



VOLUME 5: NURSING SERVICES	Effective Date: 8/1/10
CHAPTER 16C	Revision Date(s):
INTRAVENOUS MEDICATION ADMINISTRATION	Attachments: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

I. POLICY

1. Intravenous (IV) medication shall be administered only upon the order of a provider.
2. Intravenous medications shall only be administered by a registered nurse (RN).
3. An infusion containing additives/medications shall be administered via an infusion pump.
4. With the exception of known products (i.e., blood or medications for which the manufacturer recommends filtration) filters are not necessary for IV administration.
5. Intravenous medications shall not be administered by direct vein access (needle and syringe directly into vein).
6. Pharmacy should be consulted for any questions regarding appropriate monitoring parameters, possible adverse events, as well as any other problems regarding administration of medications.

II. PURPOSE

To administer medications when a rapid response is desired. To administer medications when a continuous blood level is desired.

III. RESPONSIBILITIES

The Chief Executive Officer/Health Care Manager (CEO/HCM) at each institution is responsible for implementation of this policy in collaboration with the Chief Nurse Executive/Director of Nursing (CNE/DON).

IV. PROCEDURE DETAILS

A. Equipment

- Medication as prescribed
- Antimicrobial prep swab (alcohol or iodine based)
- A 10 to 20 ml sterile safety syringe with 21 or 23 gauge needle or needleless connector
- Secondary intravenous solution if “piggyback” administration
- Label
- Secondary infusion tubing, if required
- Sharps container

B. General Instructions

Intravenous (IV) medications may be administered:

1. Into primary IV tubing injection port
2. By secondary IV solution “piggyback”
3. By Saline lock adapter

V. PROCEDURE

A. Secondary “Piggyback” Administration

1. Verify the provider’s order and identify the patient-inmate.

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2. Transcribe the order onto the Medication Administration Record (MAR).
3. Check the name of the medication, dosage, frequency of administration, type and quantity of secondary solution, expiration date, method of administration, and appropriateness for IV administration.
4. If the medication has been prepared in solution by the pharmacist, check the provider's order with the label on the solution including the patient-inmate's full name. Return the medication to pharmacy if the label is incomplete or in conflict with the provider's order.
5. Check the patient-inmate's health record for any known allergy.
6. Wash hands and put on gloves.
7. Assemble medication in solution, sterile antimicrobial swab, and secondary infusion tubing at the patient-inmate's bedside.
8. Explain the procedure to the patient-inmate and provide for patient-inmate privacy.
9. Ensure that the primary intravenous line tubing includes a back check valve. If not, change the primary line infusion tubing.
10. Attach secondary solution to secondary tubing and hang on an IV pole 8 to 10 inches higher than the primary IV solution.
11. Flush secondary line tubing with medication solution.
12. If Y infusion tubing is used, attach solution to second line without needle.
13. Disinfect injection port with an antimicrobial prep swab on primary line and insert the needleless connector to the port.
14. Adjust the flow rate as prescribed for the medication. Secondary solution will be piggybacked into primary solution. The primary solution shall resume when medication solution administration is complete.
15. Observe the patient-inmate for any adverse reactions. Discontinue administration and immediately notify the provider if reaction is noted.
16. Dispose of supplies in appropriate waste container.
17. Remove gloves and place in appropriate waste container.
18. Wash hands.

B. Administration by Bolus or "Push"

1. Verify the provider's order carefully including the patient-inmate, medication, dosage, time, and method of administration and identify the patient-inmate.
2. Check the name of the medication, dosage, appropriateness for direct IV administration, and expiration date.
3. Wash hands and put on gloves.
4. Prepare medication solution as recommended by manufacturer. Most medications require dilution because of their irritating effect on veins.
5. Assemble medication in safety syringe with 23 or 21 gauge needle and antimicrobial swab at the patient-inmate's bedside.
6. Explain the procedure to the patient-inmate and provide for patient-inmate privacy.
7. If intravenous fluid is currently infusing, verify placement in vein and clamp or pinch off tube above injection port. Disinfect injection port with antimicrobial swab and

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- inject medication according to manufacturer's recommendation. (If injecting into saline lock, flush with saline before and after administering medication.) Follow manufacturer's recommendations for administration time as some medications require rapid (less than one minute) administration and others require very slow administration over 10 minutes.
8. If medication solution is not compatible with current IV solution, it is necessary to flush the patient-inmate for any adverse reactions, including respiratory distress, tachycardia, bradycardia, seizures, anaphylaxis. Discontinue administration and immediately notify the provider if reaction is noted. Be familiar with antidotes for side effects and be prepared to administer them if prescribed.
 9. Resume previous IV solution and set flow rate.
 10. Remove needle and syringe or needleless connector and dispose of in a sharps container. **Do not recap.**
 11. Dispose of supplies in appropriate waste container.
 12. Remove gloves and dispose in appropriate waste container.
 13. Wash hands.

C. Intravenous Admixtures

1. Practice aseptic technique in the preparation of intravenous admixtures as follows:
 - a. Check all solutions before and after mixing for cracks and particulate matter.
 - b. Double-check all calculations.
 - c. If there is any doubt at all, discard the solution.
2. Use of Syringes and Needles
 - a. Select the proper safety syringe and needle.
 - b. Examine the outer covering of syringes and needles for possible contamination.
 - c. In the case of paper-wrapped syringes, peel sides apart and expose the syringe. Avoid touching the plunger.
 - d. Peel back the needle wrapping and expose the hub.
 - e. Attach the needle to the syringe with a twist, keeping the needle sheath intact and avoid touching the needle hub.
 - f. Aseptically remove the plastic protective cap from the needle.
 - g. Perform the transfer, but do not recap.
3. Withdrawal of Contents from Ampules
 - a. Prepare syringe with needle, if required.
 - b. Tap ampule gently while in the upright position to release solution that may be trapped in the stem above the neck.
 - c. Wipe the neck of the ampule with an alcohol swab.
 - d. Using swab, thumb, and index finger on the neck of ampule, and the thumb and index finger of the other hand holding the base, snap off the neck **away from you.**
 - e. Inspect the opened ampule for glass particles.
 - f. Remove the needle sheath on the syringe. If air is present in the syringe, remove it. Injection of air into the ampule may cause it to overflow. Tilt the ampule and

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submerge the needle in the solution while avoiding touching the non-sterile outside rim of the ampule with the sterile needle.

- g. Do not draw the solution from the bottom of the ampule. This will prevent aspiration of glass particles.
 - h. Pull the plunger on the syringe back with your thumb, using your index finger for support, placing it on the wing of the syringe.
 - i. Hold the syringe with the needle upward, tap the syringe to allow air bubbles to surface, and then remove the excess air in the syringe and needle.
 - j. Measure the desired amount of solution on syringe barrel.
 - k. Do not recap the needle.
4. Withdrawal of Contents from Vials
- a. Remove the dust cover and aluminum tab over the target area and discard them. Cleanse the exposed rubber surface with an alcohol swab. Avoid leaving any excess alcohol or lint as they may be carried with the needle into the vial.
 - b. Remove the needle cap and aspirate air into the syringe equal in volume to the amount of solution to be withdrawn. The air will equalize the pressure in the container and replace the volume of solution withdrawn.
 - c. Insert the needle at a 45 or 60 degree angle into the rubber closure. As the needle begins to penetrate, elevate the needle to a vertical position to minimize coring.
 - d. Inject air from the syringe into the vial. Try to minimize bubbling air through the solution.
 - e. Holding the vial with one hand and the syringe in the other, draw the solution into the syringe keeping the needle submerged to avoid drawing air into the syringe. Draw up slightly more solution than is needed.
 - f. Withdraw the needle from the vial. With the syringe and needle held up, tap the syringe to allow any air bubbles to surface. Remove the air bubbles by ejecting solution slowly until the needle fills with solution and the last air bubble is gone. Check the remaining volume to ensure the quantity is correct.
5. Use of Add-Vantage (ADD)
- a. To open diluents container: Peel over wrap from the corner and remove container. Some opacity of the plastic due to moisture absorption during the sterilization process may be observed. This is normal and does not affect the solution quality or safety. The opacity will diminish gradually.
 - b. To Assemble Vial and Flexible Diluent Container:
 - 1) Remove the protective covers from the top of the vial and the vial port on the diluents container as follows:
 - a) To remove the breakaway vial cap, swing the pull ring over the top of the vial and pull down far enough to start the opening, then pull straight up to remove the cap. **NOTE: Once the breakaway cap has been removed, DO NOT ACCESS VIAL WITH SYRINGE.**
 - b) To remove the vial port cover, grasp the tab on the pull ring, pull up to break the three tie strings, then pull back to remove the cover.

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- 2) Screw the vial into the vial port until it will go no further. The vial must be screwed in tightly to assure a seal. This occurs approximately ½ turn (180°) after the first audible click. The clicking sound does not assure a seal; the vial must be turned as far as it will go. **NOTE:** Once the vial is seated, do not attempt to remove.
 - 3) Recheck the vial to assure that it is tight by trying to turn it further in the direction of assembly.
 - 4) Label with the patient-inmate's name, California Department of Corrections and Rehabilitation (CDCR) number, Bed number, the provider's name, any addition of medication, date and time to be infused, and nurse's initials.
- c. To Prepare Admixture:
- 1) Squeeze the bottom of the diluents container gently to inflate the portion of the container surrounding the end of the drug vial.
 - 2) With the other hand, push the drug vial down into the container telescoping the walls of the container. Grasp the inner cap of the vial through the walls of the container.
 - 3) Pull the inner cap from the drug vial. Verify that the rubber stopper has been pulled out, allowing the drug and diluent to mix.
 - 4) Mix container contents thoroughly and use within the specified time.
- d. Preparation for Administration:
- 1) Confirm the activation and admixture of vial contents.
 - 2) Check for leaks by squeezing container firmly. If leaks are found, discard unit as sterility may be impaired.
 - 3) Close flow control clamp of administration set.
 - 4) Remove cover from outlet port at bottom of container.
 - 5) Insert piercing pin of administration set into port with a twisting motion until the pin is firmly seated. **NOTE:** see full directions on administration set package.
 - 6) Lift the free end of the hanger loop on the bottom of the vial, breaking the two tie strings. Bend the loop outward to lock it in the upright position, then suspend container from hanger.
 - 7) Squeeze and release drip chamber to establish proper fluid level in chamber.
 - 8) Open flow control clamp and clear air from set. Close clamp.
 - 9) Attach set to venipuncture device. If device is not indwelling, prime and perform venipuncture.
 - 10) Regulate rate of administration with flow control clamp.

D. Documentation

1. Document the following on the Medication Administration Record (MAR):
 - a. Name of the medication,
 - b. Dosage,
 - c. Date/time,
 - d. Method of administration

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- e. Name and quantity of solution
2. Record the quantity of solution given via IV piggyback on the intake and output (I&O) record.
3. Document any adverse reactions, discontinued treatment, and the date and time of the provider notification on the Nursing Care Record.

VI. INSERVICE AND TRAINING

1. Training of nursing staff will be completed by the Nurse Educator or Nurse Instructor during formal classroom instruction sessions.
2. This training may be in conjunction with a Pharmacist.
3. Records of training will be kept in the Nurse Educator/Instructor's office in the individual staff development files.