

APPENDIX: 15

TITLE: EZ-IO Infusion System

REVISED: October 15, 2014

- **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 (SpO₂ < 90% after appropriate oxygen therapy, respiratory rate < 10 or > 40 min)
 - Hemodynamic instability (Systolic BP of < 90).
 - The EZ-IO should be considered **PRIOR to** peripheral IV attempts in the following situations:
 - Cardiac arrest (medical or traumatic)
 - Patient in extremis with immediate need for delivery of medications and or fluids.
- **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[®] site and patient condition – Remove catheter within 24 hours

EZ-10 INFUSION System