

***General Goals and Objectives for the Orthopaedic Surgery Resident  
McGill Orthopaedic Trauma (MGH)***

***The resident must show appropriate-for-level mastering of the CanMed qualifications of medical expert, communicator, collaborator, manager and scholar. The resident must show appropriate-for-level professional conduct. The resident must assume a graduated level of responsibility throughout the duration of the training program. Completion or recertification of A.T.L.S. course is strongly recommended prior to entering the PGY-2 training year.***

**PGY-1**

This level of formal training, in concert with appropriate clinical exposure should result in demonstrable competence in the following areas: Triage and establishment of treatment priorities in the multiply injured patient, technical competence in the following: upper airway obstruction/cricothyroidectomy, endotracheal intubation, needle and chest tube insertion, peripheral venous cut down, subclavian and internal jugular puncture, central venous monitoring and chest wall, pleural space and lung injuries. Competence in non-operative management of major intra-abdominal injuries, assessment of major blood loss, renal failure, metabolic and electrolyte imbalance should be attained. Non-surgical management of ileus, bowel obstruction, diaphragmatic hernia and haemoperitoneum are also important skills.

**PGY-2**

***Expected to learn the following concepts:***

Initial assessment and management of trauma.

General knowledge: Definition and classification of fractures, joint injuries, muscle/tendon injuries, vascular and neurological injuries. Biomechanics and mechanisms of injuries.

Appendicular and axial musculoskeletal anatomy. Fracture healing (basic knowledge clinical and radiological assessment.) Complications of fractures/dislocations. Indications and principles of management of closed reduction of fractures and dislocations. Indications for open reduction of fractures and dislocations. Act as second assistant on open fracture reductions. Show competence in closed reduction techniques of long bone and intra-articular fractures.

**PGY-3**

***Expected to learn and be able to teach the following concepts:***

Initial assessment and total management of major multisystem trauma. General knowledge: Definition and classification of fractures, joint injuries, muscle/tendon injuries, vascular and neurological injuries. Biomechanics and mechanisms of injuries. Appendicular and axial musculoskeletal anatomy, fracture healing (basic knowledge clinical and radiological assessment.) complications of fractures/dislocations., indications and principles of management of closed reduction of fractures and dislocations, indications for open reduction of fractures and dislocations. Act as first or second assistant on open fracture reductions. Show competence in closed reduction techniques of long bone fractures. Surgical management of simple fractures: ankle, hip, olecranon.

## **PGY-4**

### ***Expected to learn and be able to teach the following concepts:***

Assessment and management of multiple extremity injuries. Establishment of treatment priorities in the multiply injured patient. Surgical management of all open and closed extremity fractures excepting highly complex injuries associated with vascular compromise. Surgical management of all open and closed joint injuries excepting highly complex injuries associated with vascular compromise. Application of external fixators for pelvic and extremity fractures. Open reduction of simple acetabular fractures. Non-operative management of cervical, thoracic and lumbar spine fractures and fracture dislocations. Knowledge of surgical approaches, principles of fixation and fusion in spinal injuries.

Pre-operative planning: Demonstrate the ability to perform a detailed pre-operative plan for the above-mentioned fractures, including positioning, instruments and implants, surgical approach and reduction techniques.

## **PGY-5**

### ***Expected to learn and be able to teach the following concepts:***

Demonstrate competence in the management of the multiply injured patient with complex open and closed fractures. Surgical management of musculoskeletal metastatic disease of axial skeleton. (Rational for surgical/non-surgical management, systemic treatment.) Spinal injuries: Assessment, management and participation in the surgical technique of fracture reduction, stabilization and neural decompression. Pelvic injuries: Assessment, management and surgical treatment of pelvic and acetabular fractures. Soft tissue injuries: Demonstrate a knowledge of the principles and methods of soft tissue coverage and vascular reconstruction. Demonstrate competence in surgical revision of complex fractures, malunions and nonunions.

Pre-operative planning: Demonstrate the ability to perform a detailed pre-operative plan for the above-mentioned fractures, including positioning, instruments and implants, surgical approach and reduction techniques.

*Revised - November 2018*

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**PGY 1**

- Introduction to Orthopedics
- What is the Orthopedic surgeon's role in the management of the trauma patient

**Medical Expert**

- ATLS
- Pathophysiology of trauma
  - Appropriate laboratory tests
- Anatomy
  - Appropriate imaging modalities
  - Diagnosis of life threatening conditions in Orthopedic trauma
- Technical skills
  - Endotracheal intubation/ cricothyroidotomy
  - Needle and chest tube decompression of pneumothorax
  - Central line insertion- jugular/ subclavian
  - Basic casting of common fractures with supervision

**Communicator**

- Extract relevant aspects of the clinical history as it pertains to the Orthopedic problem.
  - Complete but not redundant histories
- Effectively communicate with other health care professionals patients and family members

**Collaborator**

- Understands the place of other health care services within the scheme of trauma care
- Appropriate consultation, delegation and follow-up

**Manager**

- Effective use of digital technology (PACS, OACIS etc)
- Cost effective investigation and management
- Organized, thorough

**Scholar**

- Basic text book knowledge of common orthopedic injuries
- Ability to critically evaluate basic literature
- Initiate a research project

**Professional**

- Displays and promotes the highest level of patient care.

- Acts with respect and demonstrates sensitivity to all patients and co-workers
- Recognizes his/her limitations and knows when to ask for help.

## **PGY 2**

- Focus on the Orthopedic injury
- Introduction to basic fracture care

### **Medical Expert**

- Pathophysiology of injury and repair of bone and soft tissues
- Knowledge of surgical exposures to basic fractures
- Proficient in ATLS and MSK exam
- Classifications of common fractures
- Biomechanics of internal fixation (AO course)
- Criteria for internal fixation of common fractures
- Management of non-operative cases- closed reduction/ follow-up
- Second assist on surgical cases

### **Progression in responsibilities**

- Communicator
- Collaborator
- Manager
- Health Advocate

## **PGY 3**

- Complete management of basic orthopedic trauma injuries
  - Ankles, wrists, long bones
  - With supervision

### **Medical Expert**

- In depth knowledge of common and simple fractures
  - Investigation and treatment
- Clinical application of knowledge gathered as PGY2
  - Set up, surgical approach, follow-up

### **Manager**

- Supervisory role of PGY1&2 residents and students
- Delegates to junior residents effectively

### **Progression in responsibilities as**

- Communicator
  - Should have sufficient knowledge to discuss risks, complications and outcomes of basic orthopedic procedures
- Collaborator
- Health Advocate

## PGY 4

- Management of basic orthopedic injuries with minimal supervision and complex problems with some supervision
- Teaches the juniors

### Medical Expert

- In depth knowledge of soft tissue and bone injury
- Detailed anatomical knowledge of common and less common surgical approaches
- Ability to come up with a surgical plan and execute the plan for long bone fractures and most articular fractures
- Proficiency with operative set up and execution of basic procedures with minor staff supervision

### Manager

- Takes active role in the education and evaluation of the junior residents
- Delegates effectively and fairly
- Manages/ triages the OR trauma list effectively with staff supervision

### Scholar

- Learns from staff and PGY5
- Teaches the junior residents actively on a daily basis at ward rounds

### Professional

- Leader/ organizer of the trauma service and junior residents

### **Progression in responsibilities as**

- Communicator
- Collaborator
- Health Advocate

## PGY 5

- Manages simple and complex fractures and dislocations with little staff supervision
- Teaches junior residents

### Medical Expert

- In depth knowledge of all surgical approaches to common long bone and articular fractures
- Performs most surgical approaches
- More complex approaches or specialized techniques with minimal staff supervision
- First assist in acetabular reconstruction and anterior spine approaches

- Good knowledge of the literature
- Detailed knowledge of current concepts
- Formulate detailed operative plans and execute them for all long bone and articular fractures

### **Manager**

- Supervises junior residents
- Guides PGY4's
- Organizes educational events
- Delegates effectively and fairly

### **Scholar**

- Teaches in the operating room and in the clinical setting
- Evaluates junior residents

### **Professional**

- Takes direct responsibility for patient care
- Offers support where needed
- Demonstrates good judgement and honesty

### **Progression of responsibilities as**

- Communicator
- Collaborator
- Health Advocate
- To the level of Orthopedic Surgeon

*Revised – November 2018*