# Trauma Drama and How to Avoid it

Patricia M. Rose, MMSc, PA-C

*At the end of the day, the key to avoiding drama is simply a good physical exam!*

I. **Open Fractures:** Any break in the skin that communicates with the fracture hematoma

a. **Gustilo-Anderson Classification System** (Don't have to memorize but it is helpful for communicating with colleagues.)
   - Type I: wound <1cm
   - Type II: wound >1cm; no extensive soft tissue damage
   - Type IIIA: >10cm, but good soft tissue coverage
   - Type IIIB: >10cm, exposed bone; periosteal stripping; needs coverage
   - Type IIIC: >10cm with major vascular injury

b. Antibiotics AS SOON AS POSSIBLE
c. Typically 1st generation cephalosporin for gram-positive coverage
   i. Clindamycin if allergic
   ii. Add gram-negative coverage (ie gentamycin) for high grade injury
d. **The Drama** (Complications) → Increased incidence of infection and nonunion
e. **Pearls:**
   i. Examine skin thoroughly, even if wrapped or splinted
   ii. Beware of the handoff, especially in ED/Urgent care
   iii. Scrutinize x-rays to look for air consistent with open fracture

II. **High Energy Fractures** → Think about **compartment syndrome:** increased pressure in closed fascial compartment causes impaired circulation and hypoperfusion

a. Clinical diagnosis: **pain out of proportion** and pain with passive stretch
b. Lower leg is most common location, forearm is 2nd most common; Typically occurs within 48 hours of injury
c. Treatment is emergent fasciotomies to reduce pressure

d. **The Drama** (Complications) → Ischemia and necrosis can lead to permanent muscle and nerve damage
e. **Pearls**:
    i. Look at imaging and recognize high energy fracture based on mechanism and fracture pattern. (Not all fractures are equal.)
    ii. Go and examine the patient yourself. Palpate for tense compartment and document neurovascular exam.
    iii. Serial exams. Compartment syndrome can evolve quickly and you can miss it during one shift! Q 2 hr checks

**III.** **Polytrauma** → Distracting injuries are distracting and therefore patients need serial exams.

a. Must include thorough neurovascular exams. If it is not documented, it did not happen.
b. **Know your anatomy and what nerves are at risk** based on injury. For humeral shaft fractures, think about the radial nerve.
c. Be consistent with exam. Know how to check the nerves:
    i. Radial nerve: Thumbs up, Stop sign (wrist extension)
    ii. Median nerve: "ok" sign
    iii. Ulnar nerve: Spread fingers wide, cross fingers
d. The **Drama** (Complications) → Nerve injuries may require further investigation and exploration; Legal implications
e. **Pearls**:
    i. Nerves are sensitive to stretch and swelling. Exams can be dynamic.
    ii. Secondary and tertiary exams are critical → Old adage of second fracture is hardest to diagnose remains true.
    iii. Have a high index of suspicion for certain nerve injuries based on fracture location. Be sure to re-examine the patient.