

# Adult Orthopedic and Fracture/Trauma Rotation at Queen's PGY-5

## Description of Rotation

The Queens Medical Center (QMC) is a level II trauma center which services multisystem trauma patients from our entire state, via a trauma hotline and air ambulances. The PGY-5 residents are on the trauma service at QMC for six months of their PGY-5 year. They are an integral part of the trauma service, scrubbing on complex trauma cases, running the post-trauma Queen Emma Clinic, managing Operating Room assignments for all orthopedic residents at Queens. While on service, the chief resident also performs significant teaching, administrative and systems based practice, and practice based learning responsibilities (Morbidity and Mortality conferences, back-up coverage for PGY-1 resident in the emergency department, leading conferences, assisting in journal club, etc.). Four compensated faculty members participate in trauma call. These faculty attendings supervise and scrub with residents on trauma cases. Residents also have two one half-day follow up trauma clinics per week, one in the Queen Emma Clinic, and one in the faculty traumatologist's private office. Patient volume is largest in the attendings' clinics. When on call the chief orthopedic resident interacts with the general surgeon(s) on call, backs up "interns" on call, directs pre-operative, intra-operative and post-operative care for trauma patients with mandatory attending coverage, including in the SICU. Every effort is made to have resident follow their patients in the outpatient setting, within the 80 hour work week rules. Residents have excellent trauma case volume and case mix including all multisystem trauma patients admitted to the QMC. Chief residents will perform more complex pelvic and multiple long bone fracture surgery, during their six months as chief. Participation in adult reconstructive surgical patient care is an integral part of the rotation as well.

Length: 6 months of PGY-V year  
Location: Queen's Medical Center, Queen Emma Clinic, Faculty Attendings' Offices  
Primary Supervisors: Robert Atkinson, M.D. (Office: 521-8128)  
Morris Mitsunaga, M.D. (Office: 522-9633)  
Patrick Murray, M.D. (Office: 973-3917)  
Kevin Christensen, M.D. (Office: 522-9633)  
J. Kimo Harpstrite, M.D. (Office: 536-2261)

Institutional Site Coordinator: Dr. Patrick Murray

## Patient Care

### Competency

Residents must be able to provide patient care that is compassionate, appropriate, patient-centered and effective for the diagnosis treatment of orthopaedic problems and the promotion of health. Significant leadership in running a patient centered service is expected. Chief Residents are expected to:

### Objectives

1. Demonstrate caring and respectful behaviors (verbal and non-verbal) with patients and families
2. Elicit appropriate patient medical history information using effective questioning and listening skills
3. Be able to perform a comprehensive orthopedic evaluation and physical exam for trauma patients admitted to QMC, including cases involving multisystem trauma, pelvic trauma, SCI, cervical and thoracolumbar spinal injury, and appendicular long bone injuries.

4. Be able to formulate a medical problem list, with prioritization of medical issues, to facilitate the development of treatment plans for multisystem trauma patients.
5. Perform accurate and careful triage of trauma patients and coordinate their plan of care with attending faculty.
6. Learn to formulate surgical treatment goals for long bone and pelvic fractures, and understand prognoses for recovery in the multisystem trauma patient.
7. Learn to prevent intra-operative technical complications during the treatment of long bone injuries, pelvic surgery, and complex reconstructive (cold trauma) surgery.
8. Make an early diagnosis and provide prompt treatment of acute compartment syndromes in the upper and lower extremities, with direction/instruction being given to junior residents.
9. Learn to integrate the clinical presentation with imaging data to make decisions regarding operative care.
10. Be able to assess postoperative progress of trauma patients (including SICU course), arthroplasty patients, and patients undergoing elective reconstructive bone and joint surgery.
11. Recognize, diagnose and treat postoperative complications, including wound infections and skin loss, DVT, PE, and shock.
12. Learn to prescribe and/or consult with allied health specialists in PT, OT, Vocational counseling, psychiatry, and SW as appropriate, and coordinate service referrals to all allied health personnel.
13. Be able to effectively counsel patients and families and caregivers about the plan of care.
14. Be a vital part and leader of the inpatient team under the supervision of attending faculty.
15. Be aware of, identify, and provide weight-bearing precautions and postoperative goals for therapists.
16. Recognize and diagnose peripheral nerve and vascular injuries and provide counseling regarding recommended treatment.
17. Be able to diagnose and treat common joint dislocations in the emergency department setting (e.g., shoulder, elbow, hip, ankle), and give instruction to and monitor clinical acumen of junior level residents on trauma call.
18. Learn to properly insert Steinmann pins for traction--including proximal tibia, distal femur, calcaneal and olecranon pins.
19. Learn to properly diagnose (by exam and evaluation of imaging studies), and discuss the methods of treatment for common long bone and periarticular fractures, and injuries to the hand, foot, spine and pelvis.
20. Be able to diagnose and manage all open wounds, including bites, and wounds associated with open fractures. Understand and use free flap coverage principles when appropriate, with necessary consultants.
21. Learn to apply well molded casts, splints, and dressings for most orthopedic conditions. (for example, long and short arm and leg casts/splints, R. Jones dressing).
22. Perform joint aspirations for the ankle, knee, hip, wrist, elbow and shoulder, obtain appropriate lab analysis of aspirate, assess laboratory results, and formulate appropriate treatment recommendations.

## **Medical Knowledge**

### **Competency**

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

### **Objectives**

1. Define and teach the classification systems for long bone and periarticular injuries.

2. Discuss and understand and teach fracture physiology and the biomechanics of long bone injuries.
3. Describe the treatment principles of fracture fixation, including screw and plate biomechanics, principles of ring fixateur use, and indications for the use of locking plate(s).
4. Define the physiology of compartment syndrome, relevant anatomy, and operative approaches. Assist junior level residents in improving their knowledge re compartment syndrome.
5. Promptly identify common post operative complications and discuss their prevention.
6. Complete cadaver dissection and cite common surgical exposures used in the fixation of long bone injuries.
7. Define the characteristics of various joint fluid aspirates (inflammatory, infectious, etc).
8. Describe common mechanical/technical errors in the fixation of long bone and periarticular and pelvic fractures.
9. Understand bone metabolism, including disease states of osteoporosis and osteomalacia,
10. Cite levels of evidence in the orthopedic case-driven medical literature.
11. Understand and apply biomedical statistics in evaluation of the medical literature.
12. Achieve a score of the 50% 'ile or better in OITE.
13. Describe the clinical presentations and appropriate treatments for various common tendonopathies, and ligament injuries of the shoulder, elbow, knee and ankle.
14. Differentiate between patients who have non operative versus operative fractures and conditions.
15. List the principles of CRPS and other pain syndromes not typically helped by surgery.
16. Define and discuss soft tissue injuries of the knee and shoulder.
17. Classify various nerve injuries, with prognosis, and appropriate treatment strategies.
18. Describe and teach the physiology of wound and fracture healing.
19. Assess and apply the medical literature to help prevent DVT and PE in the orthopedic patient.
20. Participate in at least 1 board review course.

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

### **Competency**

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life long learning. Residents are expected to develop skills and habits to be able to:

### **Objectives:**

1. Evaluate one's own knowledge, incorporating feedback from others.
2. Modify self-directed learning appropriately, including feedback provided from the OITE results. Lead OITE review sessions.
3. Appraise and assimilate evidence from scientific studies to enhance patient care, especially as it relates to trauma and reconstructive diagnoses and treatments
4. Effectively use information technology to access and manage patient information

5. Effectively use information technology and other resources to support one's own ongoing self-education (DVDs, CDs, Vumedi etc)
6. Lead discussions concerning patient care with other health care professionals, attendings, including trauma team and consultants
7. Attend and participate and take a leadership role in teaching conferences and rounds
8. Produce a pre-rotation list of specific goals and objectives for each rotation; share these goals and objectives with the Program Director and faculty preceptors; track progress towards achieving these goals and objectives; and report on the accomplishments.
9. Use computer based portfolio to track and catalogue operative cases and "technical pearls", especially for complex cases.

## **Systems Based Practice**

### **Competency**

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as be able to effectively call on other resources in the system to provide optimal health care. Residents are expected to:

### **Objectives**

1. Collaborate with and maintain appropriate professional attitudes and behaviors toward other medical professionals and allied health personnel
2. Assess how one's own actions affect others, especially in the trauma service setting. Understand how mentoring influences junior residents.
3. Integrate, and lead in the care of trauma and reconstructive patients on service.
4. Use diagnostic and therapeutic procedures appropriately and judiciously
5. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of patient care
6. Provide, and collate data, and lead M&M conferences to positively affect patient care. Show supporting literature of best practices.
7. Participate in clinical pathways designed to improve patient outcomes
8. Serve as patient advocates in dealing with system complexities
9. Serve as patient advocates for quality patient care
10. Work effectively with other services, health care agencies, and case managers
11. Work to improve the system of medical care at Queens Medical Center

## **Professionalism**

### **Competency**

Residents must demonstrate commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to:

### **Objectives**

1. Exemplify and display an observable respect and compassion toward patients
2. Exemplify reliability, punctuality, integrity, and honesty
3. Accept responsibility for one's own actions and decisions

4. Apply sound ethical principles in medical practice, including issues of patient confidentiality, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies
5. Consider the effects of personal, social, and cultural factors in the disease process and patient management
6. Demonstrate non-judgmental sensitivity and responsiveness to the age, culture, disability status, and gender of patients and colleagues.
7. Show ethical/professional leadership by example.

## **Professionalism**

### **Competency**

Residents must demonstrate commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to:

### **Objectives**

8. Exemplify and display an observable respect and compassion toward patients
9. Exemplify reliability, punctuality, integrity, and honesty
10. Accept responsibility for one's own actions and decisions
11. Apply sound ethical principles in medical practice, including issues of patient confidentiality, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies
12. Consider the effects of personal, social, and cultural factors in the disease process and patient management
13. Demonstrate non-judgmental sensitivity and responsiveness to the age, culture, disability status, and gender of patients and colleagues

## **Interpersonal and Communication Skills**

### **Competency**

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

### **Objectives**

1. Establish trust and maintain rapport with patients and families, residents and attendings.
2. Complete dictations and chart notes in a timely manner (monitored by medical records department and Program Director)
3. Discuss diagnoses, prognoses, and treatment options clearly and accurately to patients, and attendings/consultants.
4. Synthesize information and present clinical and diagnostic information clearly to colleagues.
5. Utilize effective listening skills
6. Communicate and interact with staff/team in respectful, responsive manner
7. Promote teamwork, and coordinate the work up of orthopedic trauma patients

### **Teaching Methods**

PGY-5 residents on the Adult Orthopaedics and Fracture/Trauma service function with a 1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences.

### **Assessment Method (residents)**

Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; the 360 degree evaluation process (using faculty, nurse managers, residents and patient evaluations) will take place at the end of each quarter. Semiannual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

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### **Assessment Method (Program Evaluation)**

How do you evaluate whether this educational experience is effective?

Semiannual evaluations by P.D. and faculty. Annual resident confidential evaluation of program, and its rotations.

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### **Level of Supervision**

How is the resident supervised on this rotation? Compensated faculty (4), and P.D.