Intraosseous Access

Clinical Indications:

- Patients where rapid, regular IV access is unavailable with any of the following:
  - Cardiac arrest.
  - Multisystem trauma with severe hypovolemia.
  - Severe dehydration with vascular collapse and/or loss of consciousness.
  - Respiratory failure / Respiratory arrest.

Contraindications:

- Fracture proximal to proposed intraosseous site.
- History of Osteogenesis Imperfecta
- Current or prior infection at proposed intraosseous site.
- Previous intraosseous insertion or joint replacement at the selected site.

Procedure:

1. Don personal protective equipment (gloves, eye protection, etc.).
2. Identify anteromedial aspect of the proximal tibia (bony prominence below the knee cap). The insertion location will be 1-2 cm (2 finger widths) below this. If this site is not suitable, and patient >12 years of age, identify the posterolateral aspect of the proximal humerus (bony prominence below the shoulder joint) The insertion location will be 1-2 cm below this.
3. Prep the site as recommended by the device manufacturer.
4. For the EZ-IO intraosseous device, hold the intraosseous needle at a 60 to 90 degree angle, aimed away from the nearby joint and epiphyseal plate, power the driver until a “pop” or “give” is felt indicating loss of resistance. Do not advance the needle any further.
5. Remove the stylette and place in an approved sharps container.
6. You may administer 20 to 40 mg (1 to 2 cc) of 2% Lidocaine in adult patients who experience infusion-related pain. This may be repeated prn to a maximum of 60 mg (3 cc).
7. Attach a syringe filled with at least 10 cc NS; inject 2 cc NS then aspirate bone marrow to verify placement; then inject at least 5 cc of NS to clear the lumen of the needle.
8. Attach the IV line and adjust flow rate. A pressure bag may assist with achieving desired flows.
9. Stabilize and secure the needle with dressings and tape.
10. Following the administration of any IO medications, flush the IO line with 10 cc of IV fluid.
11. Document the procedure, time, and result (success) on/with the patient care report (PCR).

Certification Requirements:

Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the Survival Flight Medical Director. Assessment should include direct observation at least once annually.