SUBJECT: Orthopedic Trauma Clinical Practice Management Guideline

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PURPOSE: To facilitate appropriate and timely management of patients with musculoskeletal injury.

DEFINITIONS:
Open fractures can be classified into three categories:

Grade I - Open fracture with a skin wound less than 1 centimeter long and clean with minimal soft tissue loss or injury

Grade II - Open fracture with a laceration more than 1 centimeter long without extensive soft tissue damage, tissue loss, or contamination

Grade III - Extensive soft tissue damage including muscles, skin, and neurovascular structures, or open fractures with arterial injury and ischemia

GUIDELINES:
Open Fractures:

I. Initial Management:

1. Sterile dressing with normal saline-soaked gauze
2. Irrigation of gross contamination at discretion of the ORTHO attending
3. Open fractures should be transferred to the OR on an urgent basis (within 24 hours)
4. Initiate antibiotic coverage as soon as possible to injury (within 1 hours of time of injury)
   - Prior to transfer to UAMS-Ideally, antibiotics should be given at OSH prior to transfer, in addition to, appropriate splinting, reduction and wound coverage.
   - Within 1 hour of arrival to UAMS for patients arriving from the scene (Pre-op)
II. Antibiotics:
   A. Open Fractures
      1. Grade I and II
         a. Zosyn 3.375g (subsequent dosing based on renal function)
         b. Penicillin allergic: Clindamycin 900 mg IV q8h
         c. Obese patients (> 125% ideal body weight) will be dosed based on a dosing weight (Actual Body Weight-IBW x 0.4 + IBW = Dosing weight)
            Ideal Body Weight- Males: 50 kg + 2.3 kg per inch above 5 feet
            Female: 45.5 kg + 2.3 kg per inch above 5 feet
      2. Grade III
         a. Zosyn 3.375g q8 hours (extended interval dosing)
         b. PCN allergic (Clindamycin 900mg IV q8h, Gentamicin 6mg/kg IV now and q24h)
      3. Penicillin 2 million units IVPB every 4 - 6 hours should be added for crush or farm/soil related injuries.
      4. Note-Fluoroquinolones may have a detrimental effect on fracture healing.
      5. Antibiotics with similar spectrums used for other injuries may suffice and must be discussed with the Attending.
      6. Antibiotics will continue for 48 hours after initial debridement and closure, either via primary repair or negative pressure dressing.
      7. Antibiotics will not be given for the presence of drains.
      8. Antibiotics should be redosed before ensuing surgical procedures in accordance with SCIP guidelines.
      9. To increase compliance, open fractures of the hand and upper extremity will be treated similarly to other open fractures.
Closed Femur Shaft Fractures:

I. Initial Management:

1. Femur Shaft fractures should receive definitive fracture management within 24 hours. Note this Guideline excludes proximal Femur fractures (IT, femoral neck, femoral head) and distal femur Fractures (supracondylar, condylar or bi-condylar)

III. PERFORMANCE IMPROVEMENT MONITORING (Expected Outcomes)

1. Time of Injury to initial washout of open fracture- within 24 hours. Patients with gross wound contamination require washout as soon as clinically feasible

2. Timing of antibiotics- within 1 hour of Emergency Department arrival

3. Definitive management of closed femur shaft fracture repair- within 24 hours of Emergency Department arrival.

Reference: ACS TQIP Best Practices in the Management of Orthopedic Trauma