Intraosseous Infusion (≥ PL3)

Clinical Indications:

1. Cardiac Arrest
2. Critical patient where rapid vascular access is unavailable by other means in the following conditions:
   a. Multisystem trauma with severe hypovolemia
   b. Severe dehydration with vascular collapse and/or loss of consciousness
   c. Respiratory failure or respiratory arrest
   d. After 3 unsuccessful IV attempts and patient is unstable.

Contraindications:

1. Fracture proximal to the proposed intraosseous site.
2. History of osteogenesis imperfecta.
3. Current or recent infection at proposed intraosseous site.
4. Previous intraosseous insertion at the identified site within 24 hours.
5. Joint replacement at or above the selected intraosseous site.

Notes/Precautions:

1. Any prehospital fluids or medications approved for IV use, may be given through an IO line.

Procedure:

1. Prepare EZ-IO assuring that complete needle set with trochar and needle are present, and the set is sterile and unused.
2. Identify landmarks for insertion:
   a. Humeral head - place the patient's palm on their umbilicus with the elbow on the ground or stretcher. Use your thumb to identify the humeral shaft. Slide thumb towards humeral head with firm pressure. Locate the tubercle by the prominent bulge. Use the opposite hand to pinch anterior and posterior humerus to assure midline position on the humerous.
   b. Proximal tibia - Identify anteromedial aspect of the proximal tibia palpated just below the inferior border of the patella. Insertion site is 1-2 cm (2 finger breadths) below this on the flat surface of the tibia.
   c. Distal tibia (patients > 12 years of age) - Identify the anteriormedial aspect of the distal tibia (2 cm proximal to the medial malleolus).
   d. Distal femur - Place leg in perpendicular position with foot pointing up. Identify superior border of patella. Insertion site is 1-2 cm (2 finger breadths) above the patellar superior border.
3. Prep the selected insertion site with chlorohexidine.
4. Hold the intraosseous needle at 90-degree angle aimed away from the nearest joint. Power the driver until a *pop* or *give* is felt indicating a loss of resistance. Do not advance the needle further.
5. Remove the stylette and place in a sharps container.
6. Attach a syringe filled with at-least 5 mL of NS and aspirate to confirm placement. Inject 5 mL of NS to clear the needle while observing for infiltration.
7. Attach saline lock and/or IV tubing and adjust flow rate. A pressure bag may be used to enhance flow when appropriate.
8. Stabilize and secure the needle.
9. If the patient experiences pain with infusion or medication, then lidocaine may be administered. Wait 15 seconds to prior to re-administering infusion or administration of medications. Lidocaine may be repeated once if pain persists.
10. When administering medications via IOA, a 10 mL flush of NS should follow.
11. Document the procedure, time, and result in the ePCR.