

IV. INJECTABLE MEDICATIONS

POINTS OF EMPHASIS:

- Maintain clean/sterile techniques throughout procedure as appropriate.
- Utilize safety engineered devices to minimize risk of needle sticks (use is mandatory except with auto-injectors).
- Identify distal connection type for syringes and IV tubing ("luer lock" versus "slip tip" connections).
- Always ensure that all sharps are properly disposed of in a timely manner in an approved sharps disposal container.
- Route of administration and size of the patient are used to determine the appropriate size needle.
 - A 23- to 25-gauge, 5/8-inch-long needle is appropriate for subcutaneous injections
 - The needle gauge for IM injections should be larger to accommodate viscous solutions and suspension.
 - Recommend 21G to 23G needles, 1" to 2" in length
 - As a rule of thumb, a 200-lb (90-kg) patient requires a longer needle (i.e., 2") for an IM injection; a 100-lb (45-kg) patient will require a 1-1/4" to 1-11/2" needle
- Prefilled systems may have an air bubble that will need to be purged prior to medication administration.
- When drawing up medication from a vial or ampule, draw up a little extra that can be wasted when purging air bubbles.
- Assure the proposed site for injection is free of inflammation, swelling, infection and any skin lesions.
- Never recap used needles.
- Allow alcohol to dry for 30 seconds for bacteria to be killed and to minimize discomfort of the injection.
- Prior to injection, tell the patient that they will feel a poke.
- If blood is present when aspirating, withdraw the needle and discard the medication. Start over with new medication and a new site.

I. PREPARATION OF INJECTABLE MEDICATIONS SYRINGE AND VIAL

1. Inspect the medication
2. Select an appropriate size syringe for the medication to be delivered
3. Remove the protective "flip-off" cap from the top of the vial
4. Wipe the rubber stopper with alcohol prep or other suitable antiseptic swab
5. If reconstituting a medication:
 - a. Pierce the center of the medication vial's stopper with the needle on the syringe of diluting solution
 - b. Inject diluting solution
 - c. Remove the needle/syringe from the vial
 - d. Gently shake the vial to assure the medication dissolves
 - e. Continue with drawing up the medication with a new needle and syringe
6. If drawing a medication or diluting solution from a vial:
 - a. Draw up the same volume of air as the volume to be withdrawn
 - b. Pierce the center of the vial's stopper with the needle on the syringe
 - c. Inject air
 - d. Holding the vial upside down in one hand and being careful to keep the end of the needle within the fluid level of the vial, pull back gently on the plunger to draw the medication or diluting solution into the syringe
 - e. Withdraw the needle and syringe from the vial
7. Replace the needle with an appropriate size safety engineered needle for subcutaneous or IM injections
 - a. For patient comfort, change the needle prior to injection. Most needles have a fine silicon coating to facilitate easy entry into muscle mass which may be lost when drawing up the medication through a rubber stopper
 - b. Also, literature has shown some rubber stoppers contain trace amounts of latex that may cause a sensitivity reaction
 - c. Common practice is to use a larger needle for drawing up the drug, and a smaller needle for injecting
8. With the needle pointing upward, gently tap the syringe to move any air bubbles to the top
9. Gently depress the plunger of the syringe until air is expelled and only the desired amount of medication remains in the syringe
10. The medication is now ready to be delivered

II SYRINGE AND AMPULE

1. Inspect the medication
2. Select a syringe of appropriate size for the volume of medication to be delivered
3. Select a filter needle (also called a "filter straw") of appropriate size and length to withdraw the medication and attach to the syringe
4. Hold the ampule upright and gently "flick" it to move any medication trapped in the head of the ampule to the base
5. Wipe the area between the head and base of the ampule with an alcohol prep or other suitable antiseptic swab.
6. Once the medication is removed from the head of the ampule, open the ampule by holding the ampule at arm's length and break by snapping the head toward you. This will cause any glass shards to be directed away rather than toward you when the ampule breaks.
 - a. Use a commercially available device or gauze square to grasp the head of the ampule when breaking the head from the base
 - b. If the ampule fails to break cleanly and glass shards can be observed, dispose of the ampule and replace with another
7. Using the filter needle and syringe, withdraw medication for administration. Discard any remaining medication and properly dispose of both portions of the ampule in a sharps container.
8. Remove the filter needle used to withdraw the medication from the ampule and properly dispose of the filter needle in a sharps container.
9. Replace the filter needle with an appropriate size safety engineered needle for subcutaneous or IM injections.
10. With the needle pointing upward, gently tap the syringe to move any air bubbles to the top of the syringe.
11. Gently depress the plunger of the syringe until air is expelled and only the desired amount of medication remains in the syringe.
12. The medication is now ready to be delivered.

III. PRELOADED SYRINGES [removed]

IV. ADMINISTRATION OF INJECTABLE MEDICATIONS INTRAMUSCULAR INJECTION

1. Prepare medication as previously described in this section
2. Re-check the six rights
3. Ensure the correctly sized safety needle is attached for administration route (not applicable for auto-injector)
4. Select an injection site
 - a. Deltoid
 - b. Vastus lateralis (lateral thigh)
5. After selecting the injection site, gently tap it to stimulate the nerve endings which will minimize pain when the needle is inserted. Using the stretch technique may accomplish this also.
6. Cleanse the injection site with alcohol prep or other suitable antiseptic swab in an outward circular motion for about 2 inches.
7. Hold the syringe in dominant hand and remove the needle cover
8. Stabilize the injection site with your non-dominant hand using:
 - a. "Pinch" technique
 - b. Stretch technique
9. Holding the syringe like a dart, quickly but not forcefully insert the needle into the injection site at a 90 degree angle until the proper depth is reached.
10. Release the skin while continuing to hold the syringe in place with the dominant hand
11. Grasp the plunger with one hand and the barrel of the device with the other. Pull back (aspirate) slightly on the plunger and wait five seconds.
12. If no blood aspirates into the syringe, proceed with the injection. Slowly depress the plunger to administer the injection. A slow, steady injection rate allows the muscle to distend gradually and accept the medication under minimal pressure.
13. Once the medication has been administered, wait ten seconds, then withdraw the needle using appropriate safety features and/or activating the needle safety engineering device.
14. Cover the injection site with an alcohol or gauze pad and apply gentle pressure to the area to help reduce pain and improve absorption.
15. Properly dispose of the syringe and needle assembly in an appropriate sharps container.
16. Place a bandage over the injection site.