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ORTHOPAEDIC ON-CALL DECISION TREE

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Orthopaedic cases which may benefit from an orthopaedic traumatologist/higher level of care:

- High energy pelvic ring fractures (excluding same height falls)
- Any acetabular fracture (does not include **a nonoperative acetabular fracture or a superior/inferior root fractures of rami**)
- Irreducible joint dislocation
- Limb injury with neurovascular compromise (attempt fracture alignment prior to transfer)
- Compartment syndrome associated with fracture. Fasciotomy should be performed prior to transfer.
- Traumatic amputation (proximal to wrist and ankle)
- Open fractures (femur, tibia, mangled extremity) without orthopaedic surgery availability to perform debridement/irrigation and provisional external fixation or even definitive fixation (excluding fingers and toes)
- Closed femur fractures if no orthopaedic surgeon available – try to put the patient in 20 lb skeletal (or Bucks) traction prior to transfer if possible
- Displaced femoral neck fractures (in patients <65) and [displaced or open] talar neck fractures
- Closed fractures with severe soft tissue compromise (i.e. crush injuries which can result in delayed compartment syndrome and/or significant tissue necrosis)
- Displaced/comminuted periarticular fractures (large joints)

Ideally:

- Orthopaedic surgeon from transferring facility should examine patient and review radiology images prior to deciding on whether patient needs to be transferred
- The transferring Ortho surgeon should communicate with both the accepting Orthopaedic surgeon and accepting General Trauma surgeon
- Pelvic binders or pelvic sheets should be placed prior to transfer for open book pelvic fractures ONLY for patients with hemodynamic instability – these binders should be centered on the Greater Trochanters to maximize their effectiveness. They are not needed for lateral-compression type pelvic fractures.

<p>Adult Open Fracture Guidelines</p> <p>Antibiotics:</p> <ul style="list-style-type: none"> • Cefazolin for low Grade open fractures (Grade I) • Add Gentamycin for high Grade open fractures (Grade III or highly contaminated grade II) • Add PCN if you suspect dirt (barnyards, soil, etc.) • Antibiotics should be ordered with scheduled repeat doses (not just one time doses) • Update tetanus 	<p>Grades I, II, III A Grades III B & C</p>	<p>If the patient has a sensitivity to Cefazolin, Clindamycin is the second antibiotic of choice.</p>
<p>Wound Washouts</p> <ul style="list-style-type: none"> • All visible debris should be removed. • Document the size, shape, and location of the wound • Cover wound with a saline soaked dressing • Apply splint or traction as required • Bedside Washouts for interfacility transfers (low pressure copious irrigation, NO pulse lavage) • Do not delay interfacility transfers for bedside washouts 	<p>Ideally photographs of the wound should be taken</p> <p>Realign/reduce limb</p> <p>Definitive treatment is debridement done in the operating room</p> <p>Rarely there are instances when a provisional washout may be considered definitive treatment</p> <p>These situations are limited to open fractures in the forearm and certain low velocity GSWs.</p>	

<p>Time to OR</p> <p>The time to the operating room remains a controversial topic. Many hospitals use a 6-hour timeframe, but there is no research showing this affects outcome.</p> <p>There is one article that shows a 13 hour timeframe is beneficial (J Orthop Trauma, 2002 Aug; 16(7): 484-90. The effect of time to definitive treatment on the rate of nonunion and infection in open fractures. Harley bj, Beaupre LA, Jones CA, Dulai SK, Weber DW).</p> <p>A recent study of 315 patients with open fractures in JAMA (2015; 150(4):332-336) demonstrated no increased incidence in infection if I&D was performed within 24 hours.</p> <p>Another study shows a difference between upper extremities and lower extremities (higher infection in > 8 hour delay in LE but not UE) – J Trauma Acute Care Surg. 2014 May; 76(5): 1201-7</p> <p>For this reason, we make the following recommendation:</p> <p>Patients <u>without</u> life-threatening injuries:</p> <ul style="list-style-type: none">• To OR within 13 hours with (i.e. Grade I, II, maybe IIIA)• ASAP with more significant soft-tissue injury (IIIB/C)		
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<ul style="list-style-type: none"> • Consideration should be given for severity of injury, fracture Grade, degree of contamination, comorbidities such as diabetes. <p>Patients <u>with</u> life-threatening injuries:</p> <ul style="list-style-type: none"> • Multi-disciplinary approach to prioritize care (i.e. life before limb) • If patient has tibial and/or femoral fracture (requiring IMN) with closed head injury/pulmonary injury, communicate with General and/or Neuro team re: timing of • External fixation always excellent option to stabilize until patient stable or at higher level of care (ideally converted to definitive fixation within 10 days) <p>Although a 13-hour timeframe is recommended, hospitals should continue using their current audit filter to trend delay reasons and analyze appropriateness of care.</p>		

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