

<b>CHAPTER</b>	<b>II</b>	<b>Operations</b>
<b>SUBJECT</b>	<b>4</b>	<b>Emergency Medical Services</b>
<b>TOPIC</b>	<b>7</b>	<b>Intravenous Line (IV Set-up)</b>

**A. INDICATIONS**

Instances in which an EMT-Basic may set up an Intravenous (IV) Line

1. Anytime the need for fluid replacement is anticipated.
2. Anytime the need for drug administration may be anticipated.
3. Anytime a CFD Paramedic requests IV set up.

**B. PHYSICAL FINDINGS**

1. Altered mental status/unconscious.
2. Presence of skin that is cold or clammy.
3. Elevated heart rate.
4. Cardiac/traumatic arrest.
5. Evidence of significant trauma.
6. Seizures.
7. Chest Pain.
8. Shortness of Breath.
9. Diabetic Emergency.
10. Severe bleeding.
11. Anaphylaxis/Allergic Reaction.
12. Patients with a systolic blood pressure of 90 or less (or weak radial pulse).
13. As requested by a Cincinnati Fire Department Paramedic.

**C. PROCEDURE**

1. Determine whether the paramedic will initiate IV therapy at the scene, or enroute to hospital.
2. The EMT should practice universal precautions.
3. Obtain the following:
  - IV fluid (500 mL or 1000 mL) of Normal Saline or 0.9% Sodium Chloride
  - Macro drip IV administration tubing labeled 10 gtt, 15gtt or 20 gtt (drops/mL). 60gtt IV sets should be used ONLY if requested by the paramedic.
  - IV extension tubing (optional).
  - Padded IV arm board and one 2' or 4" width kling roll (optional or at request of paramedic).
  - Prepackaged IV start kit OR the following items: tourniquet, alcohol pad.

- Small gauze pad (4' x 4" or 2" x 2").
  - 3 to 4 pieces of 1" inch tape torn into strips approximately 2 to 3 inches in length and optional commercial IV dressing such as Tegaderm®
4. Remove the IV solution bag from the outer packaging. The outer package should be intact, and show no evidence that it was previously opened or otherwise tampered with. The outer package should NOT be composed of foil- like plastic, nor should the IV bag or package contain any red print.
  5. Check the IV solution for the following:
    - Correct fluid type: The correct fluid should be marked on the bag in BLACK print as either "0.9% Sodium Chloride" or "Normal Saline." **WARNING:** If the EMT notes the presence of RED print on the IV bag the EMT should ask the paramedic to double-check the solution. (Red print is sometimes used to indicate the presence of medications or additives in the solution).
    - Ensure that the solution is not expired. The expiration date typically appears in the upper right hand corner of the IV bag (example: EXP 5/05").
    - Check the fluid for clarity. If the liquid appears cloudy, discolored or has particles floating in it, discard the IV bag and obtain a new one.
  6. While holding the IV solution upside down, remove the administration port covering (plastic tab that is either blue or white in color and located next to the tan colored rubber medication port).
  7. Ensure that the roller clamp on the IV administration tubing is dialed to the lowest, or "off" position. If an extension set will be used, attach it to the end that is opposite from the spike. The plastic cap at the end of the IV tubing should remain in place to protect it from being handled or otherwise contaminated.
  8. Place the IV administration set spike into the administration port that was just opened. **IMPORTANT:** The EMT must avoid touching the administration port and the spike. Light manual pressure and/or a twisting motion may be required in order to advance the spike. The EMT should advance the administration line spike into the IV bag, until resistance is met.
  9. Return the bag to the upright position. (At this time, the bag may be hung on an IV hook, tree limb or if necessary, held by another EMS provider or bystander).
  10. Squeeze the drip chamber and fill to the pre-printed line. If the drip chamber becomes over-filled, invert the bag and squeeze the drip chamber to return excess fluid back into the bag.
  11. Completely flush the IV line. Hold the end of the IV tubing, (preferably away from the patient and over a drain or trash can). Move the roller clip to the "open" or upward position. It may be necessary to temporarily remove the IV tubing end cap to allow fluid to pass through the tubing. **DO NOT DISCARD THE CAP.** As always, the EMT-Basic should avoid touching or otherwise contaminating the unprotected

end of the IV line.

12. Return the roller clamp to the “Closed” or down position and re-cap the end of the IV tubing. This should stop the flow of solution from tubing.
13. Assemble the IV supplies listed in #2 of this protocol (i.e., tear tape as directed, place tourniquet, alcohol prep, gauze pad and Tegaderm within easy reach of the paramedic placing the IV line).
14. Do not re-use IV bags or supplies. If for any reason the IV bag cannot be used on the intended patient, it must be discarded. A new IV bag and new set of IV supplies should be used for each patient.

Notes:

1. *Packaging that contains red printing or that is made from material that is silver or foil-like may contain drugs or additives. EMT-Basics are prohibited from setting-up IV lines that meet this description.*
2. *This protocol serves as physician authorization for EMT-Basics to assist paramedics in setting up saline locks. This protocol meets the guidelines published in the Ohio Administrative Code 4765-15-04 (EMT-Basic Scope of Practice).*
3. *Questions regarding the need for IV therapy, the process, or any other concerns that arise before or during the IV set up, should be directed to the paramedic or paramedics involved in patient care. General questions or concerns regarding IV set up or administration should be forwarded to the medical director.*
4. *It is ESSENTIAL to flush the IV tubing. A failure to completely flush the IV tubing can cause the development of an air embolus or even death.*
5. *Contamination of the IV tubing or ports can lead to severe infections (both local and systemic) or even death.*
6. *If the EMT is unsure of whether an IV bag, tubing or other supply has been, grossly contaminated, or tampered with, keep the following in mind: “When in doubt...throw it out.”*
7. *EMT-Basics should assist paramedics to ensure that no one (firefighter, police officer, health care provider, family member or bystander) is in contact with an IV bag or IV line during defibrillation attempts.*
8. *The paramedic bears the ultimate responsibility for intravenous lines, set up by the EMT-Basics. It is recommended that the EMT and the Paramedic work collectively to ensure that the proper procedures have been followed.*