VENIPUNCTURE

You are the RN on a busy med-surg unit, and you have just received your 5th new client admission of the shift. Your client is a 56 year old female admitted with complaints of weakness, anorexia, and fatigue that has lasted for several weeks. Physician orders include labs for a CBC, type and cross match, and electrolytes; VS every 4 hours; and an IV of D5W to infuse at 75 ml/hr.

1. Before you start the IV, what do you need to assess or know about this client?

2. What will you need to know about the IV infusion?

3. What equipment will you need?

What are the indications for intravenous therapy?
- Hydration
- Replace electrolytes
- NPO patients
- Nutrition
- Medication administration
- Intermittent or emergency medication
- Blood and blood products
- Volume expanders

In which sites can intravenous therapy be initiated?
- Veins of the hands and arms (a.k.a. “peripheral”: metacarpal, basilic, cephalic)
- Antecubital veins into the superior vena cava (PICC – by specially trained RN)
- Internal or external jugular or subclavian vein (a.k.a. “central” CVC – by physician only)

Which sites are best?
- Ulna and radius bones in the forearm provide natural splints for basilic and cephalic veins. Provide greater freedom of movement for the client.
- Metacarpals OK for intermittent medication administration of non-irritating solutions. Tend to be smaller veins.
- See “Practice Guidelines: Vein Selection” Techniques, pg. 476
**Which veins should be avoided?**
- Antecubital veins may be used in an emergency, but should be reserved for lab draws or long-term PICC lines.
- Any site where flexion occurs and will interfere with the flow of infusion.
- Distal to previous venipuncture site in the same vein.
- Veins damaged by previous use, phlebitis, infiltration, or sclerosis
- Veins with bifurcations and valves
- Sites of compromised circulation (mastectomy, paralysis)
- Some highly visible veins tend to roll away from the needle

**What are the characteristics of “good” veins?**
- Easily palpated, feels soft and full, bouncy
- Naturally splinted by bones
- Large enough to allow adequate circulation around the catheter

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**Venipuncture Procedure**

**Assessment**
- Baseline VS
- Hydration & skin turgor
- Allergies: tape, iodine
- Bleeding tendencies, anticoagulant therapy
- Disease or injury to extremities
- Status of veins to determine appropriate venipuncture site

**Assemble and prepare equipment**
- Open primary administration set (tubing), check for kinks, and **close the roller clamp**.
- Remove the protective cover from bag of IV fluid. Inspect bag for cloudiness, precipitates in solution, or leaks. Remove cap from port to be used for the tubing.
- Spike the bag and **fill the drip chamber ½ full**. Hang the bag on the IV pole.
- Using the roller clamp, slowly prime the tubing into a sink or waste basket, making sure to invert the back-check valve and each injection port on the tubing before the fluid passes each one so that these spaces will be filled with fluid and no air bubble pockets form.
- Label the tubing with date time and initials (print information on a piece of tape if IV labels unavailable).

**Gather**
- IV catheter
- Tape
- Clean gloves
- Sterile gauze or transparent occlusive dressing
- Antiseptic swabs
- Tourniquet
- Towel or waterproof pad
- Arm board, if needed

**Explain to your client what you are going to do, why, and how she/he can help.**
- Complete other scheduled care first unless initiation of IV therapy is urgent.
• Make sure that the client’s clothing or gown can be removed over the IV if necessary.
• Provide for privacy

Wash your hands
• Place equipment at bedside, tear tape, have IV tubing or saline lock within easy reach

Select the venipuncture site
• Apply the tourniquet approximately 6 - 8 inches above area. Check for radial pulse.
• Use the most distal site of the non-dominant arm/hand
• Clip hair if necessary. Do not shave.
• To dilate the vein:
  Ask the client to clench and unclench the fist
  Stroke the vein distal to proximal
  Lightly tap the vein
  Ask client to lower the extremity to a dependent position
  If unable to dilate vein, release tourniquet and apply heat for 10-15 minutes
• Place towel or pad under selected arm

Apply clean gloves

Clean the selected site
• Wipe using circular motion, inside to out and allow to dry - alcohol (dry 60 seconds), betadine (dry 2 minutes).
• May use Chloraprep – scrub across site, dry 30 seconds.

Perform venipuncture
• Pull skin taut with non-dominant hand
• Insert “over-the-needle” catheter bevel up at a 15 – 30 degree angle
  Direct approach on top of the vein
  Indirect approach from the side
  You may feel a “pop” as needle punctures vein
• After blood appears in the blood chamber (“flashback”), lower the needle and catheter until almost parallel with extremity.
• Insert the needle and catheter about ¼ inch further, then advance only the catheter the rest of the way into the vein.

Release the tourniquet!

Connect infusion set
• Remove cap from distal end of IV tubing or saline lock.
• Remove needle from catheter.
• Attach IV tubing or saline lock.
• Begin infusion of fluid or flush lock with saline
• Look for signs of infiltration

Tape catheter
• U or V method
Apply dressing
  • Label site (date, time, catheter gauge, initials) and tubing (date, time, initials)

Loop and tape tubing to prevent dislodging catheter.

Adjust infusion flow as needed.

Check site and infusion frequently.