

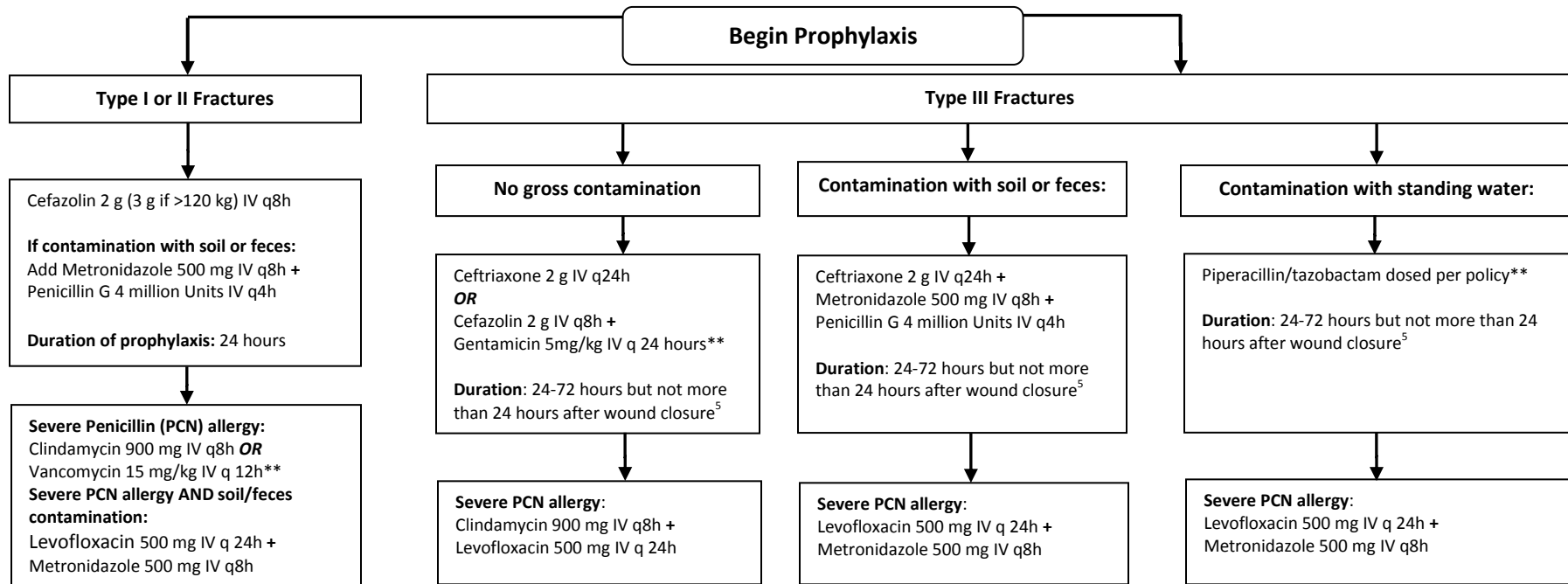
Trauma Center Practice Management Guideline

Iowa Methodist Medical Center — Des Moines

Open Fracture Clinical Pathway for Trauma Patients IMMC/ILH Adult Acute Care

ADULT Practice Management Guideline	Effective: 05/2017
Contact: Trauma Center Medical Director	Last Reviewed: 05/2017

Open Fracture Gustilo Classification	
Type I Fracture	Open fracture with clean wound <1 cm long
Type II Fracture	Open fracture with laceration >1 cm but < 10 cm long without extensive soft tissue damage
Type III Fracture	Open segmental fracture, open fracture with extensive soft tissue damage, >10 cm or traumatic amputation



For known MRSA colonization in all fracture types: Utilize Vancomycin 15 mg/kg IV q12h**

**Pharmacy will adjust doses if indicated based on renal function and are available to manage vancomycin or gentamicin therapy when consulted.

Antibiotic Considerations:

- Prophylaxis should begin as soon as possible and within 3 hours of injury because infection risk increases significantly beyond this time frame.⁵
- Cultures immediately post-injury are not useful in directing antimicrobial prophylaxis.⁵
- Type I or II fractures necessitate gram positive coverage while Type III fractures require the addition of gram negative coverage.²
- Studies have found similar efficacy with ceftriaxone as compared with cefazolin plus gentamicin in Type III Fractures.¹
- Fluoroquinolones may be detrimental to fracture healing⁵ and may result in higher infection rates in Type III Fractures.²
- Aminoglycosides should be dosed once daily as this may decrease side effect risk.²
- Even for Type III Fracture, 1 day of antibiotics may be as effective as longer courses⁴
- All patients should be evaluated for Tetanus prophylaxis.

Irrigation, debridement and skin closure⁶:

- Patients with open fractures should be taken to the operating room for irrigation and debridement within 24 hours of initial presentation whenever possible.
- Patients with severe fractures associated with gross wound contamination should be brought to the operating room more quickly, and as soon as clinically feasible, based on the patient's condition and resources available.
- Whenever possible, skin defects overlying open fractures should be closed at the time of initial debridement.
- Soft tissue coverage should be completed within seven days of injury for open fractures associated with wounds requiring skin grafting or soft tissue transfers.

References:

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4. Dunkel N, Pittet D, Tovmirzaeva L, et al. Short duration of antibiotic prophylaxis in open fractures does not enhance risk of subsequent infection. *Bone Joint J.* 2013;95-B:831-7.
5. Anderson A, Miller AD, Bookstaver PB. Antimicrobial prophylaxis in open lower extremity fractures. *Open Access Emergency Medicine.* 2011;3:7-11.
6. Davis L, et al. ACS TQIP best practices in the management of orthopaedic trauma.