



## AOTS Guidelines for Emergency Orthopaedic Surgery during the COVID-19 pandemic

A sound, ethical and principle-based approach will be required during the COVID-19 pandemic. During the time of COVID-19 surgical care will be challenged. There will be a risk for healthcare workers acquiring COVID-19 from infected patients by aerosolization, which will mean strict attention to the use of PPE and appropriate anaesthetic measures. Timely treatment and discharge will also be a priority in order to ensure the resources are used in the most efficient means possible. Timely treatment and appropriate decision making may mean orthopaedic surgeon utilise abbreviated treatment protocols will be preferred, in order to ensure a maintenance of access to hospital inpatient resources and beds. Non operative treatment treatments will confer advantage over operative treatments if similar outcomes, or even slightly downgraded outcomes are expected. These are the principles of operating in the austere environment, and of husbanding resources. As surgery may take twice as long in full PPE, hospital resources may, and will, be deployed elsewhere and health care workers infections there will be a reduced capability and operating room resources will be rationed. Choose operation wisely. Consider alternative treatments. Consider whether reconstructive work should be delayed until after the effect of the COVID-19 pandemic peaks and/or resolves. Protect the patients, your staff and yourself.

### Emergency

Requires immediate action; life threatening or permanent limb injury.

### Priority 1 – requires care in 1-4 hours

- Patients in haemorrhagic shock
- Patients septic shock
- Joint Dislocations
- Open or Closed Fractures with neurovascular compromise
- Open Joint fractures
- Cauda Equina Syndrome

**Life and Limb Threatening Injuries:** patients with multi-trauma and pelvic and acetabular fractures, with major haemorrhage, open fractures, compartment syndrome and the threat of exsanguination require emergency resuscitation and management.

**Amputations:** Early amputation in patients where limb salvage has an uncertain outcome may be more appropriately treated with early amputation

**Debridements:** Consider early local flaps and accepting deformity in order to minimise the number of returns to theatre.

**State Trauma Guidelines:** Adherence to trauma guidelines will continue to ensure patients with multi-trauma are managed in the most efficient and effective facilities.

**Priority 2 – requires care 4-12 hours (all can be Priority 1 if patient septic or in shock)**

- Open Fractures with no neurovascular compromise
- Deep and extensively contaminated lacerations
- Patients with septic native or prosthetic joints
- Paediatric and Adult displaced articular Fractures including supracondylar fractures.
- Infected Fractures
- Paediatric septic arthritis and osteomyelitis with subperiosteal collection.

**Priority 3(a) – requires care 12-24 hours**

- Open fractures with no neurovascular compromise
- Ongoing post-operative wound haemorrhage
- Significant soft tissue deficit
- Unstable Spinal Fractures
- Paediatric Joint Dislocations
- Paediatric Fractures with neurological compromise
- Paediatric Spica for Extra articular Femoral Fractures
- Paediatric and Adult Femoral and Tibial Fractures

**Fragility Fractures:** Fragility fractures of the hip, femur and tibia remains a surgical priority over the first 48 hours. Ensure patients may be able to fully weightbear at the end of surgery to facilitate early discharge.

**Priority 3(b) – requires care 24 hours-1 week**

- **Complex Fractures:** Early Planning and surgical treatment to facilitate early discharge
- **Simple Periarticular Fractures:** Consider day-case treatment for simple fractures
- **Upper Limb Fractures:** Consider day-case treatment

### **Trauma Management Principles**

- Dislocations of native and replaced joints should be reduced in the Emergency Department whenever possible. Should the reductions be stable, then patients should be discharged with follow-up.
- Upper Limb Injuries may be managed non-operatively, with the recognition that delayed reconstructions may be required.
- Acute Ligamentous injuries of the knee may be managed in a brace non-operatively rather than early reconstruction.
- Non contaminated penetrating injuries of the limbs with no underlying neurological or vascular injury may be debrided and sutured in the Emergency Department with appropriate follow-up.
- Abscesses in patients without systemic sepsis may be incised and drained in the Emergency Department with appropriate follow-up

### **Trauma Volume**

- Low energy/fragility fractures will continue to occur at a similar incidence. There may be an increase depending on the effect of COVID-19 on the level of supervision.

- Higher energy trauma is likely to decrease in incidence however will continue to occur as bottle shops will remain open, random breath tests had ceased and people having more recreational time.
- Cases related to interpersonal/domestic violence is also likely to remain at a similar incidence, or even increase during social isolation
- Major trauma in-hospital mortality and elderly hip fracture 30-day mortality are both higher than COVID-19 in even worst-case scenario countries. Not securing these essential services will result serious adverse outcomes during the pandemic due to otherwise preventable mortalities.

### **Emergent (Semi-elective)**

Requires care over the next three months

#### **Category 1**

- Fracture non-union treatment
- Nerve Decompression for entrapment neuropathy

#### **Category 2**

- Avascular Necrosis

#### **Category 3 Elective Surgery (delayed until the end of the Pandemic)**

- Total Joint Replacement Surgery for reasons other than trauma
- Revision Arthroplasty except for Periprosthetic Fractures
- Anterior or Posterior Cruciate Ligament Reconstructions
- Osteotomies
- Arthroscopic or open surgery to joints for reasons other than infection or locked joint
- Bunions
- Hammer/Claw/Mallet Toes
- Joint Stabilisation surgery for recurrent instability
- Dupuytren's Contracture Release

The list of Category 3 is not exhaustive. It provides an indication of the types of procedures which should be delayed. Please choose wisely

The guidelines may be updated as more information become available.

### **References**

Australia Health Ministers; Advisory Council: National Elective Surgery Urgency Categorisation Guideline April 2015.

British Orthopaedic Association. Management of patients with urgent orthopaedic conditions and trauma during coronavirus pandemic

Australian Commission on Safety and Quality in Health Care. Clinical Care Standards. Hip Fracture Care Clinical Care Standard September 2016 Joint Stabilisation surgery for recurrent instability

Potential Impact of COVID-19 in Injury Patterns Presenting to Health Services in Australia.

**Marinis Pirpiris**

**AOTS President**