

COUNTY OF ORANGE- HEALTH CARE AGENCY
Public Health Services Standardized Procedures

Protocol: Administration of Injections

Number: 8.4

Supersedes: Family Health Dec. 2010

Date: 5-9-12

I. PURPOSE

To describe the standard method for administering vaccines and other injectables in the Orange County Health Care Agency Public Health Programs.

II. SCOPE

Physicians, Nurse Practitioners, Registered Nurses, Licensed Vocational Nurses, Nursing Assistants and Medical Assistants

III. PROCEDURE

- A. Verify order or standardized procedure
- B. Assess for allergies
- C. Identify client using 2 identifiers
 - 1. Client name
 - 2. Client DOB
- D. Educate and inform the client or parent
 - 1. Administration site
 - 2. Signs or symptoms of reaction
 - 3. Care of injection site
 - 4. Tylenol/Motrin for discomfort or fever, include dose
 - 5. If immunization, give Vaccine Immunization Sheet (VIS)
 - 6. Obtain consent if not already obtained
- E. Select site for injection
 - 1. **Intradermal** - The TST (Tuberculin Skin Test) is always given on the volar aspect of the forearm (refer to TST standardized procedures for more information); for other intradermal injections, refer to manufacturer's recommendations for guidance on site of administration
 - 2. **Subcutaneous** - The outer aspect of the upper portion of the arm can be used for most persons. An acceptable alternative site is the fatty area (subcutaneous tissue) of the anterolateral thigh. For teaching purposes, other locations may be used
 - 3. **Intramuscular (vaccines)** – Assess muscle mass. If more than one injection is given on the visit, it is ideal to use separate limbs for each injection, but separate sites (1-2 inches apart) on the same limb may be used.
 - a. *Infants and toddlers* -
 - i. Use the vastus lateralis muscle in the anterolateral area of the middle or upper thigh. (see Diagram A)
 - ii. In infants, the deltoid muscle may be well enough developed to be used.
 - a. *Children and adults* -
 - i. Deltoid muscle is preferred, where the muscle is largest in the posterolateral area below the level of the acromion and above the insertion of the deltoid muscle (level of the armpit).(see Diagram B)

- ii. The anterolateral area of the middle or upper thigh may be used for any age, provided that the needle length is long enough to reach deeply into the muscle mass
- 4. **Intramuscular (other routine medications or immunobiologics, e.g., penicillin)**
 - a. *Infants* – Use the vastus lateralis muscle in the anterolateral area of the middle or upper thigh.
 - b. *Toddlers and Older Children (12 months through 10 years)*
 - i. Deltoid muscle should be used if muscle mass is adequate.
 - ii. If there is no enough muscle mass, may also use the anterolateral thigh.
 - c. *Adolescents and Adults (11 years or older)* –
 - i. Gluteal muscle preferred for antibiotics (benzathine penicillin, ceftriaxone, etc); upper outer quadrant of the gluteus area is recommended area (see Diagram C)
 - ii. The anterolateral thigh also can be used for men and women weighing less than 130 lbs.

F. Gather equipment

- 1. Gloves (optional, but recommended; gloves must be used if patient known to have a blood-borne pathogen)
- 2. Alcohol
- 3. Cotton ball
- 4. Band-aid
- 5. Syringe and needle

Route of Administration	Syringe Size	Needle Length	Needle Size
Intradermal	1 ml	3/8 to 1/2 in	26 to 27 gauge
Subcutaneous	3 ml	5/8 to 1 in*	25 gauge
Intramuscular			
Infant and small child	3 ml	1 in*	25 gauge
Adult and obese child	3 ml	1-1 1/2 in	22-25 gauge

*A needle length of 5/8 inch sufficient for this type of injection and/or age group. However, universal use of a needle length of 1 inch is preferred.

- G. Preparation/verification of injection: verify that vaccine/medication is what is ordered (type and dose) and is not expired; MAs must have licensed person verify
- H. Prepare the client
 - 1. Expose the area of chosen site
 - 2. Infants – hold firmly by the parent or staff with the thigh exposed
- I. Wash hands using appropriate technique and don gloves if desired
- J. Prepare skin
 - 1. Cleanse the skin BEFORE EVERY INJECTION, using an alcohol pad or alcohol-soaked cotton ball wiped in a circular motion from a central point outwardly (concentric circles)
 - 2. Allow the alcohol to dry before giving the injection
- K. Administer medication or vaccine.
 - 1. Oral
 - a. After placing the vaccine in the mouth, make sure infants and toddlers swallow the vaccine by pushing up on the chin to stimulate a swallow reflex
 - b. If the child spits out Rotavirus vaccine - readministration is not recommended
 - 2. Injection –
 - a. Insert needle (see Diagram D):

- i. **Intradermal** - Angle of the needle is nearly parallel to the skin (10 – 15° angle), with the needle bevel upward. Stretch the skin by pressure from the thumb of the other hand.
 - ii. **Subcutaneous** - Angle of needle is 45° to the skin. Pinch up a bit of subcutaneous tissue with the other hand to prevent inadvertent intramuscular injection
 - iii. **Intramuscular** - Angle of needle is perpendicular (90°) to the skin. Place and maintain pressure on the skin around the injection site with the thumb and index fingers of the other hand, insert needle with a quick thrust, and then introduce the remainder of the needle through the skin and into the muscle with firm and steady pressure
 - b. Aspirate when giving IG, HRIG, antibiotics in gluteal area
 - i. Aspiration is not required when giving immunizations
 - ii. Aspiration is advocated by some experts, but the procedure is not required because no large blood vessels exist at the recommended injection sites for immunizations.
 - c. Inject medication or vaccine
 - d. Withdraw needle, activate safety needle device
 - e. Apply cotton ball to site
 - f. Cover with Band-Aid
 - g. Dispose of needle and syringe
 - i. Do NOT recap, clip or separate needle and syringe after use.
 - ii. Discard equipment in a puncture-proof sharps container, and assure proper disposal of filled sharps containers.
 - iii. Similar disposal is required for the oral rotavirus and live influenza vaccine apparatus
- L. Documentation
 - 1. Document in chart
 - a. Date and time given
 - b. Medication name, dose, route, site
 - c. Client's tolerance of administration
 - d. Person giving medication/immunization signature
 - 2. Document patient information, lot # and expiration date in appropriate medication/vaccination log, if applicable
 - 3. Document all immunization and IG given in CAIR

REFERENCES

1. Armstrong, K. (2003). Injection technique, needle length and equipment. *Practice Nurse*, 26(4), 24.
2. Diggle, L. (2007). Injection technique for immunization. *Practice Nurse*, 33(1), 34-37.
3. Intramuscular injection technique. (2007). *Paediatric Nursing*, 19(2), 37.

Diagram A: Vastus Lateralis Injections

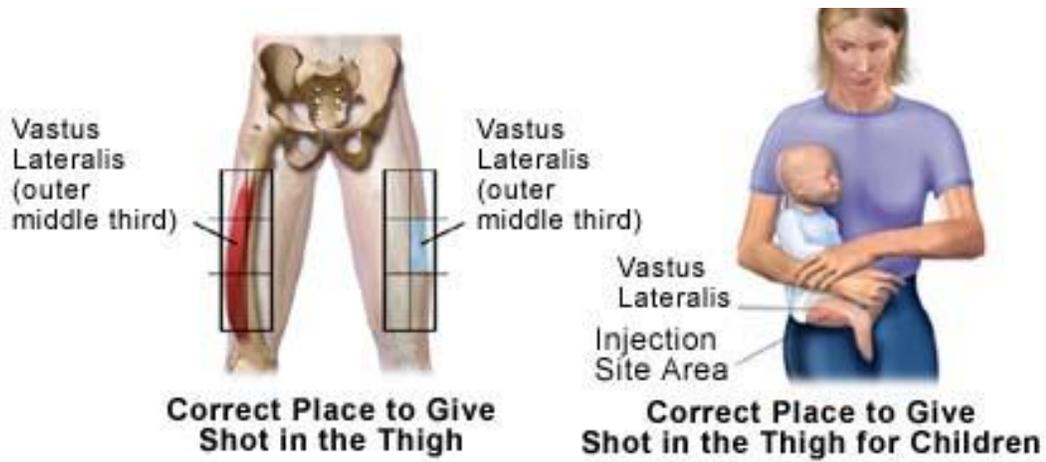


Diagram B: Deltoid Injection Site

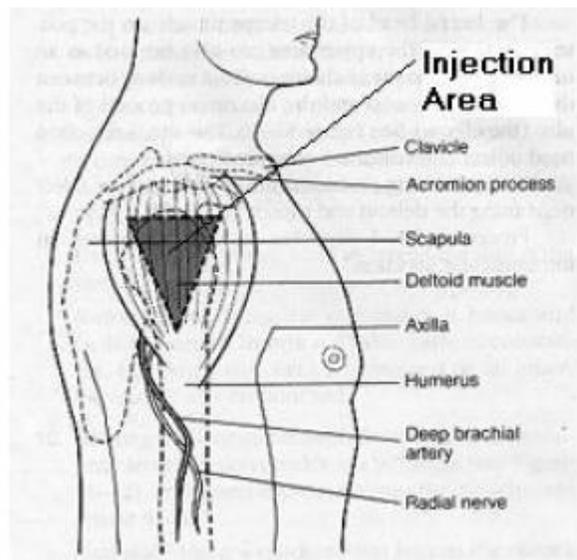


Diagram C: Safe Zone for Intragluteal Injections

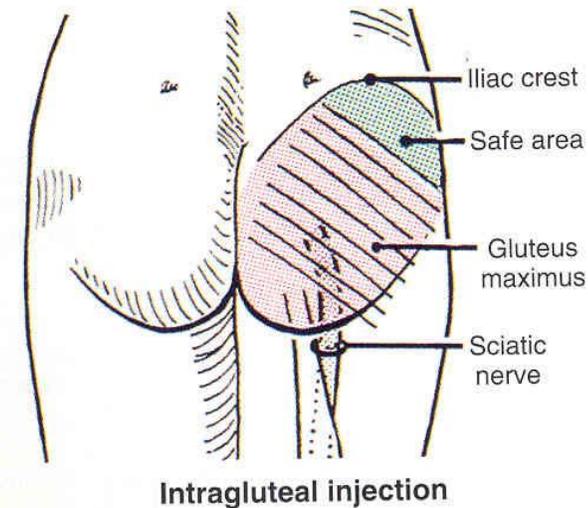


Diagram D: Angle of Needle for Injections

