Adding Meds to IV Fluid Container

Purpose: to provide and maintain a constant level of a medication in the blood; to administer well-diluted medications at a continuous and slow rate.

1. **Assess IV site** for s/s infiltration, phlebitis, infection, and leaking.
2. **Check physician’s order, client allergies, baseline VS, compatibility of IV fluid with medication prescribed.**
3. Follow 3 checks of medication administration.
4. **Clean injection port with alcohol.**
5. Carefully inject medication into bag.
6. Mix by rotating bag gently.
7. Print name and dose of medication, date, time and initials on label and attach to bag. Do not write directly on the bag.
8. Clamp tubing, spike bag, fill drip chamber ½ full, and prime tubing.
9. **Always follow the 5 Rights of medication administration and monitor for expected client response.**

You will perform this skill using a secondary or “piggyback” bag.

Hanging Intermittent (“secondary”, “piggyback”) Infusions

Purpose: to administer a medication mixed in a small amount of IV solution. Usually given at regular intervals over 30 to 60 minutes. Two types of set-up: Tandem – attached to the primary tubing at the lower port and allows either intermittent or simultaneous infusion. Piggyback – more commonly used, attached to primary tubing at the **highest port** and allows only intermittent infusion. **Primary bag must be hung lower than secondary bag.**

1. Assess IV site for s/s infiltration, phlebitis, infection, and leaking.
2. Check physician’s order, client allergies, baseline VS, **compatibility of IV fluid with medication prescribed.**
3. Follow 3 checks of medication administration.
4. Clamp secondary (piggyback) tubing, spike bag, fill drip chamber ½ full, and prime tubing.
5. Clean **upper** injection port on primary tubing with alcohol.
6. Attach secondary tubing to port.
7. Open clamp on secondary tubing and regulate infusion rate using **roller clamp on primary tubing.**
8. Check infusion, IV site, and client response in 10 minutes and frequently during the infusion.
9. After piggyback is infused, reset primary line to infuse at prescribed rate.

Other types of intermittent infusion delivery include:
- syringe pump or mini-infuser – often used with patient controlled analgesia (PCA).
- volume controlled infusion set or “buretrol” – used when volume control is critical as in children or elderly clients. Volume of solution can range from 50 to 150 ml.
- IV push or bolus – medication given directly into circulatory system.

**IV push or Bolus**

Purpose: To administer **undiluted** medication directly into systemic circulation, **over a short period of time**.

Disadvantages: 🙁 Use extra caution because…
1. Error cannot be corrected
2. Drug may be irritating to vein

**Always check maximum concentration recommended and rate of administration.** Will see immediate effect of medication. Used in emergencies or for drugs that cannot be diluted. Pain medication (e.g., morphine sulfate) can be given via this route. May be given through a saline lock or an existing line at the injection port closest to the IV site.

1. **Before pushing an undiluted drug directly into the vein, always assess the IV site for patency (check for blood return) and look up the recommended administration rate (how much medication given over how many minutes).**
2. If using a saline lock, flush the lock with 1 ml. normal saline. If using an existing line, make sure that drug is compatible with IV solution in tubing (e.g. Dilantin is not compatible with anything except normal saline).
3. Inject drug over recommended time. If using an existing line, clamp (pinch) tubing above the injection port before injecting drug.
4. Flush lock with 1 ml. normal saline or release pinched tubing on existing line.
5. Observe closely for client reaction to drug.

**Changing Solution, Tubing, and Dressing**

Purpose: To maintain the infusion of required fluids; maintain sterility of IV system and decrease incidence of infection and phlebitis; maintain patency of the IV tubing; prevent infection at the IV site and the introduction of microorganisms into the bloodstream.
It is a good practice to have the new IV solution prepared and labeled approximately 30 minutes in advance. Know your agency’s policy for frequency of tubing changes. May range anywhere from 24 to 96 hours.

**NOTE: Steps 4-8 and 13 will no longer be included in this check-off.**

1. Assess IV site, allergies to tape or iodine, patency of system, appearance of dressing, date and time of last dressing/tubing change.
2. Check physician’s orders for changes in IV orders, solution, or rate.
3. Follow 3 checks of medication administration for new solution.
4. Open new primary administration set (tubing), check for kinks, and close the roller clamp.
5. 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.
6. Spike the bag and fill the drip chamber ½ full. Hang the bag on the IV pole.
7. 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.
8. Label the tubing with date time and initials (print information on a piece of tape if IV labels unavailable).
9. Clamp the IV tubing. Take down the old bag of solution, remove the spike maintaining sterility and spike the new solution bag. Hang bag on IV pole and regulate the infusion rate.
10. Prepare equipment for dressing change: 2x2 gauze, new dressing, tape, and alcohol/betadine.
11. Place a towel under the client’s arm.
12. Don gloves and gently remove old dressing in the direction of the insertion of the catheter so as not to pull the catheter out.
13. Place 2x2 under the hub of the catheter. Clamp the old tubing, hold the catheter hub securely, remove the old tubing, remove the protective cap from the new tubing and secure it to the catheter hub. Open the roller clamp to start the flow of fluid.
14. Remove the tape holding the catheter in place (chevron), clean the IV site according to agency policy, apply new chevron and new dressing. Tape down the tubing. Apply label to new dressing.
15. Recheck the infusion rate.

**Intermittent Devices (Saline or Heparin Lock, Heplock, INT)**

Purpose: To permit the administration of IV fluids on an intermittent basis. Provides greater freedom of movement for client. Provides intravenous access in case of emergency.

1. Assess IV site for s/s infiltration, phlebitis, infection, and leaking.
2. Check physician’s order.
3. Prepare equipment: Draw up 2 mls of sterile saline in a 3 ml syringe. Prime intermittent infusion cap with sterile saline. Save the remainder to flush after lock is in
place. Gather tape, alcohol, and 2x2 gauze. Draw up 1 ml of heparin (10 u/ml – 100 u/ml) if protocol dictates.

4. **Clamp IV tubing** and remove any tape from the site.

5. Don gloves. Place 2x2 under the catheter hub. Hold the hub securely, remove old tubing from the hub and insert primed saline lock.

6. Flush the lock with saline to insure patency. Follow with heparin per protocol.

7. Tape lock in place. Document date and time IV converted to lock and site condition.

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**Blood Administration**

Purpose: To restore blood volume after severe hemorrhage, restore the capacity of the blood to carry oxygen, provide plasma factors such as antihemophilic factor (AHF) or platelets.

Under Ohio law, LPNs **cannot** administer blood, but may monitor the client who is receiving blood or blood products; therefore, it is imperative that the LPN knows s/s of transfusion reaction.

The client (or legal guardian) must sign a consent form before blood may be administered. When the blood is picked up from the lab, **verify** with the lab tech the information on the blood requisition form and the blood bag (client name and number, blood type, Rh factor, expiration date). At the bedside prior to the transfusion, reconfirm the information with another RN. All information must match. Check the blood bag for any abnormal color, clumping, or gas bubbles.

1. Adverse reactions can be: hemolytic (incompatibility), febrile, allergic, circulatory overload, sepsis. S/S to watch for: chills, fever, headache, backache, flushed skin, itching, wheezing, chest pain, vomiting, and dyspnea. See table on page 1400 (Kozier & Erb, 7th ed.).

2. Blood is hung via a tandem set and should **only be hung with 0.9% normal saline**.

3. Use an **18 gauge or larger IV catheter**. Anything smaller may lyse the blood cells and render the blood useless to the client.

4. Monitor VS regularly according to agency policy. For example: immediately before starting the transfusion, 15 minutes after, 30 minutes later, and then hourly. Be aware of any rise in temperature or pulse and report immediately. The earlier the reaction, the more severe it usually is. **If reaction is suspected, discontinue and notify physician.**

5. Monitor the IV site carefully. Note any change in the drip rate, especially if it begins to slow down (IV sites can clot off) or if it speeds up (danger of fluid volume overload).

6. Any single unit of blood should hang no longer than 4 hours.