Table 1. DUHS PROPHYLACTIC AND PERIPROCEDURAL ANTIBIOTICS FOR ADULT PATIENTS WITH TRAUMA

Procedure or Injury	Anti-infective & Dosing	Duration	Notes
Trauma-related Procedural Antibiotics			
Chest Tube Thoracostomy, Percutaneous Endoscopic Gastrostomy (PEG), **OR** Tracheostomy	Cefazolin 2g (if TBW ≥ 120kg, use 3g)	SINGLE DOSE	--
Extraventricular Drain (EVD)	Cefazolin 2g (if TBW ≥ 120kg, use 3g) Cefazolin 2g q8h	Antimicrobial-impregnated drains (Orange): SINGLE DOSE Non-antimicrobial impregnated drains (Blue): cefazolin while drain in place	**Antimicrobial-impregnated drains should be used when possible** (in some cases with hemorrhage, larger bore non-impregnated drains may be required)
Temporary Abdominal Closure (Open Abdomen)	Antibiotics do NOT need to be continued beyond standard pre-procedural prophylaxis or standard treatment duration		
Traumatic Soft Tissue Wounds (without evidence of soft tissue infection)			
ALL traumatic wounds: Evaluate tetanus exposure risk.	No Td needed if meets **BOTH**: 1. Tetanus vaccine received <5 years ago. 2. Completed primary vaccine series. Administer Td if **any 1 of**: 1. Unknown vaccine history. 2. Unvaccinated. 3. Incomplete tetanus primary series. 4. Complete tetanus primary series AND: a. Clean/Minor wounds and received last tetanus vaccine **10 or more years** ago. b. Dirty/Major wounds and received their last tetanus vaccine **5 or more years** ago.	SINGLE DOSE	Dirty/Major wounds contain devitalized tissue where *C. tetani* can proliferate. Examples: • Penetrating, puncture wounds, wounds due to missiles • Wounds containing dirt, soil, feces, or saliva • Wounds with devitalized tissue (burns, compound fractures, crush injury, frostbite, necrotic/gangrenous wounds) Tetanus Immune Globulin (TIG) 250 IU IM x1 may be considered for people with dirty/major wounds and **at least 1** of the following: • Unknown tetanus vaccine history • Unvaccinated • Incomplete tetanus vaccine primary series • People living with HIV • People with a severe immunodeficiency
Gunshot wound (GSW)	Cefazolin 2g (if TBW ≥ 120kg, use 3g)	SINGLE DOSE	Wound management: irrigate thoroughly, debride devitalized tissue, typically wound is not closed

Stab wounds	Cefazolin 2g (if TBW ≥ 120kg, use 3g)	SINGLE DOSE	Wound management: irrigate thoroughly, debride devitalized tissue, loosely close linear lacerations
Destructive Soft Tissue Wounds (GSW, stab, scalp, or other without fracture)	Cefazolin 2g (if TBW ≥ 120kg, use 3g) Severe PCN/cephalosporin allergy: clindamycin 600mg IV q8h **Additional coverage** Freshwater exposure: add levofloxacin 750mg Saltwater exposure: add doxycycline 100mg q12h	Prophylactic antibiotics for ≤ 24 hrs for complex wounds or high-risk patients	
Mammalian bites (human, dog, cat)	Amoxicillin-clavulanic acid 875mg q12h Severe PCN/cephalosporin allergy: (Doxycycline 100mg q12h OR TMP/SMX 1DS q12h) **PLUS** metronidazole 500mg q12h	3-5 days*	*Prophylaxis recommended ONLY for patients with any of the following risk factors present: 1. Immunocompromised 2. Asplenia 3. Advanced liver disease 4. Preexisting or resultant edema of the affected area 5. Moderate-severe injury, especially of hands or face Any injury involving periosteum or joint capsule Evaluate the need for rabies post-exposure prophylaxis and reporting: https://epi.dph.ncdhhs.gov/cd/lhds/manuals/rabies/docs/domestic_mgmt.pdf
Traumatic Hollow Viscus Injury	Piperacillin-tazobactam 3.375g q8h Mild PCN allergy: cefepime 1g q6h + metronidazole 500mg q12h Severe PCN/Cephalosporin allergy: levofloxacin 750mg q24h + metronidazole 500mg q12h	Blunt and penetrating injuries with rapid source control: 24 hours Blunt and penetrating injuries with delayed recognition: 4 days after source control	--
Facial Fracture **WITHOUT** injury to Central Nervous System	Refer to Facial Fracture Prophylaxis **Table 2** Below		

Cartilage injury without bone fracture (e.g. ear or nose)	Ciprofloxacin 500mg PO BID	5-7 days if high risk (e.g., status post drainage of septal or auricular hematoma)	Evidence supporting antibiotic prophylaxis is lacking. Practice based on historical concern for perichondritis based on infections related to piercings washed with contaminated solutions.
Open globe injury	Vancomycin + moxifloxacin 400 mg Q24h	2-5 days	Limited data on duration: AAO recommends at least 48 hours; in observational studies, infection rates were similar with 48 hours duration compared to longer durations.
Open skull fractures WITHOUT injury to Central Nervous System	Refer to Open Fracture Prophylaxis **Table 3** Below		
Penetrating Traumatic Brain Injury (e.g. gunshot or stab wound with foreign body entry into brain parenchyma)	Vancomycin + cefepime 2g q8h Contaminated wounds: add metronidazole 500mg q8h	3-7 days	Limited data – prophylaxis regimens and durations may be individualized depending on severity of injury and degree of contamination. Investigation to rule out active infection may be needed. Consider ID consultation.
Closed, Non-operative Central Nervous System Injuries WITHOUT Penetrating Brain Injury (e.g. closed basilar skull fractures, pneumocephalus, CSF leak)	No prophylactic antibiotics		

Table 2. Facial Fracture Antibiotic Prophylaxis and Duration for Adults

	Risk group	Description	Antibiotic Agent and Dosing	Duration
Non-operative	Negligible	Non-operative traumatic facial fracture(s), clean with no sinus or oral involvement including upper face, midface, or mandibular fractures	None	N/A
	Low	Non-operative traumatic facial fracture(s), clean/contaminated including sinus/oral involvement or open fracture	ampicillin-sulbactam 3g IV q6h or amoxicillin-clavulanate 875mg PO q12 hours*	24 hours‡
Operative	Low	Operative traumatic facial fracture(s) requiring fixation/prosthesis, clean with no sinus or oral involvement	cefazolin 2g IV q8h	24 hours post-operatively‡
	Medium	Operative traumatic facial fracture(s), clean/contaminated including sinus/oral involvement and open fractures	ampicillin-sulbactam 3g IV q6h or amoxicillin-clavulanate 875mg PO q12 hours*	24 hours post-operatively‡ For patients with delayed wound closure or decision for delayed surgery, continue antibiotic prophylaxis for 24 hours after wound closure, **up to 5-7 days at most**.
	High	Operative traumatic facial fracture with heavily contaminated wound, including contamination with soil/feces/debris or exposure to standing water	piperacillin-tazobactam 3.375g IV q8h EI*	48-72h post-operatively‡
	Highest	Penetrating or open trauma involving the central nervous system	See Penetrating Traumatic Brain Injury Above.	

*Patients with beta-lactam allergy:

- Mild/moderate penicillin allergy: ceftriaxone 2000 mg IV q24h + metronidazole 500 mg IV/PO q12h
- Severe penicillin or cephalosporin allergy: levofloxacin 500 mg IV/PO q24h + metronidazole 500 mg IV/PO q12h

‡For patients with chronic sinusitis disease present at time of fracture or surgery (e.g. CT evidence of pre-existing chronic sinus disease), may consider a 5-day course for sinusitis targeted to prior pathogens or pathogens cultured at the time of surgery.

Peri-operative prophylaxis is recommended for clean + prosthesis or clean/contaminated operative procedures per DUH surgical prophylaxis guidelines, with duration 1 hour prior to incision and up to 24 hours post-operatively (Link here).

Table 3. Open Fracture Antibiotic Prophylaxis for Adults

Fracture Grade	Recommended Antibiotic Agents	Severe PCN/Cephalosporin Allergy Alternative	Duration
Type I and II	cefazolin 2g q8h (3g for patients >120kg)	clindamycin 900mg IV q8hł	<24 hours
Type III	cefepime 2g q8h	clindamycin 900mg IV q8hł PLUS levofloxacin 750mg PO/IV q24h	< 24 hours
Type III concern for soil/feces contamination (*Clostridium* risk)	piperacillin-tazobactam 3.375g q8h* OR <u>Mild PCN allergy</u>: cefepime 2g q8h PLUS metronidazole 500mg PO/IV BID	clindamycin 900mg IV q8hł PLUS levofloxacin 750mg PO/IV q24h PLUS metronidazole 500mg PO/IV BID	48-72h when there is heavy wound contamination

łChange clindamycin to vancomycin on floor if history of history of MRSA or MRSA risk factors.

*Piperacillin-tazobactam covers *Clostridium*. Do not need to add a penicillin.

Table 4. Gustillo-Anderson Open Fracture Grading

Type	**Wound Size**	**Contamination**	**Fracture**	**Vascular Injury**	**Soft tissue coverage**
I	Wound < 1cm	Minimal	Minimal comminution; no periosteal stripping	No	Adequate
II	Wound > 1cm	Moderate	Moderate comminution; minimal periosteal stripping	No	Adequate
IIIA	Any size	Severe	Severe comminution or segmental fractures; periosteal stripping	No	Adequate; may become inadequate with debridements
IIIB	Any size	Severe	Severe comminution or segmental fractures; periosteal stripping	No	Inadequate (rotation flap or free flap)
IIIC	Any size	Severe	Severe comminution or segmental fractures; periosteal stripping	Yes	Inadequate (rotation flap or free flap)

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Review: AS FET 7/2025; Trauma Surgery; NeuroICU and Surgical ICU Directors and pharmacists; PMMC 8/11/2025

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