

Objectives

At the completion of this module, unlicensed assistive personnel (UAP) should be able to:

1. administer medications by intramuscular injection.
2. document medication administration in the client's healthcare record.

Intramuscular injections are given deeply into the muscle for rapid absorption. The proximity of blood vessels and nerves in the muscle require special precautions and skillful technique using well defined landmarks for selection of the injection site. Intramuscular injection volume is three milliliters (mLs) or less.

NOTE:

1) The RN or LPN is permitted to delegate **ONLY** after application of all components of the NC BON Decision Tree for Delegation to UAP and **after careful consideration that delegation is appropriate:**

- a) for **this** client,
- b) with **this** acuity level,
- c) with **this** individual UAP's knowledge and experience, and
- d) **now** (or in the time period being planned).

2) Successful completion of the "Infection Control" module by the UAP should be documented prior to instruction in medication administration by this or ANY route.

Procedures

1. Communicate to UAP any special information needed prior to the administration of the medications.
2. Cleanse hands and observe other appropriate *infection control procedures.
3. Gather appropriate materials.
 - Gloves
 - Appropriate size syringe – 3 mL or less as directed by the licensed nurse in the plan of care or agency policies and procedures
 - Appropriate size needle – The typical needle length is 1 ½ inches with #21 to #22 gauge needle. The selection of needle length and gauge is

directed by the licensed nurse in the plan of care or per agency policies and procedures based on the:

- type of medication solution,
 - the client's size and amount of adipose tissue covering the muscle,
 - the site of injection, and
 - age of the client.
- Antiseptic or alcohol swab
 - Medication ampule or vial
 - Client's medication administration record or medical order
 - Sterile gauze
 - Adhesive bandage (as indicated)
4. Prepare work area to be clean and well lit.
 5. Check for client allergies by:
 - asking the client about their allergies, and
 - reviewing the Medication Administration Record (MAR), plan of care, and/or client medical record.
 6. Verify the **SIX RIGHTS** of medication administration:
 - Right client and right MAR
 - Right medication
 - Right dose
 - Right time
 - Right route
 - Right documentation is performed after the medication administration
 7. Verify **RIGHT MEDICATION** by comparing the MAR against the label of the medication:
 - when it is taken from the medication cart/drawer,
 - before withdrawing the medication, and
 - after withdrawing the medication.
 8. Check the expiration date of the medication.
 9. Prepare the **RIGHT DOSE** of medication for the **RIGHT ROUTE**.

MEDICATION INJECTION PREPARATION

Medication Vial

- Use **sterile technique to assemble the syringe and needle.
- Mix solution by rotating the vial between the palms of the hand, if needed. Do not shake.
- Remove the vial cap and cleanse the rubber top with an alcohol swab using a circular motion.
- Remove the needle guard maintaining sterile technique and pull back on the plunger of syringe to fill with the amount of air equal to the amount of medication to be withdrawn. Attach a filter needle as directed by the licensed nurse in the plan of care and required by agency policy.
- Place the vial upright on a flat surface. Carefully insert the needle into the center of the rubber cap maintaining sterility. Inject air into the vacant area of the vial keeping the needle bevel above the surface of the medication.
- Withdraw the prescribed amount of medication using one of two methods.
 - i. Hold the vial down with the base lower than the top. Guide the needle tip so that it is below the fluid level and slowly withdraw the desired amount of medication.
 - ii. Invert the vial and guide needle tip so that it is below the fluid level. Slowly withdraw the desired amount of medication.
- Hold the syringe and vial at eye level to determine the correct dosage of medication is withdrawn into the syringe. Withdraw a slight amount more medication (e.g., 0.25 mL) than ordered.
- Gently tap the syringe barrel to dislodge any air bubbles and expel as necessary.
- If a filter needle is used, remove and replace with the needle to be used for the injection while maintaining sterile technique. If changing needles prior to injection, replace with the needle to be used for injection while maintaining sterile technique.
- Expel the air from the new needle and verify the correct medication volume before administration.
- Write the date, time, and initials if opening a multi-dose vial.

Medication Ampule

- Flick or tap the ampule stem to release all medication fluid to the base of the ampule.

**Delegation of Medication
Administration to
Unlicensed Assistive Personnel (UAP)**

**Administering Intramuscular Injections
Module/Skill Checklist**

- Hold the ampule base and grasp the ampule stem with an alcohol swab or dry gauze. Snap the ampule stem off so that it breaks away from the person preparing the medication.
- Attach a filter needle to the syringe maintaining **sterile technique
- Place the ampule on a flat surface or invert the ampule.
- Remove the syringe needle guard and insert the filter needle into the center of the ampule maintaining **sterile technique.
- Gently aspirate to withdraw the medication. Tilt the ampule slightly to the side as needed. Withdraw a slight amount more medication (e.g., 0.25 mL) than ordered.
- Remove the filter needle and replace it with the needle to be used for the injection while maintaining sterile technique.
- Dispose of all needles and ampule parts in the appropriate container.
- With the syringe at eye level, push the medication solution to the prescribed amount.

Note: Change the needle on the syringe after withdrawing the medication and before injection as directed by the licensed nurse in the plan of care and as required by agency policies and procedures.

10. Identify the **RIGHT CLIENT** (client's identity) for medication administration using agency protocol.
11. Explain the procedure to the client.
12. Put on clean gloves.
13. Select the site for injection. The site should be free of scars, hair, lesions, bruises, edema, and skin irritation. The site for injection is directed by the licensed nurse in the plan of care or agency policies and procedures. The muscles used for injection are:
 - Ventrogluteal – most commonly used site; suitable for adults and children over 1 year
 - Assist the client to lie on his/her side with the upper knee bent and slightly raised toward the chest.
 - Landmark:
 - Use the right hand on the client's left hip, or vice versa, place the heel of the hand on the client's greater trochanter and point the fingers toward the client's head.



- Place the index finger on the client's anterior superior iliac spine and stretch the middle finger toward the buttocks palpating the crest of the ilium.
 - The injection site is the triangle formed between the index finger, the third finger and the crest of the ilium.
- Vastus lateralis – commonly used in infants 1 year and younger, and children
 - Landmark:
 - Assist the client to lie in a supine or sitting position.
 - Locate the greater trochanter and lateral femoral condyle. Divide the vertical distance between these two landmarks into thirds.
 - The injection site is in the lateral middle third area.
- Dorsogluteal –
 - **Note: Do not use this site for children under 3 years of age**
 - Assist the client into a prone position with toes pointed inward.
 - Landmark:
 - Expose the client's buttock area and locate the greater trochanter.
 - Locate the posterior-superior spine of the iliac crest.
 - Draw an imaginary line between the two bony landmarks (trochanter and posterior superior iliac spine).
 - Select an injection site lateral and superior to this line.
- Deltoid – is the muscle mass located on the lateral aspect of the upper arm near the shoulder
 - Assist the client to stand, sit, or lie down.
 - Landmark:
 - Locate the deltoid site on the outer lateral aspect of the upper arm.
 - Identify the acromion process and landmark two fingerbreadths or inches below this for the top boundary of the injection site.
 - For the bottom boundary, identify the top of the axilla.
 - A triangle within these boundaries is used for injection.
 - Typically a 1 inch length #23 to #25 gauge needle is used. The volume injected is 0.5 – 1 mL for deltoid injections.

14. Administer the medication at the **RIGHT TIME**.

Medication Administration:

- Cleanse the area with an alcohol swab using a circular motion moving from inside outward. Allow the area to dry.
 - Place and hold the swab in the nondominant hand between the third and fourth fingers or on the client's skin above the intended injection site.
 - Remove the needle guard or cap maintaining **sterile technique.
 - Use the thumb and forefinger of the nondominant hand to spread the skin taut, or gently grasp the muscle to increase muscle mass.
 - Hold the syringe between the thumb and forefinger of the dominant hand.
 - Insert the needle quickly at a 90 degree angle into mid-muscle area.
 - Grasp the lower end of the syringe with the non-dominant hand. Without moving the syringe or needle position, use the dominant hand to aspirate by pulling back on the plunger.
 - If no blood returns, slowly inject the medication.
 - If blood returns, withdraw the needle, discard, and prepare a new injection.
15. Wait 10 seconds after the injection. This allows the medication to disperse into the muscle tissue.
16. Withdraw the needle quickly at same angle as inserted.
17. Apply gentle pressure with a dry sterile gauze.
18. Activate the needle safety device and dispose in an appropriate container.
19. Remove and discard gloves. Cleanse hands.
20. Implement the sixth right of medication administration, **RIGHT DOCUMENTATION**. Documentation of medication administration on the client's MAR and/or client record includes:
- a. Date and time of administration
 - b. Medication and dosage
 - c. Route of medication administration
 - d. Site of administration
 - e. Signature of person administering the medication.

NOTE: If the client refuses the medication, document this in the MAR and/or client chart. The UAP is responsible for reporting this to the person delegating and supervising the medication administration. Medications that are not administered within the agency approved time period for administration should be documented. Dispose of the medication according to agency policy.

21. Maintain security of medications during medication administration and insure the medication cart/cabinet/room is locked when not in direct attendance.

*** Information to support the teaching of hand hygiene and use of gloves is located in the teaching module “Principles of Infection Control”.**

**** Information to support the teaching of standard precautions for medication administration and sterile technique are located in the teaching module “Principles of Infection Control”.**

CONSIDERATIONS FOR THE LIFESPAN

Pediatric Clients:

Infants:

- Vastus lateralis is the recommended site for intramuscular injections.
- Smaller and shorter needles (#25 gauge, 5/8 inch length) are used for intramuscular injections.
- Do not inject more than 0.5 mL into the muscle of an infant.
- Obtain assistance to immobilize or restrain an infant or young child as needed.

Children:

- Smaller and shorter needles (#22 to #25 gauge, 5/8 to 1 inch length) are used for intramuscular injections.
- The vastus lateralis is the recommended site of choice for toddlers and children.
- The ventrogluteal or deltoid are the recommended sites for older children and adolescents.
- Do not inject more than 1 mL of medication into the muscle of the child.
- Obtain assistance to immobilize or restrain the child as needed.
- Use colorful cartoon bandages after an injection to help soothe the client.

Geriatric Adult:

- Shorter needles may be needed for intramuscular injections due to muscle atrophy.



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**Administering Intramuscular Injections
Module/Skill Checklist**

SKILL CHECKLIST

Student Name (print)

ID Number

<u>SKILL PERFORMANCE OBJECTIVES</u>	<div style="text-align: center;"> ✓ Pass x Not Yet </div>	<u>COMMENTS</u>
1. Obtain any special information needed prior to the administration of medication.		
2. Cleanse hands; observe infection control procedures.		
3. Gather materials and supplies.		
4. Prepare work area: clean and well lit.		
5. Check for client allergies: <ul style="list-style-type: none"> ▪ Ask client about allergies ▪ Review MAR for allergies 		
6. Verify Six Rights of medication administration: Client, medication, dose, time, route, documentation		
7. Verify right medication by comparing MAR against medication label: <ul style="list-style-type: none"> ▪ When taken from the medication cart/drawer ▪ Before withdrawing the medication ▪ After withdrawing the medication 		
8. Check expiration date of medication.		
9. Prepare the right dose of medication for the right route. <ul style="list-style-type: none"> ▪ Prepare medication from a vial ▪ Prepare medication from an ampule 		
10. Identify the right client for medication administration.		
11. Explain the procedure to the client.		
12. Put on clean gloves.		
13. Select the site for injection. Site selection would be directed by the licensed nurse in the plan of care or per agency policies and procedure: <ul style="list-style-type: none"> ▪ Ventrogluteal ▪ Vastus lateralis ▪ Dorsogluteal ▪ Deltoid 		



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14. Administer the medication intramuscular at the right time.		
15. Wait 10 seconds after injection and then quickly withdraw needle.		
16. Apply gently pressure with a dry sterile gauze.		
17. Activate the needle safety device and dispose in an appropriate container.		
18. Remove and discard gloves. Cleanse hands.		
19. Right documentation – record the medication administration: <ul style="list-style-type: none"> ▪ Date and time ▪ Medication and dosage ▪ Route ▪ Site ▪ Signature 		
20. Maintain security of medications and medication cart/cabinet.		

a. Pass b. Redo

Evaluator Name

Date

