Kaleida Health	**Title: Adult (> or equal to 18 years of age) Intraosseous Insertion, Care, and Maintenance** **Owner:** Corporate Code Blue Committee	**#TX.IV's& MEDS.35**
Keywords: Intraosseous, EZ IO, vascular access **Policy/ Standards Reference:** NYS Public Health Law Article 28		

I. Statement of Purpose

Intraosseous administration of medication, IV fluids, and blood products involves delivery via the medullary cavity of a long bone. Unlike peripheral veins, the medullary cavity DOES NOT collapse and can be utilized in the presence of circulatory failure, clinical shock, cardiac arrest or an acute medical condition in which vascular access is otherwise not obtainable as a temporary measure for resuscitation and stabilization. It acts like a rigid vein, making it an ideal site in a situation where circulatory access is urgently required. Intraosseous cannulation (IO) includes the use of a manual or mechanical device (i.e. EZ IO) to insert an appropriate needle through the bone into the marrow cavity for medication administration, laboratory samples, fluid administration, and blood product administration. This document defines the care of patients requiring intraosseous access device including: insertion site identification, insertion procedure, site and system maintenance, and removal of the device.

II. Work Instructions

A. IO insertion and removal must be completed by a credentialed licensed independent practitioner (LIP). Identified Kaleida Health trainers will be in-serviced by the IO representative and must successfully complete the training as follows (available via KaleidaScope)

1. Review of IO Standard TX.IV'S& MEDS.35
2. View EZ-IO training video
3. Review of specific order form KH01418.
4. Completion of EZ-IO infusion system post test with passing score submitted to the medical staff office.
5. Three successful IO insertions: two via a simulator and one via live or cadaver bone with signature from a credentialed trainer on IO form
6. Complete and pass yearly competency including one redemonstration on a simulator witnessed by a credentialed trainer.

B. Procedure

After peripheral and central IV line attempt has failed an intraosseous may be inserted.

See Mosby's' Nursing Skills Extended Text Intraosseous Access for specific equipment and steps in the insertion of the EZ-IO

1. Successful cannulation is confirmed by aspirate of blood and a visualization of marrow should also be expected. Ensure the administration of a rapid syringe bolus (flush 10 ml of normal saline) prior to infusion. NO FLUSH = NO FLOW.
2. Stabilize using sterile 2X2 gauze on each side of the needle or use the EZ IO stabilizer.
3. Activate the "restricted extremity use" IO identification band (located in the EZ-IO kit) on the affected extremity during the IO use and for 24 hours after removal, infiltration or unsuccessful attempt of intraosseous insertion. Place a pink restricted limb band with date, time and IO location of the affected limb on the patient's wrist stating which limb is affected.

C. Care and Maintenance

1. A Registered Professional Nurse (RN) may administer medications and fluids by the intraosseous route in the Emergency Department, critical care areas, code blue or rapid response emergencies under Article 28 facility under the following circumstances:
   a. The RN has successfully completed didactic course work in the methods and proper care and maintenance of the intraosseous access device(s) including contraindications and signs and symptoms of untoward effects of the procedure. CLED41679 via Talent Management (for RN's),
   b. Training must be documented in the RNs personnel file of talent management. (CLED41665 via Talent Management)

2. See Mosby's Nursing Skills Extended Text Intraosseous Access for Maintenance

3. An IV arm board under the extremity may be placed to support and stabilize the extremity/device.

4. Use IV pump or pressure infusion device to improve rate of medication or fluid delivery. IV fluid rates up to 1500 – 2000 ml of fluid per hour may be delivered.

5. The affected limb will be assessed every hour in adults until the device is removed. This assessment will include pulse, color of skin, condition of skin and any swelling or other changes in condition. The assessment will be documented in the EMR.

6. Any complications will be reported to the LIP immediately and the device will be removed by a credentialed LIP. The limb will be elevated and topical ice may be applied. Continued assessment of the limb must be documented in the EMR.

7. The EZ-IO must be replaced with an alternate vascular access within 12 - 24 hours after insertion (or prior to leaving the Emergency Department) by a Credentialed LIP.

III. Approved by

Code Blue Committee	10/11, 4/9/13
Infection Control	6/2/11, 6/6/13
Nurse Policy Council	7/12/11, 8/13
Nurse Executive Committee	6/3/11, 8/6/13
EMAC	5/3/11, 9/3/13
Medical Executive Committee	8/21/13
Board of Directors	

IV. References

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