Bone and Joint Injuries (Adult and Pediatric)

CFR AND ALL PROVIDER LEVELS

1. ABCs and vital signs.
2. Airway management, and appropriate oxygen therapy.
3. Assess for shock and treat, if appropriate.
4. Manually stabilize the injury.
5. Cover protruding bones and associated wounds with dry, sterile dressings.
6. Check for peripheral (distal) pulses, motor function, and sensation in the injured extremity.
7. Apply cold pack(s) to closed injury sites.

CFR STOP

EMT

8. Avoid excess pressure over injury sites.
9. Immobilize the injury:
   a. Check for peripheral (distal) pulses, motor function and sensation in the injured extremity before and after immobilization.
   b. If the distal extremity is cyanotic, ***or*** lacks a pulse, ***or*** if a long bone is severely deformed, align the extremity by applying gentle manual traction prior to splinting. Stop and splint in position found if increase in pain, or resistance is felt.
   c. Apply a splint:
      i. Traction splinting is indicated if there is an isolated, closed mid-thigh fracture, and no suspected injury to the pelvis, knee, lower leg, or ankle on the same side (depending on particular device).
   d. Joints above and below the deformity should be immobilized.
   e. An injured joint should be immobilized in the position of function. If unable to move to position of function due to increased pain or resistance, splint in the position found.
   f. Stabilize potentially unstable pelvic fractures with a pelvic binder, if available.
10. Elevate the injury site after splinting.
11. Transport.

EMT STOP

Paramedic

For Adult and Pediatric patients with an isolated extremity injury, if there is severe pain.

12. Begin cardiac monitoring.
13. Begin Pulse Oximetry monitoring.
14. Intravascular access.
15. Monitor vital signs every 5 minutes.

16. Administer **one** of the following:
    a. Morphine Sulfate, for patients with a systolic blood pressure greater than 110 mmHg, 0.1 mg/kg (not to exceed 5 mg), IV/IM.
        i. For continued pain, Morphine Sulfate 0.1 mg/kg (not to exceed 5 mg), IV/IM, may be repeated after five minutes following the initial dose. (Maximum total dose is 10 mg.)
    b. Administer Fentanyl 1 mcg/kg (maximum dose is 100 mcg), IV/IN/IM, if available.
        i. For continued pain, Fentanyl 1 mcg/kg (not to exceed 100 mcg), IV/IN/IM may be repeated after five minutes following the initial dose. (Maximum total dose is 200 mcg.)

Paramedic STOP

Medical Control Options

1. **Patella Dislocation:**
   For isolated, clinically obvious, medial or lateral dislocation of the patella.
   a. If obvious medial or lateral patella dislocation, gradually extend the knee while, at the same time, a second provider applies pressure on the patella towards the midline of the knee.
   b. **Note: If unsure of patella dislocation, or if body habitus (e.g. large body build or obesity) prevents accurate assessment, immobilize in position found.**
   c. When straight, place the entire knee joint in a knee immobilizer or splint.

Key Points / Considerations

1. Splinting should not delay transport of the critical or unstable patient.
2. Refer all weight based fluids/medications for pediatric patients to a Length Based Dosing Device.
3. If hypoventilation develops after the administration of opioid analgesics:
   a. Administer Naloxone, titrated in increments of 0.5 mg up to response, up to 4 mg, IV/IN/IM.
4. Patella Dislocation:
   a. May be described as “knee went out”.
   b. Intra-articular and superior dislocations are not reducible in the prehospital environment.
   c. If there is severe increased pain or resistance, stop and splint in the position found.
   d. Patient usually feels significantly better after reduction, but they still need transport to a hospital for further evaluation and possible treatment.