

**REGION I EMERGENCY MEDICAL SERVICES  
STANDING MEDICAL ORDERS  
EMT – Paramedic**

**SMO: Intraosseous Access**

**Overview:** Intraosseous infusion is indicated for the pediatric or adult patient who is in cardiac arrest and in whom you cannot quickly obtain peripheral venous access. Studies have confirmed intraosseous infusion to be a safe, fast, and effective route to infuse fluids, medications, and blood. IO infusion can be used for giving medications in both adults and children, but because the flow rate is not as rapid as peripheral venous infusions, it cannot be used for rapid volume replacement in adults.

**Indications**

- 6 years of age or less
- Cardiac arrest
- Multi-system trauma with associated shock
- Severe dehydration associated with vascular collapse and/or loss of consciousness
- Any child who is unresponsive and in need of immediate drug or fluid resuscitation (burns, status asthmaticus, status epilepticus, sepsis)

**Contraindications**

- Recently fixed bones
- Fracture above the intraosseous insertion
- Local infection at the intraosseous insertion
- Site used for previous venipuncture
- Bone disorders: osteogenesis, osteoimperfecta, osteoporosis

**PROCEDURE**

- Observe universal precautions
- Prepare equipment to be used
- Identify the landmark for venipuncture, preferably the anteromedial aspect of the proximal tibia, approximately 1 to 3 cm below the tibial tuberosity
- Cleanse the puncture site
- Using a twisting motion, introduce the needle using a 90 degree inferior puncture, away from the joint and epiphyseal plate. Note the decrease in resistance as the needle enters the marrow
- Remove the stylet
- Attach a 10 ml syringe and aspirate bone marrow to verify the location of the needle. Remove the syringe.
- Attach another 10 ml syringe filled with sterile saline. Inject 5 to 10 ml of saline to clear the lumen of the intraosseous needle.
- Attach the IV and adjust the flow rate.
- Secure the site with 4X4's and tape.

7/04

Reviewed:

Revised:

EMS/ Region1 SMOs

**PROCEDURE (cont)**

- \_\_\_ Following the administration of a medication, 10 ml of saline should be administered to expedite absorption into the circulatory system.
- \_\_\_ Immobilize leg with 2 armboards or ladder splint on either side of leg
- \_\_\_ Monitor the site and attempt alternative IV access as soon as patient's condition allows.

**Documentation of adherence to protocol:**

- \_\_\_ Adherence to aseptic technique
- \_\_\_ Change in patient condition post- fluid administration