PURPOSE: To assure continuity of procedure for intermittent fluid and medication therapy for the adult patient.

MODES OF ADMINISTRATION: Delivery of intermittent therapy may be accomplished by utilizing:

1. Primary IV tubing with secondary set.

   NOTE: Solution hanging on primary tubing must be compatible with the solution hanging on the secondary tubing.

2. Primary IV tubing and direct intravenous (IV) push via needleless port site on tubing.

3. HARVARD Mini-Infuser Pump—refer to Nursing Procedure (inv14).

4. Primary IV tubing via port closest to the insertion site when a HEMA Y-Type Blood Set is being used to infuse large volume parenterals.

CAUTION NOTES:

1. Check for medication allergies and compatibilities of drugs and solution before administering any type of therapy. The following resources are available:
   a. Intramuscular (IM)—IV compatibilities book/chart on the unit.
   b. Literature accompanying medication.
   c. Pharmacy staff
   d. Formulary
   e. IV therapy team
   f. Computer (check allergies in SCM)

2. Verify medication labels with Medication Administration Record (MAR) and patient’s identification bracelet before administering any drugs.

EQUIPMENT: The equipment will vary with the mode of administration. Some or all of the following may be required.

1. Alcohol wipes
2. Prescribed medication
3. Prescribed solution and tubing
4. Tubing label
5. Needleless Adapter or connector
6. Venipuncture equipment

PROCEDURE: PIGGYBACK BAG METHOD WITH CONTINUOUS PRIMARY INFUSION:

1. Check for allergies and compatibility of medication with solution infusing.
2. Connect the IVPB bag to the Secondary Piggyback Tubing.
3. Prime the tubing.
4. Hang IVPB on IV pole.
5. Using enclosed plastic hook, lower the primary IV solution below the level of the IVPB.
6. Scrub the injection port vigorously with friction closest to the IV solution bag with 70% alcohol and allow to dry.
7. Connect tubing to needleless valve or connector.
8. Open the clamp on IVPB tubing.
9. Adjust the DIAL-A-FLO or adjust the rate.
10. When the IVPB is complete, the primary IV will begin to infuse at the set rate.
11. Clamp the IVPB tubing. Remove the primary IV from the hook and return it to the IV pole. Readjust the primary IV rate.

   SPECIAL NOTE: The primary IV will automatically begin to flow at the rate set for IVPB when the IVPB is completely infused.

12. Leave the empty piggyback on the tubing until time for the next administration.
13. Prior to hanging the next IVPB, back-flush the secondary tubing to clear the air from the tubing and re-prime it. This is accomplished by lowering the IVPB below the level of the LVP and opening the clamp. Use only enough fluid to clear the tubing and re-prime.
14. Change the peripheral IV tubing every 96 hours.
SPECIAL NOTE: A secondary tubing will be used for IVPB administration when a Hema Y-Type Blood Set is in use for pre-surgical or post-surgical fluids. This will be inserted into the port proximal to the patient.

PIGGYBACK BAG METHOD WITH CONTINUOUS PRIMING INFUSION FOR USE WITH LIFECARE 5000 “PLUM” PUMP:

1. Check for allergies and compatibility of medication with solution infusing.

2. Establish a primary line.

3. Prepare and suspend the secondary container.

4. Scrub the port with alcohol vigorously with friction. Attach a standard secondary set to needleless port on the dual chamber cassette.

5. Open clamp on secondary set.

6. Press RESET and REVIEW CHANGE to access the MENU in the message screen.

7. CHANGE PRIMARY will appear. Press NO.

8. Set SECONDARY and press YES. If a history is present, CHANGE SECONDARY or REPEAT SECONDARY will appear.

9. CONCURRENT DELIVERY will appear which allows the primary and secondary fluids to be delivered simultaneously at different rates. Press YES if this is desired and then continue with steps 11-13. The secondary rate, plus the primary rate, cannot exceed 800 ml or be lower than 2 ml. If the primary rate needs to be changed, press NO and up or down simultaneously.

10. Enter Secondary rate and dose limit by pressing arrows up or down.

11. Respond Yes or No to question “Deliver ALL Secondary Fluid”.

   NOTE: Answering Yes allows automatic delivery of any overfill or under-fill (+ 10%) that may be present in the secondary container. After emptying, flow will automatically revert to primary.

12. Press REVIEW to confirm both primary and secondary
settings or press START. Total Volume screen displays each and a combined total volume of both primary and secondary deliveries. Record these starting values as directed by hospital protocol.

13. At completion of Secondary Dose, the LifeCare 5000 automatically reverts to the primary rate and dose limit.

14. After converting to primary, the screen reads “PRIMARY” and displays the primary rate.

TO STOP THE LIFECARE 5000 “PLUM” DURING OPERATION, ALWAYS PRESS RESET BEFORE OPENING THE DOOR LATCH. ALWAYS CLOSE THE UPPER SLIDE CLAMP OR REMOVE SECONDARY CONTAINER FROM SECONDARY PORT TO PREVENT MIXING OF PRIMARY AND SECONDARY SOLUTIONS.

SINGLE DOSE SECONDARY USING SYRINGE CONTAINER WITH CONTINUOUS PRIMARY INFUSION FOR USE WITH LIFECARE 5000 “PLUM” PUMP:

This pump may be used instead of the Harvard Pump unless the IV solutions/medication are incompatible.

1. Check for allergies and compatibility of medication with solution infusing.

2. Establish a primary line.

3. Obtain syringe of pre-filled medication.

4. Scrub the port with alcohol vigorously with friction. Attach syringe to needleless port on the dual chamber cassette.

5. Press RESET and REVIEW CHANGE to access the MENU on the message screen, which then prompts you to select “SET SECONDARY.”

6. Enter secondary rate and dose limit by pressing the arrows up or down.

7. CHANGE PRIMARY will appear. Press NO.

8. SET SECONDARY and press YES. If a history is present, CHANGE SECONDARY or REPEAT SECONDARY will appear.

9. CONCURRENT DELIVERY will appear which allows the primary and secondary fluids to be delivered simultaneously at different rates. Press YES if this is
desired and then continue with steps 11-13. The secondary rate plus the primary rate cannot exceed 800 ml or be lower than 2ml. If the primary rate needs to be changed, press NO and up or down simultaneously.

10. Press REVIEW to confirm both primary and secondary settings, or press START.

11. NOTE: Screen now reads: “PUMPING SECONDARY”…The SECONDARY dose will be delivered FIRST. The primary IV solution will NOT be infusing at the same time.

12. The Life Care 5000 automatically reverts to the primary rate and dose limit.

13. After reverting to primary, the screen reads “PRIMARY” and displays the primary rate.

14. Some Useful Hints and Suggestions:
   a. If you must open the door latch, remember to press RESET and remove the syringe FIRST to prevent possible retrograde fluid flow.
   b. Cumulative Volume screen displays combined total volume of both primary and secondary deliveries. Record these values as directed by hospital protocol.

DIRECT IV PUSH VIA INJECTION SITE ON TUBING:

1. Check for allergies and compatibility of medication with solution infusing.

2. Scrub the port with alcohol vigorously with friction. Use needleless port closest to catheter.

3. Pinch tubing immediately above injection port to stop fluid flow while injecting medication.

4. Slowly and steadily inject medication no faster than 1ml per minute unless otherwise ordered by physician or recommended in literature.
5. Periodically release flow of IV fluid to dilute medication.

6. If medication is not compatible with existing infusing solution, clamp off the tubing. Slowly flush tubing with 10 ml of Normal Saline before and after administering the medication.

CAUTION NOTE: Flushing after direct intravenous medication push is also infused at 1 ml per minute until the medication clears the tubing.

TO ADMINISTER IV PUSH DRUG VIA NEEDLELESS CONNECTOR:

1. Prepare drugs:
   
   2.5 ml of sterile Normal Saline as flushing solution x 2.

2. Scrub the port with alcohol vigorously with friction. Check patency of adapter and condition of site. Slowly inject saline flush to reinforce patency and flush.

3. If no resistance, swelling, or discomfort occurs, administer drug at rate of not more than 1 ml per minute unless literature recommends otherwise.

4. If more than one medication is given at one time, flush with at least 2.5 ml of Normal Saline solution between medications.

5. When administration is complete, flush again with 2.5 ml of Normal Saline slowly to clear drug.

6. Document medication on MAR.

TO ADMINISTER LARGE VOLUME IV FLUIDS OR BLOOD WHEN ADAPTER IS IN PLACE:

1. Prepare solution and tubing.

2. Scrub the port with alcohol vigorously with friction. Check patency of adapter by slowly injecting saline flush.

3. Attach IV tubing to adapter and secure in place.

4. Regulate fluid flow.

5. After infusion/transfusion is administered, flush with 10 ml of sterile normal saline and may repeat if needed using 10 ml normal saline to clear the line (change connector if line is still not cleared).
TO ADMINISTER SMALL VOLUMES OF FLUIDS OR MEDICATION BY PIGGYBACK INTO ADAPTER:

1. Prepare solution and tubing according to the product information.

   NOTE: If this is not the initial use of the tubing, check the level of fluid in the tubing and re-prime using the IVPB solution.

2. Check patency of adapter by slowly injecting saline flush.

3. Scrub the connector with friction thoroughly with an alcohol swab and allow to dry. Attach sterile tubing to adapter. Secure with a piece of tape.

4. Regulate to prescribed rate. Infuse piggyback.

5. When infused, clamp the tubing, flush adapter with 2.5 ml of sterile Normal Saline. Tubing must be changed every 96 hours.

TO ENSURE CONTINUED PATENCY OF IV SITE:

1. In the event that no IV fluids or medications are administered during the preceding eight-hour period, check patency and flush with 2.5 ml of sterile Normal Saline once per shift and schedule on MAR sheet. At the time of flushing, check site for evidence of swelling, redness, or pain. If any symptoms observed, remove and restart in new venipuncture site.

2. Site, tubing, and transparent dressings are changed every 96 hours. Exceptions are if the physician orders it differently, there is limited line site availability, or the patient refuses. Any exceptions must be documented in the medical record.

3. Document location, condition of site, flush patency and the dressing, and connector adapter changes in the IV Assessment section of the Nursing Assessment Flowsheet.

PREPARATION OF MEDICATION NOT PREMIXED BY PHARMACY:

1. Check accompanying literature for recommended dilution.

2. Dilute and dissolve medication. Check for clarity and un-
dissolved particles.

3. To add medication via an additive port, scrub the port vigorously with 70% Isopropyl Alcohol and allow to dry. (Note: Use at least a 5/8-inch length needle).

4. Add medication to solution as ordered. Solution may be one of the following:
   a. Under-fill bags of 5% Dextrose in water in 50 or 100-ml bags.
      NOTE: Use Normal Saline, if ordered, or if D5W is incompatible with medication to be administered.
   b. Large volume bags of 250-, 500-, or 1000-ml of prescribed fluid.

5. Check for precipitation, cloudiness, particulate matter, crystallization, or discoloration.

POINTS TO REMEMBER:

1. Inject no more than 1 ml of IV Push medication per minute unless literature states otherwise or as otherwise ordered by the physician.

2. Always check IV site and device for patency.

3. Include volume of piggyback in patient’s fluid intake.

4. When following one medication with another, always flush tubing with at least 2.5 ml Normal Saline slowly before injecting the next medication.

DOCUMENTATION:

1. Medication Administration Record (MAR): Document medication per established procedure.

2. SCM I & O Graphic Flowsheet: Enter intake.

3. Nursing Reassessment Flowsheet (IV Assessment): Document the site inspections, reasons for restarts, tubing changes, dressing changes, and any other information pertinent to the patient’s condition.
REFERENCE(S): North Chicago, IL: Author.

REVIEWING AUTHOR(S):
Yvonne Cales, RN, MSN, Clinical Educator
Maribeth Desiongo, RNC, BSN, MA, Clinical Educator

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