

## APPENDIX: 15

TITLE: EZ-IO Infusion System

REVISED: 01May2018

- **Sizes:**
  - EZ-IO®LD (Over 40 kg with excessive tissue from Edema, Muscle, or Obesity)
  - EZ-IO®AD (40 kg and over)
  - EZ-IO® PD (3 – 39 kg)
    - Note: *Certain patients may require a needle set outside of their ideal weight range. “One size needle set does not fit all.”*
- **Indications:**
  - Immediate vascular access needed.
  - Intravenous fluids or medications are **urgently** needed and a peripheral IV cannot be established within 90 seconds

**AND:**

  - The patient exhibits one or more of the following:
    - An altered mental status (GCS  $\leq$  8)
    - Respiratory compromise (SpO<sub>2</sub> < 90% after appropriate oxygen therapy, respiratory rate < 10 or > 40 min)
    - Hemodynamic instability (Systolic BP of < 90).
- **Contraindications:**
  - Fracture of the bone selected for IO infusion (*consider alternate sites*)
  - Excessive tissue at insertion site with the absence of anatomical landmarks (*consider alternate sites*)
  - Previous significant orthopedic procedures (*IO within 24 hours, prosthesis - consider alternate sites*)
  - Infection at the site selected for insertion (*consider alternate sites*)
- **Considerations:**
  - **Pain:**
    - **Insertion** of the EZ-IO® in conscious patients has been noted to cause mild to moderate discomfort (usually no more painful than a peripheral IV). However, IO **infusion** for conscious patients has been noted to cause severe discomfort
    - Prior to IO syringe bolus (flush) or continuous infusion in conscious patients, SLOWLY administer Lidocaine 2% (Preservative Free) through the EZ-IO hub. *Ensure that the patient has no allergies or sensitivity to Lidocaine.*
      - ▶ EZ-IO® **AD** Slowly (30 seconds minimum) administer 20 – 40 mg Lidocaine 2%
      - ▶ EZ-IO® **PD** Slowly (30 seconds minimum) administer 0.5 mg /kg Lidocaine 2%

- **Flow rate:**
  - Due to the anatomy of the IO space, flow rates may appear to be slower than those achieved with an IV catheter.
  - Ensure the administration of an appropriate rapid **SYRINGE BOLUS (flush)** prior to infusion
  - **“No Flush = No Flow”**
    - ▶ Rapid syringe bolus (flush) the **EZ-IO® AD** with **10 ml** of normal saline.
    - ▶ Rapid syringe bolus (flush) the **EZ-IO® PD** with **5 ml** of normal saline.
    - ▶ Repeat syringe bolus (flush) as needed
  - To provide continuous infusion flow rates always use a syringe, pressure bag or infusion pump.
  
- **Precautions:**
  - The EZ-IO® is **not intended** for prophylactic use.
  
- **Equipment:**
  - EZ-IO® Driver
  - EZ-IO® AD or EZ-IO® PD Needle Set
  - Alcohol or Betadine Swab
  - EZ-Connect® or Standard Extension Set
  - 10 ml Syringe
  - Normal Saline (or suitable sterile fluid)
  - Pressure Bag or Infusion Pump
  - 2 % Lidocaine (preservative free)
  - EZ-IO® Yellow wristband
  
- **Procedure:**
  - *If the patient is conscious, advise of EMERGENT NEED for this procedure and obtain informed consent*
    - Determine EZ-IO® Indications
    - Rule out Contraindications
    - Locate appropriate insertion site (*Sites with regulatory approval include: Proximal / Distal Tibia & Proximal Humerus*)
    - Prepare insertion site using aseptic technique
    - Prepare the EZ-IO® driver and appropriate needle set
    - Prime EZ-Connect® tubing with Lidocaine for conscious patients; Normal Saline for unconscious patients
    - Stabilize site and insert appropriate needle set
    - Remove EZ-IO® driver from needle set while stabilizing catheter hub
    - Remove stylet from catheter, place stylet in shuttle and approved sharps container
    - Confirm placement
    - Connect primed EZ-Connect®
    - Slowly administer appropriate dose of Lidocaine 2% IO to conscious patients
    - Syringe bolus (flush) the EZ-IO® catheter with 3-5 ml Normal Saline

- Begin infusion with pressure (syringe bolus, pressure bag or infusion pump) where applicable
- Dress site and secure tubing
- Monitor EZ-IO<sup>®</sup> site and patient condition – Remove catheter within 24 hours

**EZ-10 INFUSION System**