



Using Tools of the Trade

GOAL

1. To introduce and provide instruction on literary, online, and physical resources available for aseptic compounding use

BACKGROUND/PERTINENT INFORMATION

All aseptic compounders must be familiar with the tools and resources at their disposal because these instruments directly affect the safety, accuracy, and efficiency of the final product. Having unneeded supplies that clutter the primary engineering controls (PECs) or using an incompatible diluent for reconstitution are just two examples of being unprepared. Each compounder must evaluate from the label or order which supplies they need based on the route, method of compounding, and volume of product to be produced.

Routes of Parenteral Administration

(Figure 3.1)

Understanding the route in which the product will be administered determines which supplies the compounder needs and in what form the product will be administered to the patient.

- **Intravenous (IV).** IV means “into the vein.” This route dictates that the product will be between 250 mL to 4000 mL in volume and travel to the patient from a sealed fluid bag or bottle to be administered through the patient’s main IV fluid line.
- **Intravenous piggyback (IVPB).** IVPB means “into the vein” like IV. However, this route dictates that it be given in addition to the main IV fluid via a secondary IV fluid line. This secondary fluid line is “piggybacked” to the main IV fluid line and hung higher than the main fluids so it can be given over a short

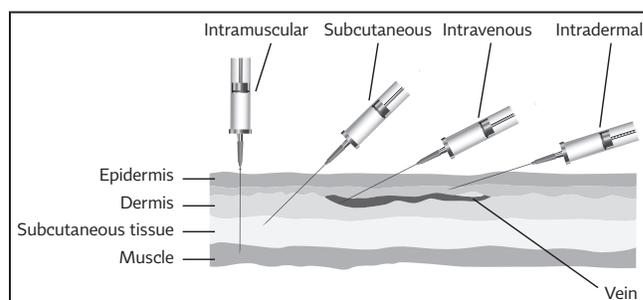


Figure 3.1

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amount of time. IVPB products will range from 25 mL to 250 mL in volume and travel to the patient in a sealed fluid bag or bottle.

- **Intravenous push (IVP).** IVP means “into the vein” but is in the form of a syringe push. While the patient is receiving primary IV fluids, an IVP can be administered in addition through an injection port in the main IV fluid line by hand or through the use of a syringe pump. This route dictates that the product travel to the patient in a capped syringe; no needle should be attached.
- **Intrathecal (IT).** IT means “into the spine.” This route dictates that the product travels to the patient in a capped syringe; no needle should be attached. Make sure to affix “*for intrathecal use only stickers*” on these compounds.
- **Intradermal (ID).** ID means “into the skin.” This route dictates that the product not only travels to the patient in a capped syringe, but the product is also delivered in smaller volumes (e.g., a 1-mL or 0.5-mL syringe containing 0.1 mL of fluid).
- **Subcutaneous (sub-Q).** Sub-Q means “under the skin.” This route dictates that the product travels to the patient in a capped syringe.

THINGS TO CONSIDER BEFORE YOU START

What Type of Procedure Would Warrant a Particular Tool

Understanding the type of procedure based on the products used for a particular compound will aid not only in the safety and sterility of the compound, but also in performance efficiency.

- **Vial pressure.** Positive pressure *is when the vial has more pressure in it than the atmosphere outside of the vial.* Negative pressure *is when the vial has a vacuum and the compounder finds it hard to withdraw liquid from the vial.* Vial pressure is the obstacle that many beginning aseptic compounders dread the most. Recognizing a potential issue in advance will greatly help your process efficiency. Any instance in which you are adding volume to a vial, such as reconstitution, you are simultaneously adding positive pressure. Fluid vials over 10 mL typically have negative pressure from the manufacturer and are difficult to withdraw fluid from. Typically, 1-mL vials have positive pressure and will squirt a small amount of fluid out as soon as they are punctured. Using tools such as vented needles and vented spikes will alleviate this pressure and make it easier to compound when faced with negative or positive pressure.
- **Reconstitution.** Reconstitution is the act of adding fluid to a powdered drug to result in a desired concentration. Many tools are available to aid in the reconstitution process and will provide a means for the diluent and drug to be reconstituted immediately before use. Some drugs come with their own tools in their packaging to help in the process. Using tools such as transfer needles, Vial Mates™, Add-O-Vial® bags, ADD-Vantage® bags, and repeater pumps will make reconstituting easier.
- **Compounds warranting filters.** Filters are needed anytime there is a danger of particulate contamination in the drug either from the drug itself or from