

SECTION 8B: PUMPS & DRUG ADMINISTRATION	POLICY: 8B.6
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PURPOSE:

To provide instruction on safe and proper medication compounding and the handling of vials and ampules.

POLICY:

Aseptic technique and proper environment is to be used with all medications and large volume parenteral compounding. The compounding of large volume parenterals and piggybacks necessitate the proper manipulation of vials, ampules and IV fluid containers.

PROCEDURE:

- **Compounding Technique:**
 - Aseptic technique must be used when compounding IV medications for administration.
 - The following points are to be followed for the proper techniques of needle insertion through a vial diaphragm or IV bag additive port:
 - The beveled side of the needle is to be facing away from the surface of the entry point.
 - A small amount of pressure is applied on the barrel of the syringe causing the needle to bow slightly.
 - Rotate the syringe up and insert the needle into the container while applying the pressure on the barrel.
 - Decreased chances of coring the vial diaphragm or the IV bag additive port if the above steps are followed.
- **Manipulation of Ampules:**
 - Tap down all liquid in the top and neck of the ampule into the base before opening the ampule.
 - The neck of the ampule is to be wiped with a sterile 70% isopropyl alcohol pad.

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- To open ampules, wrap the neck with an alcohol pad to decrease glass particles scattering.
- Using two forefingers and thumb, hold the base of the ampule from the side. With the other hand, place the thumb and two forefingers on the top portion of the ampule. Hold the ampule so that the thumbs are facing you. Hold the base of the ampule firmly and apply pressure with the thumb on top of the ampule in a quick, smooth manner. Direct the pressure up and away from you.
- Whenever ampules are used during preparation of a product, the medication must be filtered before adding it to the vehicle or given to the client. Filtration can be done during withdrawal from the ampule, or when injecting it into the final container.
- If a filter straw is used to withdraw the medication, withdraw the approximate amount of drug from the ampule. While removing the straw from the ampule, pull the plunger back to clear the drug from the straw cannula. Prime the syringe until all air is expelled and a fluid level is seen in the cannula. Place straw in the ampule and expel the remaining air in the cannula. Pull back the plunger until the necessary dose is obtained. Remove the filter straw and place needle on syringe. The desired dose has been injected into IV fluid container.
- If the drug is to be filtered when adding the medication to the IV fluid container, use a regular needle to withdraw the contents of the ampule. Simultaneously remove the needle and draw the plunger back to withdraw the approximate dose. Remove air from the syringe and measure the final dose. Replace the regular needle with a filter needle. Inject desired amount of drug into IV fluid container.

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- **Manipulation of Vials:**
 - Without touching the vial's diaphragm or interrupting the air flow over the diaphragm, remove protective cap.
 - Using 70% isopropyl alcohol, swab the vial's top.
 - When reconstituting powders use a vented needle to avoid positive pressure build-up. Insert the vented needle into the vial. Slowly add the necessary volume of diluent to the vial and allow to dissolve. The vented needle is removed.
 - Swab the top of the vial with appropriate disinfectant.
 - Draw back the plunger to a position approximately 75% of the required volume to withdraw the drug from the vial. Insert the needle into the vial. Invert the vial. Inject a small amount of air into the vial to cause positive pressure in the vial. Allow the positive pressure to force the drug into the syringe. Repeat the step until all air has been expelled from the syringe. Draw back on the plunger until desired dose is attained.
 - Return vial to upright position. At the same time, remove needle from vial and draw back on the plunger.
 - Point the syringe away from the HEPA filter and depress the plunger until air is removed.
 - Swab the additive port of the container. Immediately add the medication to the fluid container.

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- **Addition of Medication to IV Fluid Container:**
 - The additive port of the IV fluid container is to be swabbed with 70% isopropyl alcohol.
 - Remove the cap from the syringe with the drug to be added to the IV fluid container.
 - Insert the needle through the additive port. The smaller inner circle on the additive port is the desired entry point. Both the additive port and the protective inner membrane need to be penetrated by the needle. Do not puncture the container when inserting the needle.
 - Depress the plunger to inject desired amount of drug.
 - Remove needle from additive port.
 - The port is to be swabbed with a sterile 70% isopropyl alcohol pad.
 - To assist distribution of the drug, gentle agitation of the container is required.
 - Check the completed container against a lighted background for particulate matter.
 - If injection with a syringe is the final delivery method, reconstitute the desired amount of medication as indicated above. Replace the needle on the syringe with a luer-lock syringe cap.

Note: If medication is spilled, compounded incorrectly, or otherwise deemed questionable for use, reach out to the Agency immediately so that further advice on handling can be sought from the Pharmacy. DO NOT discard medication unless told to do so by the Pharmacy or an Agency representative.