

Clinical Indications:

- Any patient where intravenous access is indicated (significant trauma or mechanism, emergent or potentially emergent medical condition).

Procedure:

1. Saline locks may be used as an alternative to an IV tubing and IV fluid in every protocol at the discretion of the flight crew.
2. Flight crews may elect to use intraosseous access where threat to life exists as provided for in the Intraosseous Access procedure.
3. Use the largest catheter bore necessary based upon the patient's condition and size of veins.
4. Fluid and setup choice is preferably:
 - Lactated Ringers with a macro drip (10 gtt/cc) for trauma or hypovolemia.
 - Normal Saline with a macro drip (10 gtt/cc) for medical conditions, and
 - Normal Saline with a micro drip (60 gtt/cc) for medication infusions.
5. Inspect the IV solution for expiration date, cloudiness, discoloration, leaks, or the presence of particles.
6. Connect IV tubing to the solution in a sterile manner. Fill the drip chamber half full and then flush the tubing bleeding all air bubbles from the line.
7. Place a tourniquet around the patient's extremity to restrict venous flow only.
8. Select a vein and an appropriate gauge catheter for the vein and the patient's condition.
9. Avoid placing an IV in a lower extremity of any patient with Diabetes.
10. Prep the skin with an antiseptic solution.
11. Insert the needle with the bevel up into the skin in a steady, deliberate motion until the bloody flashback is visualized in the catheter.
12. Advance the catheter into the vein. **Never** reinsert the needle through the catheter. Dispose of the needle into the proper container without recapping.
13. Draw blood samples when appropriate.
14. Remove the tourniquet and connect the IV tubing or saline lock.
15. Open the IV to assure free flow of the fluid and then adjust the flow rate as per protocol or as clinically indicated.

Rates are preferably:

- Adult: KVO: 60 cc/hr (1 gtt/ 6 sec for a macro drip set)
- Pediatric: KVO: 30 cc/hr (1 gtt/ 12 sec for a macro drip set)

If shock is present:

- Adult: 20cc/kg fluid boluses repeated as long as lungs are dry and BP < 90. Consider a second IV line. Reassess q 5 minutes.
- Pediatric: 20 cc/kg boluses repeated PRN for poor perfusion.

16. Cover the site with a sterile dressing and secure the IV and tubing.
17. Document the procedure, time and result (success) on/with the patient care report (PCR).

Certification Requirements:

Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the Survival Flight Medical Director.