H1N1 Vaccine Administration Manual for Paramedics

September 2009

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I. Introduction

The purpose of this manual is to provide procedures and guidance on the administration of medications during events within the PA Department of Health (PA DOH). According to the Pennsylvania *Department of Health's Mass Vaccination Campaign Plan*, a need to vaccinate the public through providing mass clinics to specific priority groups that do not have access to vaccine from healthcare providers may be necessary.

II. Policy and Procedure for Administering Medications

Purpose:

To provide specific guidelines on proper administration techniques of administration of medication including both parenteral and intranasal.

Introduction:

Parenteral injections (i.e. intradermal, intramuscular, and subcutaneous) are administered through the skin surface instead of the digestive tract. An injection that is administered into the dermis of the skin (i.e. tuberculin skin test) is referred to as intradermal, administered into the muscle (i.e. tetanus, hepatitis B) is intramuscular and subcutaneous is an injection that is administered into the tissue between the skin and muscle (i.e. inactivated polio vaccine).

All vaccine administered either parenterally or intranasally shall be administered according to a physician's order. The client shall be observed for anaphylactic reaction for 20 minutes following administration.

A. Intradermal

Procedure:

1. Place all supplies on a clean, dry work area.
    - The supplies should include: the specific medication vial; a 1/ 2" or 5/8", 25 or 27 gauge tuberculin syringe; gloves; two alcohol wipes; and a biohazard container or color-coded (red) container for sharps.
2. Wash hands thoroughly prior to and after the procedure.
3. Draw up the prescribed amount of medication into the syringe using sterile technique.
4. Check the syringe for air bubbles; if present, expel air bubbles. Recheck the dosage and add more medication if necessary.

5. Recommended sites are the volar surface or palm side of the forearm or upper arm.
6. Cleanse site, approximately a 2” area, with alcohol and allow to dry.
7. Using the dominant hand, hold the syringe at a 10-15° angle with the bevel of the needle up.
8. Stretch the skin tautly with other hand and then insert the needle so that the bevel is completely covered between the layers of skin then inject the medication.
9. Do not aspirate. A bleb should form as the solution is injected.
10. Quickly withdraw the needle.
11. Do not rub the site. Do not apply a band-aid.
12. Do not attempt to recap needle. Dispose of needle into a designated biohazard container.
13. Document the date, time, medication, dose, route of administration and signature of the licensed personnel administering the medication on the client’s immunization record.

B. Intramuscular

Procedure:

1. Place all supplies on a clean, dry work area.
    - The supplies should include: medication vial (if appropriate); a 1” or 11/2”, 22-25 gauge syringe or prefilled syringe; gloves; two alcohol wipes; a band-aid and a biohazard container or color-coded (red) container for sharps.
2. Wash hands thoroughly prior to and after the procedure.
3. Draw up the prescribed amount of medication into the syringe (unless syringe is prefilled) using sterile technique.
4. Check the syringe for air bubbles; if present, expel air bubbles. Recheck the dosage and add more medication if necessary.
5. Recommended sites are the anterolateral thigh muscle or the deltoid muscle.
6. Cleanse site, approximately a 2” area, with alcohol and allow to dry.
7. Using the dominant hand, hold the syringe at a 90° angle (perpendicular) and insert the needle with a quick motion at a 90° angle into the muscle and the inject medication. The needle should be all the way into the skin.
8. Quickly withdraw the needle.
9. Cleanse the site with gloved hand if blood is visible. Apply a band-aid.
10. Do not attempt to recap needle. Dispose of needle into a designated biohazard container.
11. Document the date, time, medication, dose, route of administration and signature of the licensed personnel administering the medication on the client’s immunization record.

C. Subcutaneous

Procedure:

1. Place all supplies on a clean, dry work area.
    - The supplies should include: medication vial (if appropriate); 5/8”, 23 or 25 gauge syringe or prefilled syringe; gloves; two alcohol wipes; a band-aid and a biohazard container or color-coded (red) container for sharps.
2. Wash hands thoroughly prior to and after the procedure.
3. Draw up the prescribed amount of medication into the syringe (unless syringe is prefilled) using sterile technique.
4. Check the syringe for air bubbles; if present, expel air bubbles. Recheck the dosage and add more medication if necessary.
5. Recommended sites are the lateral upper arms, and the anterolateral thigh.
6. Cleanse site, approximately a 2” area, with alcohol and allow to dry.
7. Using the dominant hand, hold the syringe at a 45° angle and pinch a skin fold approximately 2” with the other hand.
8. Insert the needle with a quick motion at a 45° angle into the skin and inject the medication.
9. Quickly withdraw the needle.
10. Cleanse the site with gloved hand if blood is visible. Apply a band-aid.
11. Do not attempt to recap needle. Dispose of needle into a designated biohazard container.
12. Document the date, time, medication, dose, route of administration and signature of the licensed personnel administering the medication on the client’s immunization record.

How to Administer Intramuscular (IM) Injections

Administer these vaccines by the intramuscular (IM) route: Diphtheria-tetanus (DT, Td) with pertussis (DTaP, Tdap); *Haemophilus influenzae* type b (Hib); hepatitis A (HepA); hepatitis B (HepB); human papillomavirus (HPV); inactivated influenza (TIV); meningococcal conjugate (MCV); and pneumococcal conjugate (PCV). Administer inactivated polio (IPV) and pneumococcal polysaccharide (PPSV) either IM or SC.

Patient age	Injection site	Needle size
Newborn (0–28 days)	Anterolateral thigh muscle	⅝"* (22–25 gauge)
Infant (1–12 months)	Anterolateral thigh muscle	1" (22–25 gauge)
Toddler (1–2 years)	Anterolateral thigh muscle	1–1¼" (22–25 gauge)
	Alternate site: Deltoid muscle of arm if muscle mass is adequate	⅝–1"* (22–25 gauge)
Children (3–18 years)	Deltoid muscle	⅝–1"* (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1¼" (22–25 gauge)
Adults 19 years and older	Deltoid muscle of arm	1–1½"*† (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1¼" (22–25 gauge)

*A ⅝" needle may be used only if the skin is stretched tight, the subcutaneous tissue is not bunched, and injection is made at a 90° angle.

†A ⅝" needle is sufficient in adults weighing <130 lbs (<60 kg); a 1" needle is sufficient in adults weighing 130–152 lbs (60–70 kg); a 1–1½" needle is recommended in women weighing 152–200 lbs (70–90 kg) and men weighing 152–260 lbs (70–118 kg); a 1½" needle is recommended in women weighing >200 lbs (>90 kg) or men weighing >260 lbs (>118 kg).

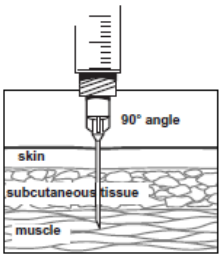
Needle insertion

Use a needle long enough to reach deep into the muscle.

Insert needle at a 90° angle to the skin with a quick thrust.

(Before administering an injection, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.¶)

Multiple injections given in the same extremity should be separated by a minimum of 1", if possible.

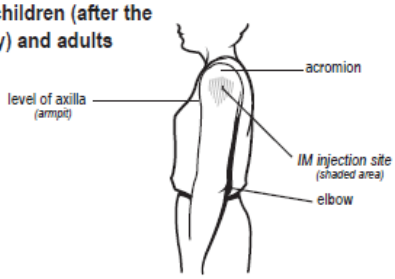


¶CDC. "ACIP General Recommendations on Immunization" at www.immunize.org/acip

IM site for infants and toddlers

Insert needle at a 90° angle into the anterolateral thigh muscle.

IM site for children (after the 3rd birthday) and adults



Insert needle at a 90° angle into thickest portion of deltoid muscle — above the level of the axilla and below the acromion.

Technical content reviewed by the Centers for Disease Control and Prevention, February 2009.

www.immunize.org/catg.d/p2020.pdf • Item #P2020 (2/09)

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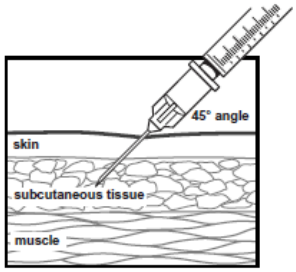
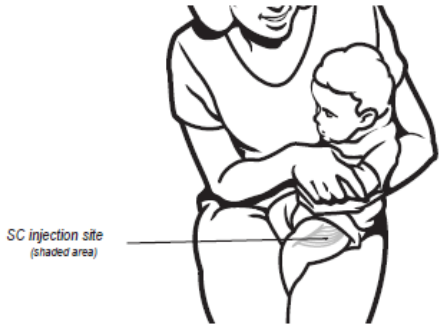
How to Administer Subcutaneous (SC) Injections

Administer these vaccines by the subcutaneous (SC) route: MMR, varicella, meningococcal polysaccharide (MPSV), and zoster (shingles [Zos]). Administer inactivated polio (IPV) and pneumococcal polysaccharide (PPSV) vaccines either SC or IM.

Patient age	Injection site	Needle size	Needle insertion
Birth to 12 mos.	Fatty tissue over the anterolateral thigh muscle	⅝" needle, 23–25 gauge	Pinch up on subcutaneous (SC) tissue to prevent injection into muscle. Insert needle at 45° angle to the skin. (Before administering an injection, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.*) Multiple injections given in the same extremity should be separated by a minimum of 1". *CDC. "ACIP General Recommendations on Immunization" at www.immunize.org/acip
12 mos. and older	Fatty tissue over anterolateral thigh or fatty tissue over triceps	⅝" needle, 23–25 gauge	

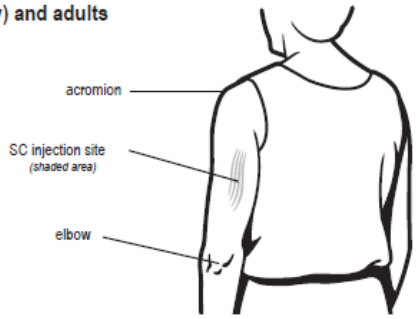


SC site for infants



Insert needle at a 45° angle into fatty tissue of the anterolateral thigh. Make sure you pinch up on SC tissue to prevent injection into the muscle.

SC site for children (after the 1st birthday) and adults



Insert needle at a 45° angle into the fatty tissue over the triceps muscle. Make sure you pinch up on the SC tissue to prevent injection into the muscle.

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How to Administer IM and SC Injections to Adults

Intramuscular (IM) Injections

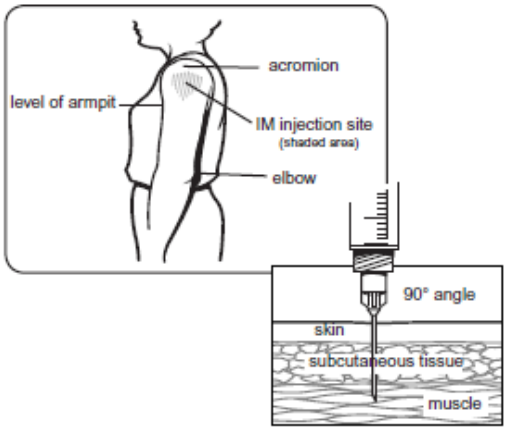
Administer these vaccines via IM route:
Tetanus, diphtheria (Td), or with pertussis (Tdap); hepatitis A; hepatitis B; human papillomavirus (HPV); trivalent inactivated influenza (TIV); and meningococcal conjugate (MCV). Administer polio (IPV) and pneumococcal polysaccharide vaccine (PPSV) either IM or SC.

Injection site:
Give in the central and thickest portion of the deltoid—above the level of the armpit and below the acromion (see the diagram).

Needle size:
22–25 gauge, 1–1½" needle *(see note at right)*

Needle insertion:

- Use a needle long enough to reach deep into the muscle.
- Insert the needle at a 90° angle to the skin with a quick thrust.
- Separate two injections given in the same deltoid muscle by a minimum of 1".



Note: A ⅝" needle is sufficient in adults weighing <130 lbs (<60 kg); a 1" needle is sufficient in adults weighing 130–152 lbs (60–70 kg); a 1–1½" needle is recommended in women weighing 152–200 lbs (70–90 kg) and men weighing 152–260 lbs (70–118 kg); a 1½" needle is recommended in women weighing >200 lbs (>90 kg) or men weighing >260 lbs (>118 kg). A ⅝" (16mm) needle may be used only if the skin is stretched tight, the subcutaneous tissue is not bunched, and injection is made at a 90-degree angle.

Subcutaneous (SC) Injections

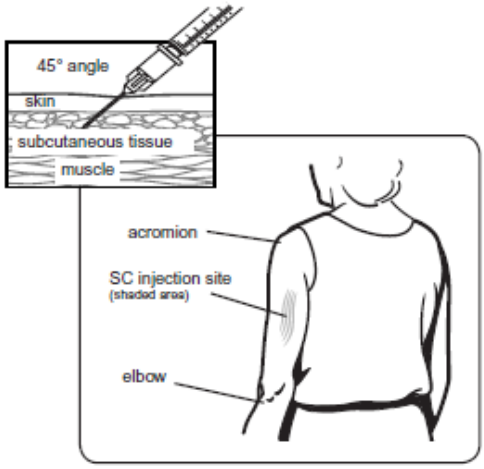
Administer these vaccines via SC route:
MMR, varicella, meningococcal polysaccharide (MPSV), and zoster (shingles). Administer polio (IPV) and pneumococcal polysaccharide vaccine (PPSV) either SC or IM.

Injection site:
Give in fatty tissue over the triceps (see the diagram).

Needle size:
23–25 gauge, 5/8" needle

Needle insertion:

- Pinch up on the tissue to prevent injection into the muscle. Insert the needle at a 45° angle to the skin.
- Separate two injections given in the same area of fatty tissue by a minimum of 1".



Adapted by the Immunization Action Coalition, courtesy of the Minnesota Department of Health

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www.immunize.org/catg.d/p2020A.pdf • Item #P2020A (2/09)

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