



College of Licensed
Practical Nurses of Alberta

**INTRADERMAL
MEDICATION
MODULE**
For Licensed Practical Nurses

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Module Description & Purpose

This module is designed to prepare the Licensed Practical Nurse (LPN) with knowledge of the new competency of administering Intradermal Injections. This module is enriched by the knowledge, skill, attitudes and judgment the LPN already has acquired through the study of pharmacology and medication administration including the skills of intramuscular and subcutaneous injections.

Objectives of the Module

At the completion of the Intradermal Injections Module the Licensed Practical Nurse will:

- Have the knowledge and skill to administer Intradermal (ID) Medications in a safe and competent manner to all ages.

Prerequisite

This module is intended for LPNs who have completed education in intramuscular injections.

Reference may be necessary to the *Competency Profile for Licensed Practical Nurses* and any nursing text book for specific content review as necessary. This module provides home study material to prepare the LPN with the knowledge necessary to perform ID injections.

It will be necessary for the LPN to have an experienced regulated practitioner (Physician, RN, or LPN) demonstrate and then observe the LPNs technique of administering ID injections on the job once they have reviewed this material using the *Performance Checklist*. There is no written exam or workshop necessary. The LPN must determine if agency policy is in place to permit the performance of ID injections.

The LPN must demonstrate the skill components of administering an intradermal injection using the *Performance Checklist* included with this module. Actual injection during testing is not recommended, performance of all other steps on the *Performance Checklist* are necessary.

The completion of the *Performance Checklist* must be witnessed by the supervising regulated practitioner and kept in the LPN's Continuing Competency binder for audit purposes.

(Note: The supervising regulated practitioner may be any professional who is already authorized to administer ID injections including an experienced LPN)

Recommended Reference Materials

College of Licensed Practical Nurse of Alberta. (2000). Competency Profile for Licensed Practical Nurses. Edmonton, AB: Author

Any Nursing Skills reference text such as:

Potter, P.A., & Perry, A.G. (1999). Basic Nursing, A Critical Thinking Approach. (4th ed.) St. Louis, MI: Mosby

Module Requirements

To complete this module, the learner is expected to:

1. Study the module information.
2. Demonstrate competence by completing *Performance Checklist* witnessed by an experienced regulated practitioner.
3. Keep the *Performance Checklist* in Continuing Competency binder for audit purposes.

Administering Intradermal (ID) Medications

Overview

This module introduces the steps of administering ID medications and provides explanations of the techniques used. As with many new skills, the LPN should administer the first ID injection under supervision of another regulated practitioner in the clinical setting.

The LPN applies knowledge of pharmacology and the principles of medication administration to the nursing skill of administering ID medications. As in all nursing skills, the LPN must be competent and proficient in the procedure to protect the client and to prevent untoward effects. When the client is a child adequate provisions must be taken to position, restrain and protect the child during any injections.

Module Objectives

To complete this Module, the LPN will:

1. Review the physicians' order, note the client's allergy history and identify contraindications to administering the intradermal injection.
2. Review the purpose of checking the medication name, dose, time and route of administration and expiration date.
3. Review policy and procedure for double checking selected medications with another nurse prior to administration.
4. Identify client by checking identification number and name.
5. Review client teaching in regard to the procedure and the pertinent information regarding the medication.
6. Prepare the environment for administering the injection
 - Ensure privacy & comfort
 - Position client
 - Restrain child appropriately
 - Follow aseptic technique

7. Select site and landmark site for intradermal injection.
8. Understand proper technique to administer intradermal injection.
9. Review the proper disposal of sharps and used equipment and supplies.
10. Review the purpose of recording the medication administration and client's response.
11. Review proper documentation and reporting undesirable effects from medication to appropriate person.

Purpose of Intradermal Injections

Intradermal injections are usually given to clients for skin testing procedures such as tuberculin screening and allergy tests. These medications are given intradermally because they are very potent. Since the dermis has a reduced blood supply the medication absorption is slower thus reducing the risk of an anaphylactic reaction.

Note: LPNs must also complete the Immunization Certificate Course to administer tuberculin testing.

1 & 2-Checks by LPN prior to Administration of Medication

Prior to administration of the medications, the LPN will once again review the client's record, examine the physician order and research the medication. The LPN will apply methods of checking the "five rights" to ensure that the right medication, the right dosage, the right time, and the right route have been prepared for the right client. The LPN must also check the client's allergy record. It is essential that the LPN can competently prepare the medication prior to administration of ID medications. Review general information regarding administering injectable medications if necessary.

3-Double-checking of Medications

There are medications, which must be checked by two nurses prior to administration. For example often, paediatric dosages, insulin, anticoagulants, and wastage of narcotics are double-checked by two nurses in some agencies. The LPN must review the policies and procedures in own agency regarding double-checking of medications. It is safe practice to double-check the medication with another nurse anytime the LPN is uncertain. Review the common medications in your practice setting to determine which medications must be double-checked.

4-Identification of Client

Review the methods of identifying the client prior to administering the medication. Note that client number and full name compared from identification band to the client's record is the most effective means of checking client identification. Of course in some clinical settings, such as a physician's office, ID bands are not used, therefore, it is important to review procedures of your own agency for checking client identification.

5-Client Teaching Regarding Medication

If necessary review chosen references regarding teaching in relation to medications. The LPN must also prepare the client/parent with what to expect by giving a brief description of the steps of the injection as well as any effects of the medication they need to watch for.

The specific reason the ID injection is being performed must be reviewed with the client to ensure they understand the appropriate time to return for recheck. Some sites may need to be read at various intervals to determine test results.

6-Preparing the Environment

The LPN must ensure that the medication is administered in a safe environment. When administering ID injections the position, comfort and privacy of the client are usually not as much of a consideration because of the site of the injection. However it is still important to be aware of and assess certain factors including client's clinical condition and age of the client. As with any injection the paediatric client may require appropriate restraint.

Remember that just as the medication was prepared in aseptic conditions, the medication is administered in aseptic conditions.

7-Selecting and Land-marking Site of Injection

Prior to administering the ID injection, the LPN must assess the client for factors that would contraindicate the client receiving an injection. Systematic factors are muscle atrophy, reduced blood flow, and circulatory shock. The LPN would inform the appropriate professional if there are contraindicating factors.

The LPN would inspect and observe the site for localized factors. Localized factors may be wounds, bruises, edema, inflammation, hardness of tissue, masses, tenderness, lesions or discoloration. If any of the factors were observed, the LPN would report and record the observations and choose an alternate site for the injection. If necessary, using the nursing text of choice, review the rationale for assessing the client's condition and the site prior to selecting the site.

ID Sites

The common sites for ID injections are the inner forearm and upper back. The LPN must know the anatomy and physiology of these sites. "Skin testing requires that the nurse be able to clearly see the injection sites for changes in color and tissue integrity. ID sites should be lightly pigmented, free of lesions, and relatively hairless." (Potter & Perry, p. 656-not included with this module)

Intradermal, means "between the layers of the skin and into the dermis". Refer to your skills reference to review the technique for locating the dermis during needle insertion.

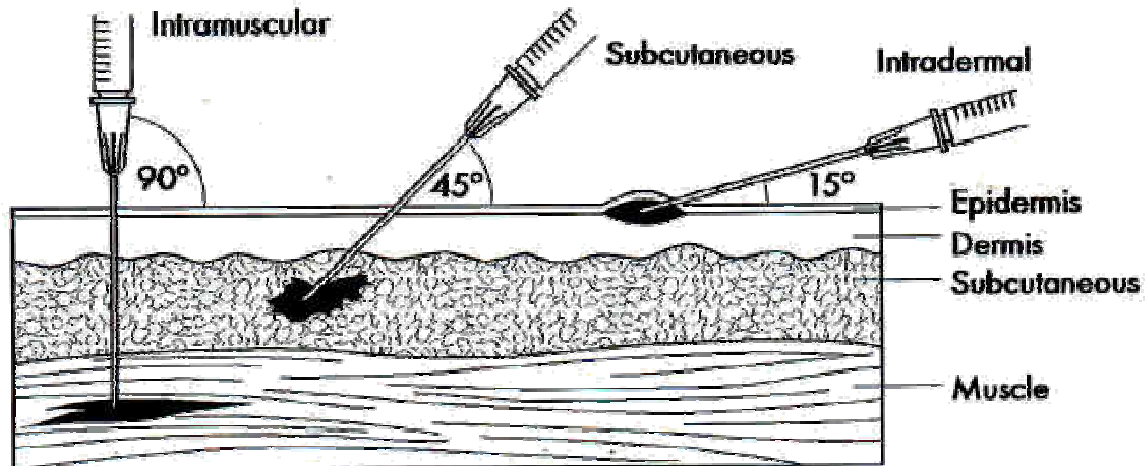
LPNs employed in specific clinical environments (i.e., Dermatology clinics) may need further instruction on the job about appropriate/common sites for intradermal injections.

Readings:

1. Any nursing skills textbook.

8-Techniques of Administering Intradermal Injections

For ID injections the needle is inserted at a 5 to 15 degree angle, as the objective is to enter the dermis layer of the skin. The needle size is usually 26 or 27 gauge, in most cases a 1 ml tuberculin syringe is used. Check your agency policy regarding the needles and syringes used.



Comparison of angles of insertion for IM (90 degrees), SQ (45 degrees) and ID (15 degrees) injections.

When administering an ID injection the most important observation is to look for a “bleb” (bubble, slight swelling) approximately 6mm (1/2 inch) on the skin as the medication is slowly injected.

The bevel of the needle may point up or down however it is preferred if it points up. This way it is easier to see the “bleb” form and be sure of your needle placement. Medication should be injected slowly as the dermal layer is tight and will not expand easily when solution is injected.

If an injection is given for allergy or sensitivity testing, it is important to record the concentration of the medication used and the site of the injection. Many reactions to intradermal injections are not apparent for several hours or even days after the injection. It is sometimes helpful to draw a circle around the injection site with a pen to correctly identify the site at a later date when inspected for reaction. Clinically significant reactions to sensitivity testing are shown if the patient develops a wheal or elevated areas around the site where the diluted dose of medication was injected. Areas of swelling should be noted at 5, 10, and 15 mm.

If the patient is being tested for an allergy, the injection site may become reddened, swollen, and very itchy (pruritic). The patient should not scratch this area and should use cool wet compresses to reduce the irritation. The patient should call the physician or go to an emergency room if he or she experiences any other reactions such as difficulty breathing or shortness of breath, puffiness of the face, or hives.

Reactions to intradermal allergy injections or sensitivity testing for tuberculosis (Mantoux) must be evaluated at a predetermined time after the injection. Each agency

has a policy on how the patient reaction will be evaluated and recorded. Review your agencies policies to be sure of the process.

Description of Intradermal skin reactions

-	(0)	No reaction
+	(1+)	Redness or erythema of skin
++	(2+)	Redness and solid elevated lesions or papules up to 5 mm in diameter
+++	(3+)	Redness, papules, and vesicles up to 5 mm in diameter
++++	(4+)	Generalized blister larger than 5mm in diameter

Readings:

1. Performance Checklist for Intradermal Medications (at end of this module).

9-Disposing of Sharps

As with any injection it is important to properly and safely dispose of the needle and syringe after administering an injection. Review the agency policy and procedures of your employment setting in regard to appropriate handling of sharps.

10-Recording the Medication Administration & Clients Response

The LPN will use the system of the agency to document and record on the client record the administration of the medication. There are a variety of methods to document the administration of medications depending on the purpose of the injection and the agency. Review the method used in your agency, and adhere to appropriate policy and procedure.

The principles of documentation and reporting apply to medication administration as well as nursing observations. The Competency Profile outlines these principles and responsibilities of the LPN (Competency Profile, pp.183-191). It is important to remember to record the client's response to the medications and the effect of the medication on the nurse's notes.

Because ID injections are most often used for skin testing it is necessary to recheck or read the skin results at specific or various intervals after the injection is administered. If the client is coming in to the clinic it is the responsibility of the nurse who administers the injection to inform the client of the appropriate time to return to have the testing checked. If the client is in a care facility the time of checking the site must be clearly noted to ensure accurate testing results. Be sure to review the medication information and agency policy regarding patient recheck and advise the client and document adequately.

Readings:

1. Competency Profile Medication Administration - U
2. Agency policy and procedure.

11-Document & Report Undesirable Effects from Medication

It is the responsibility of the nurse to document and report undesirable effects of medications. These processes will be different depending on your clinical area and what the testing is being performed for.

Further details regarding reading of Tuberculosis Testing is reviewed in the Immunization Certificate Course for Licensed Practical Nurses. For LPNs performing ID injections for allergy or dermatology purposes it is vital to understand the policies and procedures of your agency.

The *Anaphylaxis Learning Module*; available on the CLPNA website, is a good resource for LPNs providing intradermal injections, particularly those who are administering allergy testing. This learning module further prepares the LPN for allergy testing.

References:

College of Licensed Practical Nurse of Alberta. (2000). *Competency Profile for Licensed Practical Nurses*. Edmonton, AB: Author.

College of Licensed Practical Nurse of Alberta. (2005). *Competency Profile for Licensed Practical Nurses, 2nd Edition*. Edmonton, AB: Author.

College of Licensed Practical Nurses of Alberta. (2002). *Intramuscular and Intradermal Medication Course for Licensed Practical Nurses*. Edmonton, AB: Author.

Potter, P.A., & Perry, A.G. (1999). *Basic Nursing, A Critical Thinking Approach*. (4th ed.) St. Louis, MI: Mosby.

PERFORMANCE CHECKLIST

WHEN COMPLETED, TO BE KEPT IN CONTINUING COMPETENCY BINDER

A model must be used for testing technique only. Land marking may be done on a person but actual administration of the injection must NOT be performed. Clinical supervision will be necessary in the employment setting with first "real" injection.

LPNs Name: _____ Date: _____

LPNs Registration Number: _____

Employer: _____

Administering Intradermal Injections

Directions: S or U indicates a Satisfactory or Unsatisfactory performance.

PROCEDURAL STEPS	S.	U.	COMMENTS
For ID injections: 1. Review physician's medication order for client's name, drug name, dose, time and route of administration.			
2. Assess client's history of allergies and know substances client is allergic to and normal allergic reactions.			
3. Check date of expiration for medication vial or ampoule.			
4. Assess for contraindications: For <u>intradermal injections</u> : Assess for factors that may contraindicate ID injections.			
5. Prepare correct medication dose from ampoule or vial. Check carefully. Be sure all air is expelled.			
6. Identify client by checking identification and asking client's name.			
7. Explain steps of procedure to client.			
8. Observe client's verbal and nonverbal response towards receiving injections.			
9. Wash hands thoroughly. Apply gloves if indicated.			
10. Ensure privacy of client.			

11. Select appropriate injection site. Inspect skin surface over sites for bruises, inflammation or edema.			
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ID: Note lesions or discolorations of forearm			
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PROCEDURAL STEPS	S.	U.	COMMENTS
12. Assist client to comfortable position:			
ID: Have client extend elbow and support it and forearm on flat surface. Select site three to four finger widths below antecubital space and a hand width above wrist.			
13. Cleanse site with an antiseptic swab. Apply swab at centre of the site and rotate outward in a circular direction for about 5 cm.			
14. Hold swab or gauze between third and fourth fingers of non-dominant hand.			
15. Remove needle cap or sheath from needle by pulling it straight off.			
16. Hold syringe between thumb and forefinger of dominant hand.			
ID: Hold bevel of needle pointing up.			
17. Administer ID injection:			
(1) With non-dominant hand, stretch skin over site with forefinger or thumb.			
(2) With needle almost against client's skin, insert it slowly at a 5 to 15-degree angle until resistance is felt. Then advance needle through epidermis to approximately 3mm (1/8 inch) below skin surface. Needle tip can be seen through skin.			
(3) Inject medication slowly. Normally resistance is felt. If not, needle is too deep; remove and begin again.			
(4) While injecting medication, notice that small bleb approximately 6 mm resembling mosquito bite appears on skin's surface.			
18. Withdraw needle while applying alcohol swab or gauze gently over site. Support of tissue around injection site minimizes discomfort during needle withdrawal.			
19. Do not massage site after ID injection.			

20. Assist client to comfortable position.			
21. Discard uncapped needle or needle enclosed into appropriate sharps container.			

PROCEDURAL STEPS	S.	U.	COMMENTS
22. Remove disposable gloves and wash hands.			
23. Observe for any allergic or adverse reactions and report appropriately.			
24. Inspect site, noting any bruising or induration (hardness).			
25. Evaluate client's response to medication.			
26. For ID injections: Use skin pencil and draw circle around perimeter of injection site. Read site within 48 to 72 hours of injection.			
27. Correctly record medication administration.			
28. Record client's response to medications in nurse's notes.			

Witness of completion of performance checklist

Name: (please print)

Signature:

Professional Designation: (Physician, RN, LPN)

Location:

Date:

Comments:

This Performance Checklist must be kept in the LPN's Continuing Competency Binder for audit purposes.