



Capital Health

INTERDISCIPLINARY CLINICAL MANUAL

Policy & Procedure

TITLE:	Initiation and Administration of Medications Via an Indwelling Winged Set (Subcutaneous Butterfly Needle)	NUMBER:	CC 80-060
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A. CAPPED INDWELLING WINGED SET (SUBCUTANEOUS BUTTERFLY NEEDLE)

POLICY

1. Administration of intermittent subcutaneous medications via capped indwelling winged set (butterfly) may be managed on any nursing unit, in any nursing clinic and at home.
2. LPNs, **in approved practice settings only**, may initiate and administer *intermittent* medications via an indwelling winged set. (Refer to LPN Skills CC 02-008 for the list of currently approved practice settings.)
3. A physician must write the order for subcutaneous medications.
4. Only safety winged sets (butterfly needles) are to be used.
5. When initiating a winged set subcutaneously, tubing can be primed with the medication **if** medication is to be administered at time of insertion **and** the medication used to prime the tubing is part of the total dose to be administered (i.e. Prepare medication to be administered and prime tubing with same, leaving syringe attached to administer remaining medication. Flush with normal saline). **Otherwise, prime with normal saline if for later use.**
6. A single indwelling winged set is to be used when:
 - 6.1. Administering a single medication (flush with 1 mL normal saline flush).
 - 6.2. Administering multiple **compatible** medications (flush with 1 mL normal saline flush following the last medication given).



- 6.3. Administering multiple **incompatible** medications (flush with 1 mL normal saline flush in **between** medications, **and** following administration of the last medication given). **If** incompatible medications are to be administered frequently, the establishment of an additional subcutaneous site should be considered.
7. The RN, or LPN (in approved practice settings), administering the medication is to check the compatibility if administering multiple medications via the same winged set.
8. **The winged set must always be left with normal saline in the tubing once medication(s) is administered.**
9. The site is to be assessed a minimum of once a shift, or on each home visit, for signs of redness, swelling, leakage, pain or induration. The nurse in the home setting is to teach patients and/or caregivers how to perform site assessments.
10. The subcutaneous site is to be changed every 7 days, or more frequently if there is any sign of local redness swelling, leakage, pain or induration (hardness).

GUIDING PRINCIPLES

1. The preferred subcutaneous sites include upper chest, abdomen, upper arms and thigh. When choosing the site, consideration should be given to offering the patient the greatest freedom of movement. The following areas should be avoided:
 - 1.1. Bony prominences and radiotherapy-treated areas
 - 1.2. Limbs with a hemodialysis fistula, or same side as previous lymph node dissection surgery.
2. If the patient complains of burning during or immediately after the medication is given:
 - 2.1. the concentration may be irritating. Inject more slowly.
 - 2.2. the rate of injection may be too fast. Inject more slowly.
 - 2.3. the needle may have pulled back into the intradermal space. If this happens, place a folded 2x2 gauze under the butterfly wings to elevate the needle to 45 degrees. If this is not successful the needle should be changed.
3. The maximum volume to be administered per site at one time is 5 mL. At this time there is no consensus in the literature regarding the frequency that the maximum volume can be administered. It is the responsibility of the RN, or LPN (in approved practice settings), to assess patient tolerance and site, and to establish a second site if needed for larger volumes or incompatibility.
4. Home palliative care patients should always have a second winged set (subcutaneous butterfly) site established, regardless of the number of medications to be given, to ensure there is a back-up line available if required.
5. Check to see that the subcutaneous route is indicated for the specific medication.
 - 5.1. **The list of other medications that have been approved by the Capital Health Drugs and Therapeutics Committee for administration via a capped indwelling winged set or via a continuous subcutaneous infusion is appended and will be updated as required. (See Appendix A).**

INITIATION OF A CAPPED INDWELLING WINGED SET (SUBCUTANEOUS BUTTERFLY)

EQUIPMENT

- 23 or 25 gauge Winged Set (e.g. Safety-Lok Blood Collection Set)
*The Push Button Blood Collection Set is *not* to be used for the delivery of subcutaneous medications.
- Needle-Free Adaptor (Clave Connector)
- Antiseptic Swab (such as Soluprep- 70% alcohol and 2% Chlorhexidine)
*If patient has an allergy to alcohol, povidine-iodine may be used.
- Small Transparent Dressing
- Syringe with Medication
- Normal Saline Flush Syringe

PROCEDURE

1. Connect the winged set and needle-free adaptor.
2. Prime the winged set tubing with medication or normal saline (see [policy statement #4](#) - page 1).
3. Cleanse the skin with Antiseptic Swab (i.e. Soluprep).
4. Insert the needle subcutaneously at a 45-degree angle.
5. Secure with a transparent dressing.
6. Document the procedure. Indicate date and time of insertion on the transparent dressing, nursing Kardex (careplan) and progress notes.

ADMINISTRATION OF SUBCUTANEOUS MEDICATION VIA A CAPPED INDWELLING WINGED SET (SUBCUTANEOUS BUTTERFLY)

EQUIPMENT

- Syringe(s) - One for each medication to be administered.
- Needle(s).
- Medication(s)
- Normal Saline Flush Syringe
- Alcohol Swab

PROCEDURE (One Medication)

1. Prepare the medication.
2. Swab the injection cap with an alcohol swab and allow to air dry.
3. Remove the needle.



4. Attach the syringe with medication into the clave connector and administer medication.
5. Flush with 1 mL sterile saline for injection.
6. Document on the MAR.

PROCEDURE (Two or More Medications)

1. Prepare medications and label the syringes.
2. Swab the injection cap with an alcohol swab and allow to air dry.
3. Remove the needle.
4. Attach the syringe with medication to the needle-free adaptor and administer medication. Repeat steps 2, 3 and 4 for each of the medications. Do not flush with sterile saline between medications **unless** medications are incompatible.
5. Flush with 1 mL sterile saline for injection after the last medication is given.
6. Complete the MAR.

B. CONTINUOUS SUBCUTANEOUS INFUSION OF MEDICATIONS

POLICY

1. Administration of continuous subcutaneous medications via an indwelling winged set may be managed on any nursing unit, in any nursing clinic and at home, by a Registered Nurse.
2. **LPNs do not administer or manage continuous subcutaneous medication infusions.**
3. A physician must write the order for continuous subcutaneous medication(s) to be administered indicating:
 - 3.1. the dose(s),
 - 3.2. rate and/or length of time over which the medication should be administered, and
 - 3.3. the type of infusion device to be used (refer to specific Policy and Procedure or Clinical Practice Guideline, as stated below in the Related Capital Health Documents section).
4. Monitoring parameters are to be clearly written in the physician's orders.
5. Policy statements for the Capped Indwelling winged set (see above) are to be followed if initiating an indwelling subcutaneous winged set.
6. Initiation of a continuous medication infusion via a subcutaneous winged set is to be documented on the Medication Administration Record (MAR), Kardex and nursing flowsheet.
7. The CADD Pump Record or Syringe Drive form (# CD0303MR) is to be completed at the end of each shift. Initiation of and changes in type or dose of medication, are to be documented at the top of the Record with the date when the change was made.

GUIDING PRINCIPLES

1. Intermittent subcutaneous dosing is tried first and if there is an increase in the frequency of injections needed, or if the dosing schedule is ineffective, a continuous infusion may be considered appropriate.
2. The same Guiding Principles for the Capped Indwelling Winged set should be followed (see above), with the exception of the maximum volume being at a rate of 5 mL per hour. (**Remember**, maximum volumes tolerated depend upon the concentration and irritability of the specific medication(s) being administered).
3. A second subcutaneous winged set should be in place for use with intermittent breakthrough medications, and/or as a back-up line, especially for patients in the home setting..
4. A continuous subcutaneous infusion can be delivered through a Computerized Ambulatory Drug Delivery Pump (CADD), a Syringe Driver, a Patient Controlled Analgesia pump (PCA), or a regular infusion pump (e.g. Plum XL **Micro**/Macro), provided the nurse has received education on the use of the specific model and type of medication delivery device. Refer to specific Policy and Procedure or Clinical Practice Guideline, as stated below in the Related Capital Health Documents section.

EQUIPMENT

- Alcohol Swab
- Small Transparent Dressing
- Continuous Infusion Device (i.e. Syringe Driver, CADD Pump, PCA, or Intravenous Pump), and related equipment (refer to specific Policy and Procedure or Clinical Practice Guideline, as stated below in the Related Capital Health Documents section, and/or operator's manual)

PROCEDURE

1. Refer to specific CDHA Policy & Procedure, Clinical Practice Guideline, and/or operator's manual related to continuous infusion device being used to deliver medication (i.e. Syringe Driver, CADD Pump, PCA, or Intravenous Pump) for instructions on set up and operation.
2. Use existing winged set if one is in place by removing needle-free connector and attaching the primed extension tubing.

OR

3. Follow procedure for Capped Indwelling Winged Set (Section A, above) and attach the primed extension tubing.

RELATED CAPITAL HEALTH DOCUMENTS

Policies

Continuous S/C Med Adm via Graseby Syringe Driver CC 80-025

CADD Ambulatory Infusion Pump, Care of a Patient Receiving Medication Via a CC- (pending)

Patient Controlled Analgesia CC07-070 (SC)

LPN Skills CC 02-008

Forms

CADD Pump Record or Syringe Drive (CD0303MR)

REFERENCES

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- 99 Common Questions (and More) About Palliative Care: A Nurse's Handbook (2nd Edition). Regional Palliative Care Program, Capital Health, Edmonton, Alberta. 136-138, 2002.

HISTORICAL DATES

Integrated – March 2007 Replaces: DGH – Continuous Sub-cutaneous Analgesic Infusion Oct 1990;
MVMH – II-S-60;
TOMH – 1-B-26;
ESMH – II-P-415, II-P-415A;
QEII – NC-20-10-20.

APPENDIX A

Medications That May be Administered by the Subcutaneous (sc) Route

Medications may be given by the subcutaneous route if specified in their manufacturer's prescribing information (e.g., CPS, package insert, package label). The following is a list of additional medications (i.e., medications for which the subcutaneous route is not described by the manufacturer), approved by the District Drugs and Therapeutics Committee, Capital Health that may be administered by the subcutaneous (sc) route of administration. Clinical practice and/ or documentation in the literature supports the subcutaneous route of administration for these medications.

MEDICATION	COMMENTS
Atropine	Subcutaneous route recommended by manufacturer.
Chlorpromazine	Mild to severe local irritation; too irritating for continuous sc infusion.
Codeine	
Dexamethasone	
Dimenhydrinate	
Fentanyl	
Furosemide	May cause transient burning and stinging (inject slowly).
Glycopyrrolate	
Haloperidol	
Hydromorphone	
Hyoscine butylbromide	
Hyoscine hydrobromide (scopolamine)	
Hydroxyzine	Based on experience with Palliative Care patients.
Ketamine	Data for continuous sc infusion only.
Ketorolac	
Lidocaine	Data for continuous sc infusion only.
Lorazepam	
Loxapine	Reports of intermittent administration. May cause irritation.
Meperidine	Not usually used in Palliative Care.
Methotrimeprazine	
Metoclopramide	
Midazolam	
Morphine	
Octreotide	
Ondansetron	
Phenobarbital	
Ranitidine	Based on experience with Palliative Care patients.

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