Division 1
Introduction to Advanced Prehospital Care

IV Administration Sets (1 of 2)
- **Macrodrip**
  - 10 gtts = 1 mL, for giving large amounts of fluid
- **Microdrip**
  - 60 gtts = 1 mL, for restricting amounts of fluid
- **Blood tubing**
  - Has a filter to prevent clots from blood products from entering the body
- **Measured volume**
  - Delivers specific volumes of fluids

IV Administration Sets (2 of 2)
- **IV extension tubing**
  - Extends original tubing
- **Electromechanical pump tubing**
  - Specific for each pump
- **Miscellaneous**
  - Some sets have a dial that can set the flow rates.
Paramedics may administer crystalloid solutions en route to the emergency department.

In-Line Intravenous Fluid Heaters

- IV fluids can be heated to near body temperature with heating devices.

Intravenous Cannulas

- Over-the-needle catheter
- Hollow-needle catheter
- Plastic catheter inserted through a hollow needle
Cleanse the venipuncture site.

Insert the intravenous cannula into the vein.

Withdraw any blood samples needed.
Connect the IV tubing.

Turn on the IV and check the flow.

Secure the site.
Label the IV solution bag.

Peripheral Intravenous Access in an External Jugular Vein

Place the patient in a supine or Trendelenburg position.
Turn the patient’s head to the side opposite of access, and cleanse the site.

Occlude venous return by placing a finger on the external jugular just above the clavicle.

Point the catheter at the medial third of the clavicle and insert it, bevel up, at a 10°–30° angle.
Enter the jugular while withdrawing on the plunger of the attached syringe.

Intravenous Access With a Measured Volume Administration Set

Prepare the tubing.
Open the uppermost clamp and fill the burette chamber with approximately 20 mL of fluid.

Close the uppermost clamp and open the flow regulator.

Intravenous Access with Blood Tubing
Insert the flanged spike into the spike port of the blood and/or normal saline solution.

Squeeze the drip chamber until it is one-third full and blood covers the filter.

Attach blood tubing to the intravenous cannula or into a previously established IV line.
Open the clamp(s) and/or flow regulator(s) and adjust the flow rate.

Intravenous Bolus Administration

Prepare the equipment.
Prepare the medication.

Check the label.

Select and clean an administration port.
Pinch the line.

Administer the medication.

Adjust the IV flow rate.
Monitor the patient.

Intravenous Infusion Administration

Select the drug.
Draw up the drug.

Select IV fluid for dilution.

Clean the medication addition port.
Inject the drug into the fluid.

Mix the solution.

Insert an administration set and connect to the main IV line with needle.
Heparin/Saline Lock

Electromechanical Infusion Devices

- Infusion controllers
- Infusion pumps

Infusion Pump
**Blood Tube Sequence**

<table>
<thead>
<tr>
<th>Anticoagulant</th>
<th>Color of Top</th>
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<tbody>
<tr>
<td>none</td>
<td>red</td>
</tr>
<tr>
<td>citrate</td>
<td>blue</td>
</tr>
<tr>
<td>heparin</td>
<td>green</td>
</tr>
<tr>
<td>EDTA</td>
<td>purple</td>
</tr>
<tr>
<td>fluoride</td>
<td>gray</td>
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**Ethylenediaminetetraacetic acid**

**Vacutainer and Luer Lock**

**Obtaining a blood sample with a 20 mL syringe**
Remove any IV that will not flow or has fulfilled its need.