Vidacare EZ-IO Demonstration

McHenry Western Lake County EMS System
Why use the EZ-IO?

- Most seriously ill or injured patients have little or no peripheral circulation.
- IO takes seconds to establish.
Why use the EZ-IO?

- Venous access in one attempt with one catheter.
- Veins within the IO space do not collapse.
Physiology

- The IO space is very vascular
- Blood flow is steady and generally continues even in the shock state
- Pressure in the IO space is about 1/3 the pressure of the systemic pressure
- Drugs and fluids are rapidly absorbed and transported into the central circulation
Indications

- Inability to gain vascular access after 2 attempts in the following situations:
  - Altered level of consciousness
  - Respiratory compromise
  - Hemodynamic instability

- Cardiac Arrest is an absolute indication per ACLS Guidelines
Contraindications

- Fracture of the tibia or femur
- Previous orthopedic procedures
- Pre existing medical condition (osteo genesis imperfecta)
- Infection at the site of the insertion
- Unable to locate the 3 landmarks
- Excessive tissue over the site
Landmarks

1st landmark - Patella

2nd landmark - Tibial tuberosity, a round/oval “bump” on the front surface of the lower leg, approximately 2 finger widths below the patella

3rd landmark - 1 finger width medial of the tibial tuberosity. This would be the correct spot.
Muscle

Femur
(upper leg bone)

Patella
(knee-cap)

Skin

Patellar Ligament

Tibial tuberosity
(bony thickness below knee-cap)

Fibula

Anterior
(Front view)

Tibia

Medial
(middle facing)
Identify the insertion site
Confirm and clean insertion site
5mm Mark on Needle Set

EZ-I0® sterile needle set attaches to the Power Driver for patient insertion.

Power Driver

Safety Cap

5 mm Mark

Catheter Hub

Stylet Hub

Needle-Sets

EZ-I0 Power Driver and Needle Sets
Three sizes of needles!
Depth gauge on needle

25 mm Needle Set

5 mm mark

Yes

45 mm Needle Set

5 mm mark

Yes

Note that the 5 mm mark is NOT visible above the skin

No
Must see the 5mm Mark!

Note that the 5 mm mark is NOT visible above the skin.
Insert EZ-IO needle set – power driver

Position the EZ-IO Driver at a 90-degree angle to the bone

Do not force the needle set into position “allow the driver to do the work”!
Remove the stylet and syringe flush catheter

Syringe flush the catheter with 10 ml of a sterile solution
The ankle joint is comprised of the Tibia, Talus and Fibula
Begin infusion with pressure

A pressure bag or infusion pump will improve the flow rate
Possible complications

- Extravasation – Leakage
- Dislodgement
- Compartment syndrome
- Fracture
- Pain
- Reduced flow rate
- Infection
To remove the EZ-IO catheter from ANY APPROVED location attach a sterile syringe then rotate clockwise while gently pulling.

During removal maintain a 90 degree angle. Do not rock the catheter!

Remove the catheter within 24 hours