residents' daily activities are to be supervised by the chief residents.
- C.** All patients and consults will be reviewed by an attending physician at least once every 24-hour period. Junior residents are welcome to initiate care with proper input from the chief residents. A treatment plan needs to be reviewed with an attending physician within the 24-hour period.
- D.** In the operating room, residents perform under the direct supervision of the attending physician at all times, including nights, weekends and holidays. Surgical attending will be present for the initialing of the surgical site and for the time out. It is the attendings responsibility to be present for all critical portions of the operative procedure. Residents will be granted surgical independence as their abilities dictate. Attending physicians are directly responsible for their surgical care.
- E.** Junior resident on-call reports directly to the chief resident on-call. The chief resident on-call is directly responsible to the attending physician on-call. In-house resident should have quick and easy access to senior residents concerning after-hour orthopaedic issues. The chief resident should be within 30 minutes of the hospital to respond to evaluations in the hospital. Attending physician should be within 45 minutes of the hospital to attend to any orthopaedic emergencies. The residents on-call are encouraged to keep the attending physician on-call appraised of all issues, recognizing that some issues can wait until the morning, but everything should be discussed at the latest the next morning at the board.
- F.** All consults on the floor should be seen within 24-hours by a resident and reviewed with an attending physician. In all cases of consults and emergencies, the back-up support for the chief resident is the attending physician on-call. If the chief resident cannot find timely attending support to help resolve the orthopaedic issue, they have direct and immediate access to the Chairman of the Department, Dr. Simon Mears.



Total hip arthroplasty for primary osteoarthritis in patients fifty-five years of age or older.  
An analysis of the Finnish arthroplasty registry.

Mäkelä KT, Eskelinen A, Pulkkinen P, Paavolainen P, Remes V.

J Bone Joint Surg Am. 2008 Oct;90(10):2160-70.

Total hip arthroplasty with an uncemented tapered femoral component.

McLaughlin JR, Lee KR.

J Bone Joint Surg Am. 2008 Jun;90(6):1290-6.

AAOS Comprehensive Orthopaedic Review Pages 1025-1034  
Chapter 101 Primary Hip Arthroplasty

2) Hip replacement: polyethylene wear

The biology of aseptic osteolysis.

Holt G, Murnaghan C, Reilly J, Meek RM.

Clin Orthop Relat Res. 2007 Jul;460:240-52.

Wear Rate of Highly Cross-Linked Polyethylene in Total Hip Arthroplasty. A  
Randomized Controlled Trial

McCalden RW, MacDonald SJ, Rorabeck CH, Bourne RB, Chess DG, and Charron KD  
J. Bone Joint Surg. Am., Apr 2009; 91: 773 - 782.

Clinical Performance of Highly Cross-Linked Polyethylenes in Total Hip Arthroplasty

Jacobs CA, Christensen CP, Greenwald SA, and McKellop H

J. Bone Joint Surg. Am., Dec 2007; 89: 2779 - 2786.

AAOS Comprehensive Orthopaedic Review Pages 1017-1024

Chapter 100 Biomechanics and wear in joint arthroplasty

3) Hip replacement: metal on metal

Metal-on-metal hip resurfacing arthroplasty.

Shimmin A, Beaulé PE, Campbell P.

J Bone Joint Surg Am. 2008 Mar;90(3):637-54.

Metal-on-metal Bearing Surfaces

Joshua J. Jacobs, Robert M. Uran, Nadim J. Hallab, Anastasia K. Skipor, Alfons Fischer, and Markus A. Wimmer  
J. Am. Acad. Ortho. Surg., February 2009; 17: 69 - 76.

Position of Hip Resurfacing Component Affects Strain and Resistance to Fracture in the Femoral Neck  
Thomas Parker Vail, Richard R. Glisson, David E. Dominguez, Kenichi Kitaoka, and Danielle Ottaviano  
J. Bone Joint Surg. Am., Sep 2008; 90: 1951 - 1960.

AAOS Comprehensive Orthopaedic Review Pages 1025-1034  
Chapter 101 Primary Hip Arthroplasty

#### 4) Hip replacement: Femoroacetabular impingement

Femoroacetabular Impingement  
Javad Parvizi, Michael Leunig, and Reinhold Ganz  
J. Am. Acad. Ortho. Surg., September 2007; 15: 561 - 570.

The Young Adult with Hip Impingement: Deciding on the Optimal Intervention  
Paul E. Beaulé, David J. Allen, John C. Clohisy, Perry Schoenecker, and Michael Leunig.

J. Bone Joint Surg. Am., Jan 2009; 91: 210 - 221.

[Imaging of femoroacetabular impingement.](#)

Fadul DA, Carrino JA.

J Bone Joint Surg Am. 2009 Feb;91 Suppl 1:138-43.

Acetabular cartilage delamination in femoroacetabular impingement. Risk factors and magnetic resonance imaging diagnosis.

Anderson LA, Peters CL, Park BB, Stoddard GJ, Erickson JA, Crim JR.

J Bone Joint Surg Am. 2009 Feb;91(2):305-13.

AAOS Comprehensive Orthopaedic Review Pages 1005-1010

Chapter 98 Non arthroplasty surgical treatment of the hip

#### 5) Hip and knee replacement: vte prophylaxis

Prevention of Symptomatic Pulmonary Embolism in Patients Undergoing Total Hip or Knee Arthroplasty

Norman A. Johanson, Paul F. Lachiewicz, Jay R. Lieberman, Paul A. Lotke, Javad Parvizi, Vincent Pellegrini, Theodore A. Stringer, Paul Tornetta, III, Robert H. Haralson, III, and William C. Watters, III

J. Am. Acad. Ortho. Surg., March 2009; 17: 183 - 196.

Venous Thromboembolism Debate in Joint Arthroplasty

Jay R. Lieberman, C. Lowry Barnes, Paul F. Lachiewicz, Arlen D. Hanssen, Henry D. Clarke, and Vincent D. Pellegrini, Jr.  
J. Bone Joint Surg. Am., Aug 2009; 91: 29 - 32.

American Association of Orthopedic Surgeons and American College of Chest Physicians guidelines for venous thromboembolism prevention in hip and knee arthroplasty differ: what are the implications for clinicians and patients?

Eikelboom JW, Karthikeyan G, Fagel N, Hirsh J.

Chest. 2009 Feb;135(2):513-20. Review.

AAOS Comprehensive Orthopaedic Review Pages 149-156

Chapter 18 Coagulation and thromboembolism

6) Hip and knee replacement: infection prevention

Prophylactic Antibiotics in Orthopaedic Surgery

Laura Prokuski

J. Am. Acad. Ortho. Surg., May 2008; 16: 283 - 293.

Ultraviolet Lighting During Orthopaedic Surgery and the Rate of Infection

Merrill A. Ritter, Emily M. Olberding, and Robert A. Malinzak

J. Bone Joint Surg. Am., Sep 2007; 89: 1935 - 1940.

Prevention of Perioperative Infection

Nicholas Fletcher, D'Mitri Sofianos, Marschall Brantling Berkes, and William T.

Obremskey

J. Bone Joint Surg. Am., Jul 2007; 89: 1605 - 1618.

AAOS Comprehensive Orthopaedic Review Pages 1067-1074

Chapter 105 Periprosthetic joint infections

7) Knee replacement: fixation

Evolution of tibial fixation in total knee arthroplasty.

Lombardi AV Jr, Berasi CC, Berend KR.

J Arthroplasty. 2007 Jun;22(4 Suppl 1):25-9.

Long-term follow-up of the bone-ingrowth Ortholoc knee system without a metal-backed patella

Whiteside LA.

Clin Orthop Relat Res. 2001 Jul;(388):77-84.

A randomized controlled trial of cemented *Versus* cementless press-fit condylar total knee replacement 15-YEAR SURVIVAL ANALYSIS

P. N. Baker, F. M. Khaw, L. M. G. Kirk, C. N. A. Esler, P. J. Gregg

J Bone Joint Surg [Br] 2007;89-B:1608-14.

Survival and clinical function of cemented and uncemented prostheses in total knee replacement A META-ANALYSIS

R. Gandhi, D. Tsvetkov, J. R. Davey, N. N. Mahomed  
J Bone Joint Surg [Br] 2009;91-B:889-95.

AAOS Comprehensive Orthopaedic Review Pages 1043-1056  
Chapter 100 Primary total knee arthroplasty

8) Knee replacement: wear

Wear and Osteolysis Around Total Knee Arthroplasty

Douglas D.R. Naudie, Deborah J. Ammeen, Gerard A. Engh, and Cecil H. Rorabeck  
J. Am. Acad. Ortho. Surg., January 2007; 15: 53 - 64.

All-polyethylene compared with metal-backed tibial components in total knee arthroplasty at ten years. A prospective, randomized controlled trial.

Bettinson KA, Pinder IM, Moran CG, Weir DJ, Lingard EA.

J Bone Joint Surg Am. 2009 Jul;91(7):1587-94.

Modular fixed-bearing total knee arthroplasty with retention of the posterior cruciate ligament. A study of patients followed for a minimum of fifteen years.

Dixon MC, Brown RR, Parsch D, Scott RD.

J Bone Joint Surg Am. 2005 Mar;87(3):598-603.

AAOS Comprehensive Orthopaedic Review Pages 1017-1024

Chapter 100 Biomechanics and wear in joint arthroplasty

9) Knee replacement: kinematics

2009 Marshall Urist Young Investigator Award: how often do patients with high-flex total knee arthroplasty use high flexion?

Huddleston JI, Scarborough DM, Goldvasser D, Freiberg AA, Malchau H.

Clin Orthop Relat Res. 2009 Jul;467(7):1898-906. Epub 2009 May 7.

Three-dimensional tibiofemoral articular contact kinematics of a cruciate-retaining total knee arthroplasty.

Li G, Suggs J, Hanson G, Durbhakula S, Johnson T, Freiberg A.

J Bone Joint Surg Am. 2006 Feb;88(2):395-402.

Retention versus sacrifice of the posterior cruciate ligament in total knee replacement for treatment of osteoarthritis and rheumatoid arthritis (Review)

Jacobs W, Clement DJ, Wymenga AAB,  
The Cochrane Library 2009, Issue 4, pp 1-38

10) Knee replacement: balancing

Alignment in total knee replacement.

Sikorski JM.

*J Bone Joint Surg Br.* 2008 Sep;90(9):1121-7. Review.

Constraint in primary total knee arthroplasty.

Morgan H, Battista V, Leopold SS.

*J Am Acad Orthop Surg.* 2005 Dec;13(8):515-24. Review.

The intra-operative joint gap in cruciate-retaining compared with posterior-stabilized total knee replacement.

Matsumoto T, Kuroda R, Kubo S, Muratsu H, Mizuno K, Kurosaka M.

*J Bone Joint Surg Br.* 2009 Apr;91(4):475-80.

AAOS Comprehensive Orthopaedic Review Pages 1043-1056

Chapter 100 Primary total knee arthroplasty

B. Reading for Friday trauma conference by week

1) Olecranon fractures

Olecranon Fractures: Treatment Options

Hak DJ, Golladay GJ, *J Am Acad Orthop Surg* 2000;8:266-275

AAOS Comprehensive Orthopaedic Review Pages 888-891

Chapter 83 Fractures of the elbow

2) Pilon fractures

Complications After Treatment of Tibial Pilon Fractures: Prevention and Management Strategies

Thorardson D, *J Am Acad Orthop Surg* 2000;8:253-265

Outcomes After Treatment of High-Energy Tibial Plafond Fractures. Pollak AN, McCarthy ML, Shay Bess R, Agel J and Swiontkowski MF. *J Bone Joint Surg Am.* 2003;85:1893-1900.

AAOS Comprehensive Orthopaedic Review Pages 669-675

Chapter 60 Fractures of the ankle and tibial plafond

3) Periprosthetic fractures

Periprosthetic Femoral Fractures,

Kelley S,

*J Am Acad Orthop Surg* 1994;2:164-172

AAOS Comprehensive Orthopaedic Review Pages 1075-1088  
Chapter 106 Periprosthetic fractures associated with total hip and knee arthroplasty

4) Pelvic fractures

Acute Pelvic Fractures: I. Causation and Classification

Tile M

J Am Acad Orthop Surg 1996;4:143-151

Acute Pelvic Fractures: II. Principles of Management

Tile M,

J Am Acad Orthop Surg 1996;4:152-161

AAOS Comprehensive Orthopaedic Review Pages 577-582

Chapter 53 Pelvic, acetabular and sacral fractures

5) Acetabular fractures

Displaced Acetabular Fractures Managed Operatively: Indicators of Outcome

Mears DC, Velyvis JH, and Chang C-P, CORR 2003; 407, 173–186.

Fractures of the Acetabulum: Accuracy of Reduction and Clinical Results in Patients  
Managed Operatively within Three Weeks after the injury

Matta JM

J Bone Joint Surg Am. 1996;78:1632-45.

AAOS Comprehensive Orthopaedic Review Pages 582-590

Chapter 53 Pelvic, acetabular and sacral fractures

6) Distal radius fractures

Intra-Articular Fractures of the Distal Aspect of the Radius

Trumble TE, Culp R, Hanel DP, Geissler WB and Berger RA

J Bone Joint Surg Am. 1998;80:582-600.

AAOS Comprehensive Orthopaedic Review Pages 560-562

Chapter 51 Hand and wrist fractures and dislocations

7) Proximal humerus fractures

Displaced Three- and Four-Part Proximal

Humerus Fractures: Evaluation and Management

Naranja RJ and Iannotti JP,

J Am Acad Orthop Surg 2000;8:373-382

Displaced Proximal Humeral Fractures: PART I. and PART II.

Neer CS

J Bone Joint Surg Am. 1970;52:1077-1103.

AAOS Comprehensive Orthopaedic Review Pages 843-848  
Chapter 78 Traumatic conditions of the shoulder

8) Tibial plateau fractures

High-Energy Tibial Plateau Fractures  
Eric M. Berkson EM and Virkus WW,  
J Am Acad Orthop Surg 2006;14:20-31

9) Open fractures

Open Fractures: Evaluation and Management  
Zalavras CG and Patzakis MJ,  
J Am Acad Orthop Surg 2003;11:212-219  
AAOS Comprehensive Orthopaedic Review Pages 533-538  
Chapter 49 Gunshot wounds and open fractures

10) Compartment syndrome

Diagnostic techniques in acute compartment syndrome of the leg.  
Shadgan B, Menon M, O'Brien PJ, Reid WD.  
J Orthop Trauma. 2008 Sep;22(8):581-7. Review.

Acute compartment syndrome in lower extremity musculoskeletal trauma.

Olson SA, Glasgow RR.  
J Am Acad Orthop Surg. 2005 Nov;13(7):436-44. Review.

AAOS Comprehensive Orthopaedic Review Pages 239, 616,654-655

11) Intertrochanteric hip fractures

Unstable Intertrochanteric Hip Fractures in the Elderly.  
Lindskog DM and Baumgaertner MR  
J Am Acad Orthop Surg 2004;12:179-190

The value of the tip-apex distance in predicting failure of fixation of peritrochanteric fractures of the hip.  
Baumgaertner MR, Curtin SL, Lindskog DM and Keggi JM.  
J Bone Joint Surg Am. 1995;77:1058-1064.

AAOS Comprehensive Orthopaedic Review Pages 597-610  
Chapter 55 Fractures of the hip

## 5. Didactic Activities

### A. Adult reconstruction conference

Each Tuesday at 7:20 am a reconstruction conference is held. This conference reviews a topic related to hip or knee reconstruction on a rotating 10 week schedule changing with the resident rotations. Each week a different topic is covered. Residents are expected to review 2 to 3 relevant preselected research and review articles as well as pages in the AAOS Comprehensive Orthopaedic Review book and selected OITE review questions. Articles are selected in attempt to provide evidence based answers to clinically applicable problems. The goal of each session is to familiarize the residents with each topic and provide a working knowledge of the issues related to the topic as well as to prepare them for OITE examination. Each resident owns the AAOS Comprehensive Orthopaedic Review book and the articles are posted on our SharePoint site for easy access.

### B. Geriatric Orthopaedics

On Wednesday morning a two-part didactic session is held. At 7:20 am Dr. Perry Colvin, a geriatrician and head of the hip Fracture Service leads a discussion of geriatric topic. This is organized around a ten week schedule and is meant to cover geriatric issues that are commonly seen on the rotation. Following the didactic session, Dr. Colvin and Dr. Mears lead a team round with the resident and mid level providers. We see one or two patients being co-followed by the geriatric service. The geriatric issues are explored and the patient examined. This serves to reinforce the teaching in didactic conference and to apply principles and exam techniques to practice.

The didactic sessions have a corresponding PowerPoint presentation that is available on the SharePoint site for review prior to the session. Work on this curriculum is on-going as part of a grant from the American Geriatric Society with Dr. Stephen Kates at the University of Rochester.

Lecture topics include

- Delirium in the postoperative elderly patient

- Postoperative medical care of the geriatric fracture patient

- Physiology of aging

- Presurgical evaluation of the hip fracture patient

- Cardiac disease in the hip fracture patient

- Diabetes management in the hip fracture patient

- DVT prophylaxis in the hip fracture patient

Pressure sores and prevention

Nutrition in the hip fracture patient

Palliative care and hospice

#### C. Trauma conference

On Friday morning from 7:15-7:45 AM we conduct a trauma conference is conducted with all of the residents. During this session the residents present on a trauma topic that is preselected. A different fracture or topic with a key review article is presented by the resident. This is accompanied by readings from the AAOS Comprehensive Orthopaedic Review book and selected OITE review questions. The articles are kept on our SharePoint site for easy access.

#### D. Sports Medicine

Didactic session is held weekly for the PGY-5 Sports Rotation with Dr. Bashir Zikria and Dr. John Wilckens who are the rotation mentors. The AAOS OKU Sports Medicine 4 is the resource. The rotation is structured as a 10-week rotation.

During the 10-week rotation, residents are asked to read two chapters a week as outlined below for discussion with the assigned mentor. Dr. Zikria will review the chapter on Tuesday morning before the operating room and Dr. Wilckens on Wednesday before Navy training room. It is also expected that, chapters covering common sports injuries will need to read to prepare for scheduled surgeries and clinics.

Week 1	Chapter 24	Concussions	Wilckens
	Chapter 25	Cervical Spine	Zikria
Week 2	Chapter 16	Foot Disorders	Wilckens
	Chapter 17	Ankle Injuries	Zikria
Week 3	Chapter 15	Overuse Injuries Lower Extremity	Wilckens
	Chapter 11	Patellofemoral Joint	Zikria
Week 4	Chapter 26	Tendon Overuse Pathology	Wilckens
	Chapter 28	Nonsurgical Treatment Tendinopathy	Zikria
Week 5	Chapter 29	Surgical Treatment Tendinopathy	Zikria
	Chapter 34	Infectious Disease in the Athlete	Wilckens
Week 6	Chapter 7	Groin and Pelvic Injuries	Wilckens
	Chapter 8	Hip Joint Injuries	Zikria
Week 7	Chapter 3	Acute Elbow Injuries	Zikria
	Chapter 6	Hand/Wrist Injuries	Wilckens

Week 8	Chapter 36	Osteochondroses in the Young Athlete	Zikria
	Chapter 38	Spondylolysis	Wilckens
Week 9	Chapter 33	Cardial Issues	Wilckens
	Chapter 35	Heat/Hydration	Zikria
Week 10	Chapter 41	Youth Throwing Injuries	Zikria
	Chapter 22	Core Stabilization	Wilckens

## 6. Schedule

The schedule is printed weekly and organized by the fourth year resident. Each resident is assigned to activities each day and the schedule is distributed the Friday before so that residents can pre-read about cases. Each resident is assigned to at least two clinic sessions per week.

**JHBMC Department of Orthopaedic Surgery  
Provider Schedule and Location Matrix  
Effective January 1, 2010**

DAY	GOR	GOR # - TIME	BAYVIEW OFFICE PRACTICE	GS = Greenspring WM = White Marsh	ADMIN DAY
MONDAY	Mears	1 (7:30-7:00)	FX Clinic (AM) Lebowitz Trice (5 <sup>th</sup> )	Nayfeh – WM	
	Johnson	2 (7:30-7:00)		Wilckens - OD Trice – GS (1 <sup>st</sup> , 3 <sup>rd</sup> ) CL (2 <sup>nd</sup> , 4 <sup>th</sup> )	
TUESDAY	Mears	1 (7:30-7:00)	Lebowitz (1 <sup>st</sup> & 3 <sup>rd</sup> AM) Burton	Johnson –GS (2 <sup>nd</sup> & 4 <sup>th</sup> )	
	Nayfeh (24 Hr)	2 (7:30-5:30)	Vitello	WM (1 <sup>st</sup> , 3 <sup>rd</sup> , 5 <sup>th</sup> )	
	Lebowitz	7 (8:00-12:00) (3 <sup>rd</sup> wk only)		Byank – WM Wilckens - WM	
	Trice	9 (7:30-3:30)			
WEDNESDAY	Nayfeh (24 Hr)	1 (7:30-7:00)	Vitello (AM) Lebowitz(AM)	Johnson – WM ASC	Vitello (PM)
	Trice	2 (7:30-5:30)	Byank Davis (AM)	Wilckens (2 <sup>nd</sup> & 4 <sup>th</sup> PM) WMASC Mears – GS (1 <sup>st</sup> & 2nd) Mears – WM (3rd)	Wilckens (AM)
THURSDAY	Wilckens	2 (9:00-5:30) ~ 1 <sup>st</sup> ,3 <sup>rd</sup> , 5 <sup>th</sup>	Lebowitz (AM)	Nayfeh Odenton	
	Zikria	WMASC (7:30-3:30) ~2 <sup>nd</sup> & 4 <sup>th</sup>	Vitello Johnson – (1 <sup>st</sup> , 3 <sup>rd</sup> 5th) Nayfeh (1st)	(2 <sup>nd</sup> ,3 <sup>rd</sup> ,4 <sup>th</sup> & 5 <sup>th</sup> )	
		2 (9:00-5:30) (2 <sup>nd</sup> & 4 <sup>th</sup> )	Byank (PM) – PF Residents (PM) Mears/Smith (2 <sup>nd</sup> ,3 <sup>rd</sup> ,4 <sup>th</sup> , & 5 <sup>th</sup> ) Hip FX (PM) 1 <sup>st</sup> –Nayfeh 2 <sup>nd</sup> -5 <sup>th</sup> – Mears	Trice – (WM)	
FRIDAY	Johnson	1 (7:30-3:30) (1 <sup>st</sup> ,3 <sup>rd</sup> , 5 <sup>th</sup> )	Wilckens		Mears
	Byank (24 Hr)	2 (7:30-5:30)	Residents (AM) Lebowitz Vitello Smith Lemma (2 <sup>nd</sup> ) Khanna (4 <sup>th</sup> )		Trice  Nayfeh

KEY = Amber (Zikria) – 410-847-3643

Jerry (Nayfeh, Hip FX) x0-4190

April (Byank - x0-6613, Chief Residents - x0-1504)

Louisa (Vitello - x0-0455, Lebowitz, FX

Clinic x0-4556, Spine x0-5391)

Connie (Johnson) - 443-442-2084

Miriam (Wilckens) - x0-0456

Charlene (Trice) - x0-0452

Wendy / Tammy (Mears, Smith, Hip FX) - x0-0101, x0-9253

Dr. Johnson (2<sup>nd</sup> & 4<sup>th</sup> Friday's OFF)Dr. Byank if OFF on Monday's