



Section 14: Appendix 2: Medical Procedures

SECTION 14: PERIPHERAL INTRAVASCULAR (IV)

A	AEMT	A
P	PARAMEDIC	P

INDICATIONS	SIGNS AND SYMPTOMS	CONTRAINDICATIONS
<ul style="list-style-type: none"> Any patient where intravenous access is indicated (significant trauma or mechanism, emergent or potentially emergent medical condition) 	<ul style="list-style-type: none"> Dehydration Hypovolemia Need for drug therapy 	<ul style="list-style-type: none"> Hypersensitivity to IV catheter

PROCEDURES

1. Universal precautions. Gloves.
2. Prepare equipment.
3. Inspect the IV solution for expiration date, cloudiness, discoloration, leaks, or the presence of particles.
4. 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.
5. Place a tourniquet around the patient's extremity to restrict venous flow only.
6. Select a vein and an appropriate gauge catheter for the vein and the patient's condition.
7. Prep the skin with an antiseptic solution.
8. Insert the needle with the bevel up into the skin in a steady, deliberate motion until the blood flashback is visualized in the catheter.
9. Advance the catheter into the vein. **Never** reinsert the needle through the catheter.
10. Dispose of the needle into the proper container without recapping.
11. Draw blood samples when appropriate.
12. Remove the tourniquet and connect the IV tubing or saline lock.
13. Open the IV to assure free flow of the fluid and then adjust the flow rate as per protocol or as clinically indicated.
14. Secure IV using appropriate measures to insure stability of the line.
15. Check for signs of infiltration.
16. Adjust flow rate.
17. Document the procedure, time and result on the patient care report (PCR).

Attempt to draw lab work on all patients when the IV is started, unless the draw will compromise the access site or the patient is in extremis.
Label all blood draws with patient name and DOB

KEY POINTS

- IVs will be started by the Advanced EMT and / or the Paramedic as allowed by each patient care protocol.
- IV placement must not delay transport of any critical patient involved in trauma.
- Generally, no more than two (2) attempts or more than two minutes should be spent attempting an IV. If unable to initiate IV line, transport patient and notify hospital IV was not able to be started.
- IVs may be started on patients of any age providing there are adequate veins and patient's condition warrants an IV.
- Use 1000 ml bags of normal saline for trauma patients and 500 - 1000 ml bags of normal saline for medical patients.
- Any prehospital fluids or medications approved for IV use may be given through intraosseous access.
- All IV rates should be at KVO (minimal rate to keep vein open) unless administering fluid bolus.
- Extreme care should be made to discard of all IV sharps in the appropriate sharps container immediately after cannulation. No sharps should be found on patient / sheets after transport to the hospital.
- Any venous catheter which has already been accessed prior to EMS arrival may be used.
- Upper extremity IV sites are preferable to lower extremity sites.
- Lower extremity IV sites are relatively contraindicated in patients with vascular disease or diabetes.
- In post-mastectomy patients, avoid IV, blood draw, injection, or blood pressure in arm on affected side.
- Use IV catheters appropriately sized for the patient and their condition.



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PROCEDURE FOR STARTING SALINE LOCK

1. Prepare equipment: Flush saline lock with saline (approx. 1 ml) leave saline syringe attached device.
2. The initial attempt should be the dorsum of hand. Further attempts should proceed to the forearm; the antecubital fossa should not be used for saline locks.
3. Apply tourniquet.
4. Cleanse site with alcohol.
5. Use appropriately sized catheter for all saline locks. Perform venipuncture.
6. Attach IV tubing and push remaining saline through tubing and catheter. Remove syringe.
7. Secure IV using appropriate measures to insure stability of the line.
8. Check for signs of infiltration.

KEY POINTS

- Saline lock is preferred for patients who do not need immediate IV medication or fluids.
- Saline locks can be used whenever a patient requires an IV primarily for medication administration, or for any patient where the IV would be run at a TKO rate.
- A saline lock should not be used with a 14 -16 gauge IV unless attached to IV tubing and a bag or normal saline.
- Extreme care should be made to discard of all IV sharps in the appropriate sharps container immediately after cannulation. No sharps should be found on patient or in sheets after transport to the hospital.
- External jugular. (> 12 years of age).

IV Tubing

- For all adult fluid lines, use regular 10 gtt administration tubing.
- For child and infant patients, use tubing sets with 3-way stopcock and extension tubing.

Blood Draws

- Blood specimen drawing should be performed whenever the patient has a medical condition requiring an IV.
- Blood draws are not required if the IV site may become compromised, trauma, or the patient's condition dictates otherwise.
- Blood tubes should be labeled with the patient's name and initialized by the drawer of the specimen, and placed in a biohazard bag.
- If the tube does not draw a vacuum, discard tube and try another of the same color.
- Tube should be rotated upright, not shaken, when mixing additives and blood.
- Blood alcohol levels are to be taken in the ED, not the EMS vehicle.