 Department of Health Government of Nunavut		NURSING POLICY, PROCEDURE AND PROTOCOLS	
		Community Health Nursing	
TITLE:		SECTION:	POLICY NUMBER:
Administering Medications via Subcutaneous Infusion Set		Pharmacy	09-009-00
EFFECTIVE DATE:	REVIEW DUE:	REPLACES NUMBER:	NUMBER OF PAGES:
February 10, 2018	February 2021		5
APPLIES TO:			
Community Health Nurses			

POLICY:

The administration of medication through an indwelling subcutaneous infusion set may utilize continuous or intermittent methods. The nurse may administer medications via the subcutaneous (SC) route as directed by a physician's order or a directive in the *Nunavut Formulary*.

DEFINITIONS:

Subcutaneous (SC) is the layer of connective tissue below the skin. The depth of the subcutaneous layer varies.

A **subcutaneous injection** is the injection of medication into the subcutaneous tissue.

Lipodystrophy is a condition that produces lumps or dents in the skin due to repeated injections into the same spot.

PRINCIPLES:

The administration of medications via an indwelling subcutaneous infusion set is a recognized method of drug delivery.

The decision to use an indwelling SC infusion set for intermittent injections is determined by the nurse. Factors influencing this choice include the frequency of injections, decreased pain from injections experienced by the client, and a client's fear of injections.

Review "Parenteral Medication pages 573-627, Potter and Perry (2010) *Clinical Nursing Skills & Techniques 7th edition*" for further steps in ensuring safe SC medication administration.

RELATED POLICIES, GUIDELINES AND LEGISLATION:

Policy 09-004-00 Medication Administration – Nursing practice
Guideline 09-004-01 Guidelines for Administering Medications
Policy 09-006-00 Administering or Dispensing Medications – Documentation
Pharmacy & Therapeutics Committee. *Nunavut Formulary*
Potter and Perry (2010) *Clinical Nursing Skills & Techniques 7th edition*"



REFERENCES:

Perry, A. G. and Potter, P.A. (2010). *Clinical Nursing Skills and Techniques 7th ed.* Mosby: St. Louis.

Lewis, S., Heitkemper, M., and Dirksen S. (2004). *Medical-Surgical Nursing: Assessment and Management of Clinical Problems 6th ed.* Mosby: St Louis



Considerations

1. The decision to use an indwelling SC infusion set for intermittent injections is determined by the nurse. Factors influencing this choice include the frequency of injections, decreased pain from injections experienced by the client, and a client's fear of injections.
2. Careful assessment and selection of potential sites ensures adequate absorption of the medication. Appropriate sites include, but are not limited to, the abdomen, outer posterior aspect of arm, and anterior aspect of the thigh.
 - a. The upper abdomen is the best site for clients with little peripheral subcutaneous tissue.
 - b. The injection site should have good circulation and be free of tenderness, hardness, edema, and skin lesions such as moles and scar tissue.
 - c. Assess the skin for lipodystrophy and avoid these areas.
3. Ask the client which site they prefer for needle insertion.
4. The depth of subcutaneous tissue influences the nurse's choice of needle length and angle of the needle insertion. Pinch the tissue to determine the required needle length. The preferred needle length is one half the width of the skin fold.
5. Insert a 25 G or 27G 3/8" butterfly needle at a 45° angle. For injection in obese clients, a 3/4" needle is the longest needle for SC use and the angle of insertion is 90°.
6. The bevel may be inserted either up or down. There is no evidence to support either method.
7. For intermittent injections, use the smallest possible volume of Normal Saline to clear the infusion set between injections. This is to minimize the amount of fluid injected in the subcutaneous space. The volume required to flush the interlink injection adaptor is 0.2 ml, but the amount to flush infusion sets varies widely and is not always noted on the package. It is therefore important to note the required volume, determined in the procedure, in the client's health record.
8. Maximum volume for an intermittent injection is 2.5 ml including the flush solution.
9. Change and rotate the SC site and infusion set Q 3 days.
10. Change the SC site if the site is reddened, hardened, or leaking; or if the medication is changed. Also change the SC site if the concentration of medication for a continuous infusion is changed.
11. Assessments include site assessment at the beginning of each shift and intermittently through the day. Also assess the medication effect to determine that the desired effect is being achieved.
12. If medication effects change (e.g. client's pain increases), assess the site to determine if there is adequate absorption of medication. Change the SC site and re-assess the client. If the medication is still ineffective, (e.g. overall pain persists) notify the physician to re-assess the medication regime.
13. Use one site per intermittent medication or continuous infusion. Label each site to indicate the medication being delivered at that site. Medications may not be absorbed quickly from the subcutaneous tissue and they may interact when more than one medication is being given at the same site.
14. Continuous infusions are delivered using an infusion pump.



Equipment

- 2% chlorhexidine with 70% alcohol prep pad
 - IV 3000 transparent dressing 6 cm X 7 cm
 - Adhesive fabric dressing (e.g. Primapore) in hypersensitive clients
 - Subcutaneous infusion set:
 - #25 G 3/8"
 - #27 G 5/8"
 - #27 G 1/2"For obese clients-Subcutaneous infusion set #25 G with 3/4" needle
 - Non sterile Gloves
 - Appropriate infusion administration set for infusion pump (for continuous infusions)
- For intermittent infusions, also include:
- 3 ml syringe
 - Single dose vial cannula
 - Sterile normal saline vial to flush set
 - Blunt plastic cannula
 - Interlink injection adapter
 - Medication as ordered

Procedure for Inserting SC Infusion Set

1. Perform hand hygiene and glove.
2. Assess and select a subcutaneous site with good circulation and that is free of redness, swelling, tenderness and hardness.
3. Select appropriate infusion set, open package and remove cap.
4. Attach interlink injection adaptor to infusion set for intermittent infusions. Attach appropriate tubing/extension to the infusion set for continuous infusions.
5. Prime the infusion set and tubing with the medication for continuous infusions. For intermittent administration of medication, prime the interlink injection adaptor and the infusion set with Normal Saline and document the volume of Normal Saline required.
6. Maintain sterility of set by leaving it in the package.
7. Cleanse selected skin area well with an alcohol/chlorhexidine swab covering an area 10cm in circumference. Allow to air dry.
8. Hold the wings of the infusion set and insert the needle at a 45° angle. If the client is obese, insert the needle at a 90° angle. Cover with transparent dressing, ensure that the dressing covers one inch around the insertion site. Date the dressing. If the client is receiving more than one medication by an indwelling SC set, write the name of the medication to be administered at this site.



Additional Procedure for Intermittent Injections

1. Prepare the medication ordered by the physician or through the Nunavut Formulary and the Normal Saline flush solution.
2. Cleanse the interlink injection port with an alcohol swab.
3. Slowly deliver the medication.
4. Flush the infusion set with normal saline flush solution to ensure all the medication has been delivered. The volume required was determined and documented in step 5.

Additional Procedure for Continuous Infusions

1. Using an infusion pump, start the infusion.
2. Follow the procedure for continuous infusion according to the instructions included with the infusion pump being used and the physician's orders.
3. Attach the infusion set directly to the administration set for continuous infusions.

Pediatric Consideration

Only administer amounts up to 0.5ml subcutaneously in small children.

Documentation

1. Document insertion, date and location of indwelling infusion set in the client's health record.
2. Document the volume of Normal Saline required to flush the infusion set and interlink adaptor in the client's health record.
3. Document all medications in the appropriate section of the client's health record.

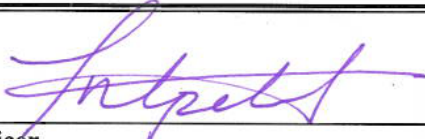

Client Education

Teach the client to inform the nurse if there is any pain, redness, leaking, or swelling at the site; or if there is decreased medication effect.

References

Perry, A. G. and Potter, P.A. (2010). *Clinical Nursing Skills and Techniques 7th ed.* Mosby: St. Louis.

Lewis, S., Heitkemper, M., and Dirksen S. (2004). *Medical-Surgical Nursing: Assessment and Management of Clinical Problems 6th ed.* Mosby: St Louis

Approved by:  11 FEB 2011		Effective Date: April 1, 2011
Chief Nursing Officer	Date	
 February 11, 2011		
Deputy Minister of Health and Social Services		Date

