

Use of Arrow EZ-IO system for Intraosseus (IO) Needle Insertion on NICU



Contents of yellow IO Bag:

- Driver (battery lasts for 100 insertions and does NOT need to be checked as part of the resus trolley checks)
- Pink 15mm 15 gauge needle and stylet
- Dressing
- Extension set (requires priming with 0.9% saline and Luer-lock syringe)
- Instructions

Indications:

- For emergency use when other access such as UVC is difficult or impossible (i.e. gastroschisis/exomphalos)
- Very effective if difficult access/shocked- prevents multiple PVL attempts, can be used for all emergency drugs

Contraindications:

- Previous IO within 48 hours
- Infection at site
- Inability to locate landmarks (risk of malplacement)
- Fracture (risk of extravasation)

Possible complications:

- Extravasation
- Dislodgement
- Fracture
- Pain
- Infection
- Needs to be removed for MRI

Approved site:

- End of proximal tibia – 1 finger width below patella on tibial tuberosity (flat part) and 1 finger width medially to avoid growth plate

Placement:

- Attempt to keep procedure as sterile as possible- use clean trolley and sterile field.
- Attach needle to driver (use 15 mm Pink needle- 15 gauge)
- Prime extension set with 0.9% sodium chloride.
- Stabilise limb and clean site with chlorhexidine as per unit protocol allowing 30 seconds to dry
- Insert needle until it reaches the bone and squeeze drill trigger ensuring moderate continuous pressure until a 'pop' is felt.
- Remove driver whilst holding needle in place.
- Unscrew and remove stylet and discard safely in sharps bin.
- Marrow can be aspirated but DO NOT use in blood gas analyser (will block the system).
- Attach dressing before attaching extension set to hold catheter in place
- Attach extension set and flush with saline.
- Give drugs as needed.
- Attach EZ-IO wristband to baby and clearly document in notes/Badgernet.
- Baby may require splint to stabilise if unsettled (i.e. if seizures seen in affected limb)
- Monitor closely for extravasation
- Aim to remove within 24 hours when alternative access available.

Removal:

- Support limb and carefully remove extension set
- Attach Luer-lock syringe to hub, pull at 90 degrees, rotating slightly clockwise
- Do not bend or rock catheter whilst removing
- If bleeding occurs, apply gentle pressure.
- Cover with sterile gauze and tegaderm dressing- observe to ensure dressing remains clean and dry

