

Mosby's Nursing Video Skills

Procedure Guideline for Changing Intravenous Tubing and Fluids

1. Verify the health care provider's orders.
2. Gather the necessary equipment and supplies.
3. Perform hand hygiene.
4. Introduce yourself to the patient and family, if present.
5. Provide for the patient's privacy.
6. To change the intravenous tubing:
 - A. Identify the patient using two identifiers, such as the patient's name and birth date or name and account number, according to your agency's policy. Compare these identifiers with the information on the patient's identification bracelet.
 - B. Prepare the patient by explaining the procedure, its purpose, and what is expected of him or her.
 - C. Coordinate tubing changes with solution changes when possible.
 - D. Open the new infusion set and connect any add-on pieces, such as filters and extension tubing. Keep the protective coverings over the infusion spike and distal adapter. Secure all connections.
 - E. Apply clean gloves. If the patient's IV cannula hub is not visible, remove the IV dressing. Do not remove the tape securing the cannula to the skin.
 - F. Hang the solution bag on the IV pole.
 - G. Prepare the infusion tubing with an existing continuous IV infusion bag:
 - (1) Move the roller clamp on the new IV tubing to the "off" position.
 - (2) Slow the rate of the infusion through the old tubing to the KVO (keep vein open) rate, using the electronic infusion device (EID) or the roller clamp.
 - (3) Compress and fill the drip chamber of the old tubing, filling 1/3 or 1/2 full or according to the manufacturer's recommendations.
 - (4) Invert the container, and remove the old tubing. Keep the spike sterile, and hold it upright. Alternatively, tape the old drip chamber to the IV pole without contaminating the spike.
 - (5) Place the insertion spike of the new tubing into the solution container. Hang the solution bag on the IV pole, compress and release the drip chamber on the new tubing, and fill the drip chamber one-third to one-half full.
 - (6) Slowly open the roller clamp, remove the protective cap from the adapter if necessary, and prime the new tubing with solution. Stop the infusion, and replace the cap. Place the end of the adapter near the patient's IV site.
 - (7) If the EID is in use, place the pump on "Pause." Turn the roller clamp on the old tubing to the "off" position and remove it from the EID channel.
 - (8) Remove the old tubing. Place the primed new pump tubing in the pump regulator chamber.
 - (9) Insert the new tubing into the channel.
 - H. To prepare tubing with an extension set or a saline lock:
 - (1) If short extension tubing is needed, use sterile technique to connect the new injection cap to the new extension set or tubing if necessary.

- (2) Swab the injection cap with an antiseptic swab. Insert the syringe with 3 to 5 mL of saline solution, and inject the solution through the cap into the extension set.
- I. Reestablish the infusion:
 - (1) Gently disconnect the old tubing from the extension tubing or from the IV catheter hub, and quickly insert the adapter of the new tubing or saline lock into the new extension tubing or into the IV catheter hub.
 - (2) For a continuous infusion, open the roller clamp on the new tubing and regulate the drip rate using the roller clamp. If using an EID, restart the pump.
 - (3) Attach a piece of tape or a preprinted label with the date and time of the tubing change onto the tubing below the drip chamber.
 - (4) Form a loop of tubing, and secure it to the patient's arm with a strip of tape.
- J. Remove and discard the old IV tubing. If necessary, apply a new dressing at the IV site. Remove and dispose of your used gloves. Perform hand hygiene.
7. To change the intravenous solution:
 - A. Gather all necessary equipment.
 - B. Identify the patient using two identifiers, such as the patient's name and birth date or name and account number, according to your agency's policy. Compare these identifiers with the information on the patient's identification bracelet.
 - C. Have the next solution prepared at least 1 hour before it is needed. If the solution is prepared at the pharmacy, ensure that it has been delivered to the patient care unit. Allow the solution to warm to room temperature if it has been refrigerated. Check that the solution is the correct one, and ensure that it has been properly labeled. Check the expiration date. Ensure that any light-sensitivity restrictions are followed.
 - D. Prepare the patient and the family caregiver by explaining the need for additional or different IV fluids, and what is expected of the patient.
 - E. Perform hand hygiene.
 - F. Change the solution when the fluid remains only in the neck of the container—at about 50 mL—or when a new type of solution has been ordered.
 - G. Prepare the new solution for changing. If you are using a plastic bag, hang the bag on the IV pole and remove the protective cover from the IV tubing port. If you are using a glass bottle, remove the metal cap and metal and rubber disks.
 - H. For gravity infusions, stop the flow of the existing solution by closing the roller clamp. For infusions controlled by an EID, press the "Pause" button.
 - I. Remove the old IV fluid container from the IV pole, holding the tubing port pointing upright.
 - J. Quickly remove the spike from the old solution container and, without touching the tip, insert the spike into the new container.
 - K. Hang the new container on the IV pole, and check for air in the tubing. Remove any bubbles in the tubing by stretching the tubing downward, and tapping the tubing with a finger. The bubbles will rise into the drip chamber.
 - L. Ensure that the drip chamber is one-third to one-half full. If the drip chamber is too full, decrease the level of fluid by removing the bag from the IV pole, pinching off the tubing below the drip chamber, inverting the container, squeezing

- the drip chamber, releasing it, turning the solution container upright, and releasing the pinch on the tubing.
- M. For gravity infusions, regulate the flow by reopening and adjusting the roller clamp on the tubing to the ordered rate. For infusions using an EID, resume the infusion by pressing the “Start” button. If the ordered rate has changed, it will be necessary to reprogram the pump.
 - N. For gravity infusions, place a time label on the side of the IV fluid container and record on the label the time at which the bag was hung. Also label it with the time of anticipated completion, and mark it at appropriate intervals as it empties. If you are using plastic bags, mark only on the label, and not on the container.
8. Help the patient into a comfortable position, and place toiletries and personal items within reach.
 9. Place the call button within easy reach, and make sure the patient knows how to use it to summon assistance.
 10. To ensure the patient’s safety, raise the appropriate number of side rails and lower the bed to the lowest position.
 11. Dispose of used supplies and equipment. Leave the patient’s room tidy.
 12. Perform hand hygiene.
 13. Document newly hung IV solutions, including the solution type, total volume, and rate of infusion in the MAR.