



Wisconsin Sample Guideline

Injection Preparation and Administration Guideline

The following guidelines should be incorporated into proper practice by EMTs under an approved operational plan for subcutaneous injection of epinephrine 1:1000 or an approved operational plan intramuscular injection of glucagon.

Subcutaneous Injection of Epinephrine 1:1000

1 mg. ampule

- Need filter needle to withdraw medication
- Change to a subcutaneous safety engineered needle to administer injection.

30 ml. multi-dose vial

- For single patient use only.
- **Only** for use with 1 cc. insulin syringe.
- Clean the rubber stopper of multi-dose vials with alcohol before inserting a needle into the vial. Avoid touch contamination of the stopper before penetrating the stopper.
- Draw up medication with one needle. Change to a subcutaneous safety engineered needle to administer injection.

Additional notes and considerations

- A 23- to 25-gauge, 5/8-inch-long needle is appropriate for subcutaneous injections.
- For comfort, change the needle prior to injection. Most needles have a fine silicon coating to facilitate easy entry into muscle mass. This may be lost when drawing up the medication. Additionally, literature has shown some rubbers to contain trace amounts of latex that may cause a sensitivity reaction.
- Common practice is to use a larger needle for drawing up the drug, smaller needle for injecting.

Glucagon Preparation and Intramuscular Injection

1. Reconstitute glucagon.
 - i. Two vial package
 - a. Inspect package and both vials insuring correct medication, dose, and expiration date is current.
 - b. Remove "flip-off" seals from vials.
 - c. Wipe rubber stoppers with alcohol prep-pad.
 - d. Using sterile 3 ml IM syringe, remove needle protector from syringe.
 - e. Draw plunger back to 1ml (cc) mark (syringe now contains 1ml of air).
 - f. Pierce the center of the stopper of the vial containing the diluting solution with the needle of the syringe.

- g. Turn the vial upside down and inject the 1 ml of air from the syringe into the vial.
- h. Keeping the tip of the needle in the diluent, withdraw fluid from vial into the syringe.
- i. Remove syringe from vial and pierce the center of the stopper of the vial containing 1mg powdered glucagon with the syringe.
- j. Inject all of the diluent into the glucagon.
- k. Remove the syringe from the vial and maintain sterility.
- l. Shake the vial gently until the glucagon dissolves and the solution becomes clear.
Note: glucagon should be clear and water-like in consistency. It should be used immediately after reconstituting.
- m. Follow the preceding procedure and withdraw slightly more of the medication than the ordered dose.
- n. Replace the needle with an appropriate size safety engineered needle.
- o. With the needle pointing upward, gently tap the syringe to move any air bubbles to the top. Gently advance the syringe to the 1 ml mark. (For children less than 20 kg (44 lbs) a dose of 0.5 mg is used).
Note: Dosage established by medical control must be administered.

Or:

1. Vial and syringe kit
 - i. Two vial package
 - a. Inspect vial and filled syringe insuring right medication, dose and expiration date.
 - b. Remove "flip-off" seals from vial.
 - c. Wipe rubber stoppers with alcohol prep-pad.
 - d. Pierce the center of the stopper of the vial containing the diluting solution with the needle of the syringe.
 - e. Inject all of the diluent into the glucagon.
 - f. Remove the syringe from the vial and dispose in sharps container.
 - g. Shake the vial gently until the glucagon dissolves and the solution becomes clear.
Note: glucagon should be clear and water-like in consistency. It should be utilized immediately after reconstituting.
 - h. Wipe rubber stopper with alcohol prep-pad.
 - i. Using sterile 3 ml IM syringe, remove needle protector from syringe.
 - j. Draw plunger back to 1ml (cc) mark (syringe now contains 1ml of air).
 - k. Pierce the center of the stopper of the vial containing the glucagon solution.
 - l. Turn the vial upside down and inject the 1 ml of air from the syringe into the vial.
 - m. Keeping the tip of the needle in the solution, withdraw fluid from vial into the syringe.
 - n. Replace the needle with an appropriate size safety engineered needle.
 - o. With the needle pointing upward, gently tap the syringe to move any air
 - p. bubbles to the top. Gently advance the syringe to the 1 ml mark. (For children less than 20 kg (44 lbs) a dose of 0.5 mg is used).
Note: Dosage established by medical control must be administered.
2. Perform the IM injection using a safety engineered needle.

- a. Cleanse the injection site using an alcohol prep-pad.
- b. Raise the injection site by pinching or stretching the flesh.
- c. Insert the needle into the selected and cleansed injection site at a 90-degree angle.
- d. Aspirate slightly by attempting to withdraw the plunger of the syringe. If no blood is seen to aspirate into the syringe, use light pressure to depress the plunger and inject all the medication. If blood is seen to aspirate, a second site must be used.
- e. Depress the plunger to administer the injection.
- f. Withdraw the needle from the injection site.
- g. Wipe the injection site with an alcohol prep-pad.

Additional notes and considerations

- For comfort, change the needle prior to injection. Most needles have a fine silicon coating to facilitate easy entry into muscle mass. This may be lost when drawing up the medication.
- Additionally, literature has shown some rubbers to contain trace amounts of latex that may cause a sensitivity reaction.
- Common practice is to use a larger needle for drawing up the drug, smaller needle for injecting.
- Needles used for IM injections are longer than subcutaneous needles because they must reach deep into the muscle.
- Needle length also depends on the injection site, patient's size, and amount of subcutaneous fat covering the muscle.
- The needle gauge for IM injections should be larger to accommodate viscous solutions and suspension. Recommend 23G to 25G needles 1" to 2" in length
- As a rule of thumb, a 200-lb (90-kg) patient requires a 2" needle; a 100-lb (45-kg) patient, a 1 1/4" to 1 1/2" needle.