Intraosseous Infusion: Humeral Site
Indications of Humeral Site Use

- Use of the humeral site should be used as a last resort method if attempts at the tibial sites fail or are not practical.
- Use of the humeral site offers the following benefits when compared to the tibial site:
  - Higher fluid volumes may be infused
  - Superior flow rates to the heart
  - Less pain and no compartment syndrome
- Some of the shortcomings of the humeral site compared to the tibial site include:
  - More difficult to secure
  - Landmarks are not as easily visualized
  - Contraindicated in pediatric patients
Finding Landmarks

- Place the patient’s hand of the arm you plan to use over his/her umbilicus.

- The insertion site is located directly on the most prominent aspect of the greater tubercle. Slide your thumb up the anterior shaft of the humerus until you feel the greater tubercle, this is the surgical neck. Approximately 1 cm (depending on the patient’s anatomy) above the surgical neck is the insertion site.
Finding Landmarks

- The EZ-IO needle is inserted at a 45° angle into the greater tuberosity of the humeral head, as illustrated in the figure below.
Equipment

- The equipment used for the humeral site IO procedure does not differ from the tibial site IO procedure.
- Alcohol and Betadine pads/swabs
- Intraosseous needle
- Pressure bag
- IV Infusion set, flushed and ready to go
- Two (2) 10cc syringes:
  - 1. 10cc empty syringe for aspiration
  - 2. 10 cc syringe filled with normal saline for immediate flush
- EZ-Connect IV tubing
Procedure

- Locate the insertion site by placing the patient’s hand of the arm that you plan to use on his/her stomach with the elbow adducted.
- Find the humeral greater tuberosity.
- Clean the site with Betadine or Alcohol.
- Stabilize the patient’s arm and using a FDA approved insertion device, insert the appropriate IO needle at a 45° angle to the anterior plane of the arm.
Procedure

- **Stabilize the needle set prior to any attempt at removing the insertion device.**
- Remove the stylet and connect the EZ-Connect IV tubing to the needle hub.
- Aspirate the IO line with one 10cc syringe.
  - The presence of fluid during aspiration is a confirmation of proper placement.
- Once proper placement is confirmed, flush the IO line with 10cc of normal saline.
- Check for infiltration around the IO site.
Procedure

- Secure the set to avoid dislodgement during transport. Use the EZ Stabilizer, if available. Otherwise use tape or bulky dressing to secure.
Procedure

- IO infusion is very painful for conscious patients. If the patient is conscious, administer Lidocaine 40 mg SIVP over 30-45 seconds to the patient via the IO for local anesthesia prior to fluid administration. Avoid rocking the needle hub, as it can be easily dislodged.
Questions

- Questions from providers