

INTRAOSSIOUS CANNULATION - EZ-IO

Name: _____ Date: _____ License # _____

Intraosseous cannulation provides a safe and reliable method for rapidly achieving a route for administration of medications, fluids, and blood products in a non-collapsible vascular space.

A. Assessment/Treatment Indicators:

1. Resuscitation.
2. Altered mental status (GCS 8 or less).
3. Status epilepticus with prolonged seizure activity greater than 10 minutes, and refractory to IM anticonvulsants.

B. Contraindications:

1. Fractures of the involved bone.
2. Fourth Degree burn, infection or area of cellulitis overlying the site of insertion.
3. Congenital deformity or history of osteogenesis imperfecta or osteoporosis.
4. Previous IO attempt at chosen site.
5. Patient < 3kg.

C. Potential complications and interventions:

1. Tubing becomes obstructed with bone or bone marrow: replace the tubing extension set.
2. Local infiltration of fluids, medications, or local bleeding: stop infusion, remove needle, and apply pressure with sterile gauze.

D. Approved Sites (listed in order of use):

1. Primary site is the proximal tibia. Palpate the landmarks at the proximal tibia (patella and tibial tuberosity). Insertion site should be approximately one finger width to the medial side of the tibial tuberosity. **This is the only approved site for pediatric patients.**
2. Secondary site is the distal tibia. Palpate the landmarks at the distal tibia. Insertion site should be two finger widths proximal to the medial malleolus along the midline of the tibia.
3. Proximal Humerus shall only be used if both tibias are unavailable. Insertion site is located directly on the most prominent aspect of the greater tubercle. Slide thumb up the anterior shaft of the humerus until you feel the greater tubercle, this is the surgical neck. Approximately 1 cm (depending on patient anatomy) above the surgical neck is the insertion site. Ensure that the patient's hand is resting on the abdomen and that the elbow is adducted (close to the body).

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Supersedes:

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Medical Director

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EMS Administrator

<u>Equipment:</u>			
1. EZ-IO Drill	2. Intraosseous needle sets: 15mm, 25mm or 45mm.	6. Syringes (2) 10 ml	7. Broselow Pediatric Resuscitation Tape (Pediatric patients only).
3. Alcohol swabs	4. Sterile gauze and gloves	8. Adhesive tape	9. EZ Stabilizer
5. 2% Lidocaine		10. Normal saline	
Performance Criteria		Pass	Fail
1.	Uses universal precautions.		
2.	States: Indications and contraindications.		
3.	Demonstrates the ability to correctly select the primary, secondary, and tertiary sites for IO cannulation.		
4.	Selects the correct size needle A. 15mm (Pink) for patients 3 – 39 kg B. 25mm (Blue) for patients > 40 kg. C. 45mm (Yellow) for patients > 40 kg with excessive tissue over the insertion site.		
5.	Assembles equipment, attaches extension (EZ-Connect) tubing to IV tubing, and correctly assembles the EZ-IO driver and needle set.		
6.	Cleans insertion site using aseptic technique.		
7.	Needle Insertion: Stabilize the selected site and begin insertion from a 90-degree angle to the plane of the site. Inserts the needle until the needle is touching the bone. Ensures that the 5mm mark is visible before powering the driver. If 5 mm mark is not visible uses a larger needle. Powers the driver, using limited pressure and advances the needle until you feel a change in resistance.		
8.	Flushes the needle with Lidocaine (See # 11 Pain Management below) if patient semi-conscious or with saline if patient is unconscious.		
9.	Stabilizes the needle set and removes the drill and then the stylet.		
10.	Confirms placement by aspiration, ability to infuse a 10ml saline flush without signs of infiltration, leakage or local edema. Understands that a flash of blood in the catheter may (but does not always) occur to confirm placement.		

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Performance Criteria		Pass	Fail
11.	Pain Management: A. For conscious or semi-conscious patients administer 0.5 mg/kg 2% lidocaine (not to exceed 50 mg) slowly (over 30-45 seconds) through the IO site. Wait approximately 30–60 seconds before “power” flushing with normal saline. B. In the event a patient regains consciousness and complains of severe pain secondary to the IO insertion, temporarily stop infusing the fluids, and administer lidocaine as listed above.		
12.	Attaches IV tubing to EZ connect tubing. It is unlikely that fluid will run freely on a gravity drip. Applies pressure to IV bag and adjust flow as required.		
13.	Secure the EZ-IO needle and tubing in place. If the EZ IO is placed in the humerus, or in a pediatric patient, the EZ stabilizer shall be used.		
14.	States: Potential complications and interventions.		
15.	Place EZ-IO identification band on patient, document time, date, and person completing the procedure.		
16.	Restrain patient prn to prevent inadvertent dislodging of the needle.		
17.	States: Document IO placement on PCR.		
18.	Removal Process: States: Attach syringe to needle, then twists the needle in a clockwise direction and pulls straight out. Once needle has been removed applies direct pressure to control any bleeding, then covers area with a sterile dressing.		

Please provide comments for any item that is marked as failed: _____

Name & Signature of Evaluator

Date

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