PURPOSE:

This protocol supports the practice of administering one or more medications via Continuous Subcutaneous Infusion (CSCI) delivered by Computerized Ambulatory Drug Delivery (CADD®) pump to Registered Hospice Palliative Care (HPC) patients/clients who are receiving services in Tertiary Hospice Palliative Care Units (THPCU), Hospice Residences, and Home Health in Fraser Health (FH). It is intended to guide the practice of physicians, nurses and pharmacists in the use of CSCI.

1.0 BACKGROUND

Hospice Palliative Care patients /clients who are registered with the End of Life Care Program in Fraser Health (FH) are considered to be in the final stages of a life-limiting illness, with a prognosis of weeks to months (but not years). Many of these people have a cancer diagnosis and some of them have major organ failure (heart, lung, liver, or kidney) as the terminal outcome of a chronic illness. Pain and dyspnea are common at the end of life for patients with non-cancer illnesses as well as those with terminal cancer; for both of those symptoms an opioid analgesic is often considered an appropriate and effective medication. 1-6 The oral route of administration is usually preferred 2, 7, 8 but parenteral routes need to be considered in the following instances: impaired swallowing; gastro-intestinal obstruction; when very high doses of analgesic are required and the oral dose would be unmanageable, and when standard oral opiate therapy may be limited.2, 5, 9, 10, 11 Administration of medications by intermittent subcutaneous (SC) injection is limited by dose volume (patient discomfort) and "bolus effect" (toxicity at peak concentration and/or pain breakthrough at trough).2, 8, 12 There is evidence of no significant differences between the intravenous (IV) and the subcutaneous (SC) routes for most patients, especially when administered by subcutaneous infusion 6, 13, 14, but the IV route is not feasible for patients at home or in Hospice Residences. The use of continuous subcutaneous infusion of opioids is effective and safe in terminal illness and has a proven role in pain management at end of life.2, 9, 15 The advantages of using CSCI include providing a steady state of analgesia, simplicity of medication administration, possibly fewer gastrointestinal side effects, and portability that allows for maintenance of functional ability and for management at home; the disadvantages include local irritation at the infusion site, poor absorption at higher infused volumes, the relatively high cost of purchasing or renting CADD® pumps, and the cost of preparing and delivering medication and supplies to people at home.8, 12, 16 Still, use of CSCI can lower costs by replacing IV infusions and allowing for discharge home or to a Hospice Residence.13, 15, 17

It is not uncommon for other medications to be added to the opioid in an infusion. The administration of analgesics, antiemetics, anxiolytic sedatives, and dexamethasone by continuous subcutaneous infusions is well-established in palliative care, but the stability and compatibility of many of these combinations is not known.2, 18, 19 In the United Kingdom laboratory, physical, and chemical data are available for less than

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half of the most frequently used combinations.\textsuperscript{20} Relying on observational data such as the absence of discoloration, crystallization, or precipitation is subjective and imprecise, and generally only major incompatibilities will be detected in this way.\textsuperscript{2, 18, 20} There are a few studies of specific drug combinations \textsuperscript{21-24} and there is need for much more research; without compatibility data optimal symptom control could be compromised.\textsuperscript{17, 25} It has been suggested that the number of drugs in an infusion mixture be limited to three or less\textsuperscript{2}. Information about compatibility is available in texts such as The Syringe Driver\textsuperscript{18} and through internet databases of compatible drug combinations, such as \url{www.pallmed.net} and \url{www.palliativedrugs.com}.

It has been estimated that up to a quarter of all prescriptions in palliative medicine are for licensed drugs that are used for unlicensed indications or that are given by an unlicensed route\textsuperscript{(7, 26)}, and this is termed "off-label" use. "Off-label" is \textit{the use outside the specifications of its marketing authorization, including prescription for an unlicensed indication and/or by an unlicensed route}\textsuperscript{27} (p. 365). The lack of strong evidence for the use of off-label medications is probably related to the difficulties in attracting research funding from pharmaceutical companies, who may not see much benefit in supporting studies for symptom management at end of life, and the difficulty of recruiting palliative patients into clinical trials.\textsuperscript{5, 27-29} Despite this, off-label prescription is very often grounded in pharmacological principles and on clinical outcomes. A study looking at the unlicensed uses of medication in a palliative care unit found that 68% of the drug prescriptions were supported by license (45% of those given SC were licensed for the given indication), 17% were licensed for the given indication in a different clinical situation, and 15% were for indications not supported in the product license, although their use was supported in the literature: most of the drugs in this category were given subcutaneously.\textsuperscript{28}

\section*{2.0 DEFINITIONS}

\textbf{CADD\textsuperscript{®} Pump}  
- A Computerized Ambulatory Drug Delivery (CADD\textsuperscript{®}) pump is a delivery system for providing one or more medications subcutaneously at a continuous rate of infusion and may also have patient controlled demand doses (breakthrough doses).

\textbf{Caregiver}  
- The caregiver may be a professional or a non-professional care-provider.
- A professional caregiver is a nurse, (RN/LPN) working in THPCU, Hospice Residences and Home Health.
- A non-professional caregiver is a person 19 years or older who agrees to provide the support needed to enable CSCI at home. This is usually a relative but can be a friend of the person who will receive CSCI.
Chemical Compatibility Data
- Evidence from a laboratory study of the drug mixture that verifies medications maintained their chemical integrity without degradation or decomposition, and without forming potentially toxic compounds.\(^{18, 25}\)

Clinical Compatibility Data
- Evidence from a clinical setting that verifies expected outcomes were achieved, meaning symptoms were adequately managed.\(^{18}\)
- It is assumed that the drugs in the mixture are compatible if clinical outcomes are met.

Community Pharmacy Designate (CPD)
- A community pharmacy designate is one that meets the criteria established by the College of Pharmacists of BC, Fraser Health Pharmacy Standards, or the accepted Standards in HPC Clinical References, related to the preparation of medications for CSCI, and that will deliver medications to the home.
- Some CPD may also supply the CADD\(^{\circ}\) pumps.

Compounded Sterile Preparations (CSP)
- A preparation compounded in a controlled environment employing aseptic technique, prepared in a licensed pharmacy or other health care related facility, and intended for parenteral administration.

Continuous Subcutaneous Infusion (CSCI)
- A route of medication administration characterized by the continuous controlled delivery of medication(s) into the subcutaneous tissue via an infusion pump.

Laboratory Compatibility Data
- Evidence from a laboratory study that verifies solutions of two or more drugs are compatible over a given time period.\(^{18}\)
- Laboratory physical and chemical compatibility data are available for less than half the most frequently used combinations.\(^{20}\)

Off Label Use
- "Off-label" is the use outside the specifications of its marketing authorization, including prescription for an unlicensed indication and/or by an unlicensed route\(^ {27 (p.365)}\) or in other words a licensed medication prescribed for a purpose outside its product license as defined by the pharmaceutical company, for an unlicensed indication and/or for administration by an unlicensed route.
- In some cases off-label use is referred to as unlicensed use.
• Off-label prescription is very often grounded in pharmacological principles and on clinical outcomes.
• It is meant to benefit an individual patient, and is usually well-supported by some scientific evidence as well as clinical practice in palliative medicine.7
• Clinical pharmacists can provide information and advice about use of off-label medications30

Patient
• For the purposes of this protocol, the term ‘patient’ includes ‘client’.

Patient Controlled Analgesia (PCA)
• The patient is able to titrate the opioid dose to his or her individual needs by controlling a pump that delivers bolus doses of an analgesic according to parameters set by a physician; the option for bolus dosing can be included for patients receiving continuous opioid infusion as appropriate2.

Physical Compatibility Data
• Physical compatibility means that two or more drugs in a mixture do not react with one another to produce a new compound or a precipitate.
• Often based on visual evidence that the drug mixture remains colorless, clear, and free of particulate matter or crystallization over a specified time.18, 20, 25

Required Competency in Management of CSCI and the CADD pump
• A Registered Nurse (RN) who has reviewed this Clinical Protocol and completed the CADD® Learning Module, successfully passing the Quiz and the Performance Skills Checklist, is considered to have the required competency to manage CSCI including programming of the CADD® pump. The RN who has the required competency is responsible for all duties related to management of the infusion pump.
• A Licensed Practical Nurse (LPN) would not be expected to acquire this competency, but would be able to provide limited care to a patient receiving CSCI as long as an RN with the required competency is available on site. The LPN would never be required to program the pump, change cassette/mini-bag, but could be taught to perform simple functions such as reviewing programmed parameters. The LPN may be responsible for assessing and identifying the status of the patient, symptom assessment, SC site and infusion pump functioning to the RN.

Stability Data
• Evidence that the drug or drugs in a mixture retain their dose strength and composition over a given period of time at a given temperature.18
3.0 RELATED RESOURCES

Edmonton Symptom Assessment System (ESAS) (Will be available on FH Intranet>Clinical Programs>End of Life>Documents; or contact the Hospice Palliative Care team in your area)

FH- Learning Module for CADD-Prizm® Pump. Model 6100 and 6101 (2010) (Will be available FH Intranet>Clinical Programs>End of Life>Documents or contact the Hospice Palliative Care team in your area)

FH Parenteral Drug Therapy Manual.
http://fhaweb/Programs+and+Services/Strategic+Services/Pharmacy+Services/IV+Manual/default.htm

LPN Scope of Practice Regulation, Health Professions Act 1996

Mosby's Nursing Skills, Subcutaneous Catheter Initiation

RN Scope of Practice Regulation, HPA 2005
http://www.healthgov.bc.ca/leg/pdfs/

Smiths-Medical online Operator’s Manual for CADD-Prizm® PCS/ Model 6100 and 6101 Ambulatory Infusion Pump, and other Resources, www.smiths-medical.com

Site-specific Nursing Policies and Procedures for Establishing and Maintaining a Subcutaneous Site

Guidelines to Facilitate the Transfer of Complex Patients (when approved will be available on FH Intranet>Clinical Programs>End of Life>Documents or contact the Hospice Palliative Care team in your area)

4.0 APPLICATION PARAMETERS

When to Initiate

- The decision to implement CSCI is based on:
  - Need for effective symptom management;
  - Loss of or unfeasibility to use other routes of administration;

- Ideally this would be based on lab data but often visual inspection is relied on to determine that degradation has not occurred.
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- Capacity of professional and non-professional caregivers to manage and monitor the infusion and to provide ongoing monitoring and assessment of the patient receiving the infusion, and
- Availability of the necessary equipment and supplies, including medication(s) provided in a cassette reservoir or mini-bag and a CADD® pump.

Decision Making Process
The decision to implement CSCI must be based on consultation and collaboration with all care providers who will be involved, each of whom has a role to play in reaching a decision.

Physician's Role (usually a HPC specialist physician)
- Assesses the patient's condition and determines that use of CSCI is the best therapeutic option for effective symptom management.
- Consults with Nursing Unit Team and/or HPC Clinical Resource Nurse (CRN) re: capacity to manage and monitor CSCI.
- Consults with the pharmacist about the specific medication(s) to be included in the infusion.
- Discusses plan to use CSCI with the patient and/or family.

HPC CRN Role
- HPC CRN engages with the Hospice, Nursing Unit or Home Health Nursing Team to establish capacity to; manage CSCI, identify, support and problem solve any real or potential barriers to implementation.
- Plans for and supports staff nurses in obtaining and maintaining required competency in management of CSCI and the CADD® Pump.
- Assists as necessary with information about how to obtain a CADD® pump.
- As necessary, facilitates transfers between care settings (home to hospital, hospital to hospice residence, for example) of patients receiving CSCI.
- Ensures that the patient is enrolled in the BC Palliative Care Drug Benefits Program.

Nursing Unit Team Role (THPCU, Hospice Residence)
- Patient Care Coordinator (PCC) or charge nurse identifies that staff mix (RN/LPN) can accommodate a patient receiving CSCI, and whether the staff have the knowledge and skills to manage CSCI.
- Each unit should keep a record of nurses with the required competency in management of CSCI and the CADD® Pump if CSCI is a common practice on those units (THPCU, Hospice Residences).
• Implementation may have to be delayed until sufficient numbers of RNs have the required competency.
• Identifies source for obtaining a CADD® pump or seeks assistance from HPC CRN in obtaining a pump.
• Ensures Discharge Planning begins as soon as decision is made to initiate CSCI, when patient goal is to transfer to another care setting.
• Assessment and initial teaching of the non-professional (family) caregiver will be done by an RN with the required competency prior to discharge home.

Home Health Nursing Team Role
• Home Health Liaison refers patient to Home Health Service if not already receiving care.
• Team Leader in Home Health identifies that there is sufficient staffing by RNs with the required competency to accommodate care at home of patient receiving CSCI.
• The Nurse Educator in Home Health will liaise with the HPC CRN as necessary to provide education and skills training to RNs in order for them to achieve and maintain required competency in management of patients receiving CSCI via CADD® pump.
• The role of the LPN in caring for the patient at home with CSCI will be made explicit by the Team Leader or Nurse Educator; however the LPN role will always adhere to their scope of practice with regards to CSCI which includes assessment of the CSCI, symptoms and S/C site and working in collaboration with RN HCN staff.
• Verifies that there is a non-professional caregiver in the home who is potentially able to monitor and maintain the CSCI.
• Identifies source for obtaining a CADD® pump and the pharmacy (CPD) that will be supplying and delivering the medication, or seeks advice from HPC CRN on how to do this.
• Identifies the resources needed to assess and teach the non-professional (family) caregiver how to monitor and manage the infusion.
• Seeks the assistance of the HPC Consultation Team as needed.

Patient/Family Role
• Seeks further information as desired about the reasons for using CSCI; capable patients have the right to refuse.
• Non-professional family caregiver understands what will be expected of him or her, and agrees to participate in care.
• The patient agrees to have the non-professional caregiver (family member or friend) participate in the monitoring and management of the CSCI at home.

Pharmacist Role (Hospital or Community pharmacist at a CPD or HPC Clinical Pharmacist Consultant)
• Discusses concerns about compatibility, solubility and stability with the ordering physician as necessary, when more than one medication is to be mixed in the cassette reservoir or mini-bag. Where information is not readily available regarding compatibility and stability, the pharmacist will notify the physician which may delay medication dispensing.

• Provides compatibility and stability information on medications provided by cassette or mini-bag, to nursing staff upon request. When no other compatibility or stability information exists the pharmacist will refer to BUNABY HOSPITAL THPCU 24 hour visual and clinical COMPATIBLE INFUSIONS JULY 4, 2004 – JULY 4, 2006 for previously administered infusion mixtures that were considered to be safe and effective or see the following link. http://fhpulse/clinical_support_services/pharmacy/policies_pdtm_ppos_forms/Pages/ParenteralDrugTherapyManual(PDTM).aspx

• The pharmacist will consider that lower concentrations of combinations are generally compatible if higher concentrations of same combination are compatible, unless alcohol or other solvents have been used in formulation to keep medication in solution. 31

• If there is no research literature to support stability or compatibility of medications, the physician and pharmacist will engage in collaborative decision-making. The collaborative decision making process could include further investigations and may mean a delay in initiation of CSCI.

• To deliver the medications to the patient’s home (if pt at home) when needed, in collaboration with patient/caregiver and nursing staff.

• HPC Pharmacist can consult with the ordering physician, community/hospital pharmacist or nursing staff as necessary to support the process of ordering medications and compatibility or stability of medications.

• For further Pharmaceutical Information see the Bibliography for Pharmaceutical References (Appendix I).

Participants in Care of the Patient Receiving CSCI
Those who participate directly in caring for the patient are primarily the professional and non-professional caregivers: nursing staff (RN and LPN) and the family member or friend who has agreed to be involved in care. The physician ordering CSCI and the pharmacist who prepares the medication cassette/mini-bag are also directly involved in care.

5.0 ASSESSMENT and CONDITION/DIAGNOSIS

Initial Patient Assessment
• Meets criteria for choosing CSCI
  o Oral route is not feasible,
  o Intermittent SC dosing is not practical or causes too much discomfort to the patient,
  o IV route is not available or desired,
  o Medication protocol necessitates CSCI. 

• Does not have a condition that would make CSCI inadvisable
  o Insufficient subcutaneous tissue (e.g. extreme cachexia),
  o Coagulation disorder,
  o Gross edema,
  o Unusual skin disorders.

• Symptom(s) of concern; intensity/severity of symptom(s)
  o Patient completes the ESAS Numerical Scale, assigning score /10 to the symptoms listed on the scale.
  o If patient is unable to provide scores the physician or nurse should document the behavioral indicators indicating distress; collateral information about the patient’s distress from a caregiver who knows the patient well should also be documented in the patient chart.

Ongoing Patient Assessment and Monitoring

• Symptom (s) of concern will be assessed using the ESAS Numerical Scale or behavioral indicators to determine that the medication therapy is effective, until the target comfort goals are met
  o At least once every 24 hours in THPCU or Hospice Residence (RN),
  o On each home visit by Home Health RN,
  o Daily by the non-professional caregiver, and
  o Once the target comfort goals have been achieved, the ESAS can be done weekly unless a new symptom arises.

• The physician will assess patient response and make adjustments to the dose or mix of medications as needed.

• The patient will be observed for the presence of unwanted side effects, such as a new symptom of confusion, increased agitation, myoclonus or increased sedation/drowsiness; these will be reported to the physician by the nurse (RN/LPN) or by the non-professional caregiver.

• The SC infusion site will be assessed at least once per shift (RN/LPN), on each home nursing visit (RN), and every 6-12 hours by the non-professional caregiver at home (as instructed by the RN) for:
  o Signs of inflammation (redness, tenderness),
  o Swelling/firmness, indicating decreased absorption, or
  o Leaking from the site.
NOTE: If a suspected allergic reaction occurs stop the infusion and notify the physician, who will assess and determine that this is a true allergy. If it is a true allergy, the pharmacist should be informed and a special medication incident report should be completed. The incident report can be completed online or downloaded from [https://fha.bcpsls.ca/patient](https://fha.bcpsls.ca/patient).

Signs and symptoms of a true allergy may include intense irritation or pain /tenderness at the site, and systemic reactions such as hives, oral numbness, swelling of tongue, and breathing difficulties.

- The infusion solution will be inspected by looking carefully at the fluid in the tubing or in the mini bag at least once per shift (RN/LPN), on each home visit (RN), and every 6 – 12 hours by the non-professional caregiver at home (as instructed by the nurse) for:
  - Clarity and colorlessness,
  - Absence of crystals or precipitate.

NOTE: If the solution becomes cloudy or takes on coloration, or if crystals or precipitate are observed stop the infusion immediately and contact the physician and the pharmacist. An incident report should also be completed. It can be completed online or downloaded from [https://fha.bcpsls.ca/patient](https://fha.bcpsls.ca/patient).

Non-Professional Caregiver Assessment

- Initial assessment – before deciding to use CSCI at home the caregiver will be assessed for:
  - Willingness and ability to learn how to monitor and manage the infusion,
  - Availability to be present in the home around the clock,
  - Physical ability (vision, hearing, and manual dexterity) to assess and monitor the infusion site, hear the alarms, perform simple tasks, such: as turning the pump off and on, changing the battery, determining that the pump is running, and trouble-shooting the error or alarm messages on the display screen on the pump.

- **The lack of a willing and capable non-professional caregiver may disqualify a patient from receiving CSCI at home.**

- Ongoing assessment – at each home visit the home health nurse will assess caregivers:
  - The willingness and ability of the caregiver to continue to monitor and manage the CSCI,
  - The need for reinforcement of the teaching related to providing the necessary care,
  - If it appears that the caregiver does not have the ability to manage, or is no longer willing to support the patient to receive CSCI at home, the nurse will communicate that to the Home Health team leader, or the HPC CRN/CNS, and to the ordering physician.

### 6.0 INTERVENTIONS

<table>
<thead>
<tr>
<th>Obtaining</th>
<th>CADD Pump and Medication Cassette, or Mini-bag with CADD®</th>
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Equipment and Medication Administration Set

- The FH Standard is to order the pump and other supplies from Calea Pharmacy for people receiving CSCI at home and in Hospice Residences (Appendix II).
  - Calea requires 24 hours notice to prepare and deliver the medication and equipment,
  - Calea is not able to fill prescriptions over the weekend, so enough medication must be ordered to cover weekend and stat holidays.
- Some sites own their own CADD® pumps which may be a different type than noted in this document.
- Sites that own CADD® pumps are responsible for ensuring that they are inspected regularly by a biomedical professional to ensure safe and reliable functioning.
- Medications not provided by Calea must be prepared by a hospital pharmacy or community pharmacy designate (CPD), and must be supplied in a medication cassette or a mini-bag.
  - A CADD® Administration set must be used with a mini-bag.

Components of a Physician Order

- Name of the drug or drugs,
  * A duplicate prescription form must be used when an opioid is used in an infusion for patients at home.
- Concentration of the drug or drugs,
  * Choose a higher concentration in order to keep the volume infused as low as possible.
- Rate of administration, in mg, mcg, (or mL per hour, if more than one medication is in the infusion),
  * The volume infused /hr should be as low as possible to preserve the SC site as long as possible. The usual rate is 0.1 – 5 mL per hour, but some patients may require higher volumes.
  * Care should be taken when a range in volume is ordered, as increasing or decreasing mL/hr can have a large effect on the dose; upward titration should not generally occur more frequently than q8h.(8)
- Demand dose, lockout time, and number of doses per time period if ordering a breakthrough dose.
- Clinician bolus dose – suggested when increasing the base rate, and given at the same time so as to more quickly reach steady state of
drug concentration in the blood.\(^{(9,12)}\)
The preferred diluent is normal saline, unless otherwise indicated by the particular drug or drugs chosen.\(^{(18)}\)

### Establishing SC site(s)

**Possible sites:**
- Preferred sites: abdomen, upper or outer aspect of thigh,
- Other possible sites: sub-clavicular area, anterior chest wall, upper outer aspect of the arms,
- Rotate sites,
- Avoid areas that are swollen, hard, or bruised/tender,
- Sites can last up to 7 days, and should be changed when the site appears inflamed, is leaking, or becomes firm/hard.

### Equipment and Procedure:
- See Mosby's Nursing Skills (on-line through FH Intranet) – *Subcutaneous Catheter Initiation* (or Site Specific Policies and Procedures).

### Visual Inspection

Visually inspect the cassette or mini-bag and tubing to ensure the fluid is colorless, clear, and free of crystals or particulate matter. **Do not use** the medication solution if it is not clear, colorless, and free of particulate matter.

- This should be done whenever a cassette or mini-bag is changed,
- Tubing should be inspected at least once every 12 hours, no matter where the patient is located,
- **NOTE:** If the solution changes color, becomes cloudy, or if particulate matter forms, **stop** the infusion immediately; notify the physician and the pharmacy that prepared the medication. A special medication incident report should be completed.

### Stability

In FH, drug mixtures in mini bags or medication cassettes are considered to be stable at room temperature for 24 hours. Where a community pharmacy (CPD) is able to prepare infusions DAILY, they are supplied daily, otherwise stability may vary depending on the drug combinations and the conditions under which the individual pharmacy prepares the infusions. The CPD will determine length of stability for each medication or combination of medications they prepare. Single drug solutions are usually considered stable for up to several days at room temperature.
Reviewing the Programmed Parameters

Pumps that are provided by Calea Pharmacy will be programmed according to the physician’s order prior to being delivered to the home or hospice residence.

The parameters must be reviewed by the nurse before connecting the pump and medication to the patient, and whenever the cassette or mini-bag is changed.

See the FH CADD Learning Module for direction on using a CADD® pump.

Changing the Tubing

Cassette – tubing is attached to the cassette, and is new each time a cassette is changed.

Mini-bag – CADD® Administration set/tubing is changed every three days.

Frequency of Nursing Assessments

Home

- RN should visit daily until the patient and caregiver have demonstrated ability to manage the infusion between nursing visits, which should be at least once a week.
- Review of the programmed parameters should be done at each visit.
- Condition of the infusion site and appearance of the medication solution should be assessed on each visit.
- Review the Specifics for Home Care Nurses Checklist (Appendix III).

THPCU or Hospice Residence

- Review of programmed parameters should be done at the start of each shift.
- Condition of the infusion site and appearance of the medication solution should be done at least once per shift.

Responding to Alarms


Non-professional caregiver will be instructed on how to use the CADD® pump and given a Patient Information booklet from CADD Prizm VIP® for models 6100 and 6101 www.smiths-medical.com.
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**Date Released:** May 9, 2011

## Troubleshooting


Non-professional caregiver will be instructed on how to troubleshoot and given a Patient Information booklet from CADD Prizm VIP® for models 6100 and 6101 [www.smiths-medical.com](http://www.smiths-medical.com).

## When to refer to a consultant

### Patient / Symptom Issues
- Symptoms are not well-controlled; new symptoms arise; adverse reaction at infusion site - consult with physician and pharmacist.

### Infusion Issues
- S/C site reaction (allergic reaction, not expected deterioration of the site over time) – it is recommended an incident report be filled out at [https://fha.bcpsls.ca/patient](https://fha.bcpsls.ca/patient).
- Solution is cloudy, discolored, and/or contains particulate matter – consult with pharmacist, notify physician, and complete PSLS incident report (https://fha.bcpsls.ca/patient).
- There is a discrepancy between the expected volume and the actual volume remaining – consult with pharmacist and physician.

### Equipment Issues
- Consult with Calea Pharmacy, or with the hospital biomedical department for concerns about equipment functioning.
- Consult with local HPC CRN or Clinical Nurse Specialist for questions or concerns about obtaining the correct equipment.

## Transition points: Patient transfers from one setting to another (Complex patient)

Ensure that there is clear communication, both verbal and written or faxed, between caregivers in both settings prior to transfer.

- Medication orders, CADD® Medication Record/ CADD® Flow Sheet.
- CSCI Care Plan and CSCI Caregiver Teaching Checklist.
- Tracking of Equipment – who supplied the CADD® pump and whether it needs to be returned.

Patient's who are receiving medication via CSCI are considered to be "complex". Care providers in both the sending and receiving settings should refer to the document *Guidelines to Facilitate Transfer of Complex Patients*. 

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7.0 PATIENT /CAREGIVER EDUCATION and DISCHARGE INFORMATION

- RN or physician will explain rationale for using CSCI and the plan for managing the infusion at home to the patient and / non-professional caregiver.
- If patient is going to be discharged home from THPCU or a Hospice Residence:
  - PCC or HPC CRN to perform initial assessment and teaching of non-professional caregiver as per the Caregiver Teaching Checklist (Appendix V),
  - Ensure that there is a back up plan in place in case of a SC site or CADD® pump failure. The back up plan may include orders for an alternate route (i.e. having a back up s/c site, using intermittent SC injections, or taking medications buccally or rectally) until issue can be resolved.
- When patient is at home:
  - Prior to decision to implement CSCI, home care nurse (RN) will perform initial assessment of non-professional caregiver,
  - Home care nurse (RN) with the required competency will teach the non-professional caregiver to monitor and manage the CSCI as per the CSCI Caregiver Teaching Checklist,
  - Non-professional caregiver will be supported by ongoing assessment and monitoring by Home Care nurses and will have access to After Hours support through the BC Nurse Line.
- The Patient Information booklet available from the Smiths-Medical website should be given to the patient and the non-professional caregiver on discharge. A one-page information sheet about CSCI and using the Patient Controlled Analgesia (PCA) mode should be provided as well (Appendix VI).

8.0 DOCUMENTATION

- THPCU, Hospice Residences:
  - Medication Record for CADD/PCA Pump to be completed at least once per shift. CSCI Medication Record to be used by THPCU staff and Hospice staff (Appendix VII);
  - CSCI CADD Care Plan (Appendix VIII) will be filled out and updated and kept with the Kardex;
  - Location and condition of SC site to be documented in Progress Notes;
  - Symptom response: ESAS Numeric Scale to be completed by patient (with assistance from the nurse if necessary) once every 24 hours in THPCU and Hospice Residence and the scores to be transferred to the ESAS Graph; on each home visit by a Home Health RN, and daily by the non-professional caregiver, until target comfort goals have been achieved;
  - When appropriate, caregiver teaching to be documented on the Caregiver Teaching Checklist.

- Home Care:
CSCI CADD Care Plan will be completed on admission and updated as often as necessary (Appendix VIII);
CADD Continuous or PCA Infusion Flow Sheet will be used to document the infusion and are to be completed at each nursing visit (Appendix IX);
Location and condition of SC sites, symptom response, and caregiver assessment to be documented in the Progress Notes;
Document teaching on Caregiver Teaching Checklist (Appendix V).

9.0 CLINICAL OUTCOMES

- Improved symptom relief according to patient self-report (ESAS) and/or behavioral indicators of comfort.
- Improved quality of life because of better symptom control and opportunity for patient to engage in valued activities with loved ones, due to portability of CADD® pump.

10.0 REFERENCES


APPENDIX LIST

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APPENDIX I

BIBLIOGRAPHY – Pharmaceutical References


Canadian Pharmacists Association Opioids monograph. Compendium of Pharmaceuticals and Specialties, [online version (e-CPS)] 2009.


Personal communication Gail Saiger and Bruce Kennedy Proton-Pump Inhibitors by the Subcutaneous Route Draft. August 11, 2008.

Personal Communication Eve Sample and Mike Harlos St Boniface General Hospital Subcutaneous Medication Table. Pharmacy Dept. May 2008.

Personal communication between Eve Sample and Lawrence Jackson Pharmacist Sunnybrook Medical Centre Sept 21, 2010.


www.palliativedrugs.com Agar M. Webster R. Lacey J. Donovan B. Walker A. The Use of Subcutaneous Omeprazole in the Treatment of Dyspepsia in Palliative Care Patients JPSM 28 (6) 529-531 December 2004
APPENDIX II

B.C. PALLIATIVE CARE

BENEFITS SUPPLY ORDER FORM

Tel: 604-294-1500 ext: 6
Fax: 604-299-3940

FORMS MUST BE FAXED TO CALEA – VOICE MESSAGES WILL NOT BE ACCEPTED

HEALTH UNIT:

- Abbotsford
- Burnaby
- Chilliwack
- Delta
- Langley
- Maple Ridge
- Mission
- New West
- Surrey (Gateway)
- Surrey (Newton)
- Tri-Cities
- White Rock

Nurse ordering: ____________________________  Pt. Name: ____________________________

Please Print Name

Phone: ____________________________  PHN: ____________________________
Pager/cell: ____________________________  Address: ____________________________

Special Instructions: ____________________________  ____________________________

MRSA/VRE POSITIVE (please circle) YES  NO  *Clients must be registered on BC Palliative Benefits Program to be eligible for supplies*

<table>
<thead>
<tr>
<th>Qty</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PV447X</td>
<td>Cassette 100ml</td>
</tr>
<tr>
<td></td>
<td>PV446X</td>
<td>Cassette 50ml</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mini-Bag CCs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CADD PRIZM 6100 PCA PUMP/KEY – weekly rental</td>
</tr>
</tbody>
</table>

Author(s): Shelley Briggs, CNS  
Dr. Lynne Potter  
Eve Sample, Clinical Pharmacist  
Lucille Taylor, CNS

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May 9 2011
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADD Fanny Pack (with rental)</td>
<td>S  M  L</td>
</tr>
<tr>
<td>PV2170X</td>
<td>CADD Admin Set</td>
</tr>
<tr>
<td>PV2171X</td>
<td>Ext. Set male/male 30”</td>
</tr>
<tr>
<td>PV7009X</td>
<td>Ext. Set male/male 60”</td>
</tr>
<tr>
<td>MN1604</td>
<td>9 Volt Battery</td>
</tr>
</tbody>
</table>

Air Detector – not required for subcutaneous infusion, only used for intrathecal or IV
APPENDIX III
SPECIFICS FOR HOME CARE NURSING

In General:

1. Change battery daily, unless the physician order indicates to change it only when the pump signals that the battery is low. Always ensure there is a spare battery in the home. Make sure the patient or the caregiver know how to change the battery if necessary.

2. Review the screens each visit by pressing the Next key repeatedly.

3. Clear these screens each visit: Dose counters; Mg given; Total med given since last visit.

4. Analyze doses Given/Attempted. Liaise with MD if > 3 doses in 24 hr re: need for dose adjustment.

5. Notify Calea of any changes to the Continuous Rate of Demand Doses.

6. Ensure extra SC supplies are in the home.

7. Have an extra SC site available; backup plan should include pre-filled syringes and/or oral medication that could be given orally or by rectum, in the home.

8. If the extension tubing is not attached to a new cassette: connect the purple end of the cassette tubing to the purple end of the extension tubing; prime the extension tubing; ensure pump is returned to LL2 after priming all tubing.

9. Disposal of Unused portion of cassettes/mini bags: Return to Calea, or to the pharmacy that supplied the medication infusion.

10. For Clinicians only: Call 1-800-426-2448 (Calea) for assistance with the CADD-Prizm pump.
APPENDIX IV

Quick Reference Sheet, CADD – Prizm® VIP link


APPENDIX V

Author(s): Shelley Briggs, CNS
Dr. Lynne Potter
Eve Sample, Clinical Pharmacist
Lucille Taylor, CNS

CDST#:

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Hospice Palliative Care
CSCI via CADD Pump Caregivers Teaching Checklist

Prior to discharge home of a patient with a CSCI via a CADD pump the patient/client must be assessed to have a caregiver who is able to manage the infusion pump both mentally and physically.

Assessment:
Caregiver(s)
- must be able and available 24/7 to monitor the infusion device.
- must have the manual dexterity to operate a continuous infusion device.
- must be able to learn how to trouble-shoot the infusion device and support basic functions to keep it running (i.e. change battery, change medication infusion from one s/c site to another, assess s/c sites).
- must have the visual acuity to see signs of cloudiness or change in colour of the medication solution.
- must be able to act in the best interests of, and be in agreement with, the patient’s wishes in the administration of the medications and breakthrough doses.
- must be willing to participate in managing the CSCI via CADD

Patient
- willingness to try CSCI via CADD infusion pump
- must be assessed for risk of misusing the medications given via the pump, or of anyone in the home misusing the medications

<table>
<thead>
<tr>
<th>Skill</th>
<th>Caregiver</th>
<th>Date</th>
<th>Taught by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing Battery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changing infusion from one s/c site to another</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>s/c site assessment (redness, leaking, infusion not infusing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trouble-shooting Alarms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trouble-shoot problems with the pump and have a back up plan</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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| Assessment of stability/compatibility of medications (fluid in tubing remains clear and colourless) |   |   |

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APPENDIX VI
CONTINUOUS SUBCUTANEOUS INFUSION WITH CADD-PRIZM (R) PUMP

PATIENT AND FAMILY CAREGIVER INFORMATION

Your doctor has recommended that you receive medications through a small needle placed on your upper chest, upper arms, or upper part of the legs, and delivered by the CADD-Prizm (R) pump. The pump contains a computer which is programmed to provide medications slowly and continuously. In some cases it can also be programmed to allow you, the patient, to receive a booster dose when a special button is pressed. You, and/or a family member or friend who has agreed to help manage the pump and care for you, will be taught what to look for and how to give the booster dose if the doctor has ordered it.

The pump will come in a small soft case like a fanny pack, with a strap that makes it easy to carry around. When you are in bed the pump in its case can lie beside you or go under the pillow. If you want to have a shower, either wait till the needle needs to be re-positioned (it can be removed and the pump turned off briefly), or put the pump in a plastic shopping bag and use a coat hanger to hang it on a hook or towel rack outside the shower stall.

**If the pump is dropped in water:**
Take the pump out of the water quickly, dry it off with a towel, and call the nurse.

**If the pump is hit or dropped on a hard surface:**
Check that the pump is still running. If it has stopped – restart it by pressing and holding down the STOP/START button until the three dashes --- --- --- disappear.
Look to see if the battery door is broken or damaged, or if the hard casing of the pump is cracked.
If you can’t get the pump to work or if you are worried about it, call the nurse.

You (or the person who is helping to manage the pump and care for you) will need to watch for the following things:
- redness, soreness, or hardness around where the needle is placed;
- leaking of fluid from where the needle is placed, or from any of the connections in the tubing;
- that the fluid in the tubing is clear (like water), not cloudy;
- there are no crystals and no fine sediment in the fluid in the tubing.

If you have questions or are concerned or worried about anything to do with the pump, the fluid, or the area around where the needle is placed, please call your nurse at:
APPENDIX VII

Medication Record for CADD Pump for THPCU and Hospice Residence

CADD PUMP FLOW SHEET

Medication(s):

Type of Infusion: SC IV IT

Tasks

<table>
<thead>
<tr>
<th>OV</th>
<th>Order verification at start of each shift</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>Clearing pump at end of shift</td>
</tr>
<tr>
<td>I</td>
<td>Infusion Initiation **</td>
</tr>
<tr>
<td>DA</td>
<td>Dosage Adjustment **</td>
</tr>
<tr>
<td>C</td>
<td>Cassette / IV Bag Charge q72h or less**</td>
</tr>
<tr>
<td>T</td>
<td>Tubing change in 72 hours</td>
</tr>
<tr>
<td>B</td>
<td>Battery change</td>
</tr>
</tbody>
</table>

** needs to be verified & signed by 2 RNs

Please complete Patient Assessment Flow Sheet as well

Patient Monitoring Flow Sheet for Lidocaine, Ketamine, Midazolam, and Intrathecal Infusions
### CLINICAL PROTOCOL: Management of Continuous Subcutaneous Infusions (CSCI) in Adult Hospice Palliative Care Patients

**AUTHORIZATION:** Practice Council, End of Life Care Program

**Date Released:** May 9, 2011

---

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>TASK</th>
<th>RESIDUAL VOLUME ml</th>
<th>Concentration Please check:</th>
<th>Demad Dose (amount)</th>
<th>Dose Lockout (minutes)</th>
<th>DEMAND DOSES attempted</th>
<th>Total amount of drug given (cont. + DD)</th>
<th>Integrity of Solution LL</th>
<th>RN Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>^ mg/ml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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May 9 2011
# APPENDIX VIII

## Continuous SubCutaneous Infusion CADD CARE PLAN

### Continuous Infusion +/- Patient Controlled Analgesia (PCA)

<table>
<thead>
<tr>
<th>Description of Problem (Write in Ink)</th>
<th>Expected Outcome and Assessment (Write in Ink)</th>
<th>Nursing Intervention (Write in Pencil)</th>
<th>Worksheet (Write in Pencil)</th>
</tr>
</thead>
</table>
| #1 Management of Medication via subcutaneous infusion | SC medication will be administered as prescribed | CADD PUMP  
- Battery will be changed daily or ________  
- Monitor and document on CADD Flow Sheet Q shift/visit and with any changes to infusion.  
- Tubing will be changed when the cassette is changed, or Q 3 days if using a mini-bag  
- SC Tubing and Mini-bag/Cassette changed Q ___ Days | Due: __________ |
| - S.C. Intima  
- B.D. Saf-T-Intima  
- Other type | | | |
| Medication: | | | |
| Name: __________ | | | |
| Purpose: __________ | | | |
| Teaching if Pt at home: | Client/Caregiver will manage basic trouble-shooting functions of CSCI | | |
| SC site will remain patent and intact as assessed regularly by hospice staff/HCN/client/caregiver | | | |
| Location of Sites and date of insertion: | | | |
| 1. | | Due: __________ | |
| 2. | | Due: __________ | |
| 3. | | Due: __________ | |
| 4. | | Due: __________ | |

Author(s): Shelley Briggs, CNS  
Dr. Lynne Potter  
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Lucille Taylor, CNS

CDST#:

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<table>
<thead>
<tr>
<th>Name: ____________</th>
<th>Purpose: ____________</th>
<th>signs of infection or leaking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: ____________</td>
<td>Purpose: ____________</td>
<td>□ Is able to change CADD pump battery daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Is able to change infusion from one S/C site to another</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Is able to change cassette (not mandatory)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pump Information:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserve Volume: ____________</td>
</tr>
<tr>
<td>Concentration: ____________</td>
</tr>
<tr>
<td>Units (mcg or mg or ml): ____________</td>
</tr>
<tr>
<td>Rate of Infusion: ____________</td>
</tr>
<tr>
<td>Demand Dose: ____________</td>
</tr>
<tr>
<td>Demand Dose Lock out: _____ (min)</td>
</tr>
<tr>
<td>Number of demand doses allowed/hr: _______</td>
</tr>
<tr>
<td>Lock level: _____ Code: _______</td>
</tr>
</tbody>
</table>
APPENDIX VII
CONTINUOUS +/- PCA Care Plan

GUIDELINE

1.0 Purpose: to ensure patient/client’s receive appropriate, standardized care when they are receiving medications from a Continuous Sub-Cutaneous Infusion (CSCI) via a CADD pump infusion device. This care-plan supports RNs working in Home Health, Hospice Residence and Tertiary Hospice Palliative Care units to be able to documentation appropriately when caring for a patient/client with a CSCI. This guideline supports the use of a Continuous Infusion +/- Patient Controlled Analgesia.

2.0 Definitions:
- Continuous Subcutaneous Infusion (CSCI): patient/client receives a continuous subcutaneous infusion of one or more medications
- Patient Controlled Analgesia (PCA): patient/client receives self-administered bolus doses of medications on demand, it is usually combined with a continuous infusion
- CADD infusion device: Computerized Automatic Drug Delivery device that delivers medications to a patient/client continuously +/- bolus doses. See CADD pump Learning Module for more information on the pump

3.0 Patient Population: all patients/clients who are receiving care through the end of life program (i.e. in a hospice residence, or THPCU or at home), are register on the HPC program and who have a CSCI infused via a CADD pump infusion device

4.0 Responsible Person: The RN providing care to the patient

5.0 Form Placement: In the section of the chart section where care plans are kept according to unit policy

6.0 Detailed Instructions:
- To be filled out at the initiation of CSCI via a CADD pump
- to be updated after any changes to the infusion parameters
- to be updated when the mini-bag/cassette, tubing or s/c site has been changed.
- If patient/client is not at home the Teaching section can be crossed out as the patient/client /family is not responsible for this care when care is provided in a FH facility (hospice residence or THPCU)

7.0 Source: Created by Shelley Briggs
8.0 Revision/Review: Every 5 years by the HPC PAC

Created on 10/29/2010 9:39:00 AM
### APPENDIX IX

**CADD CONTINUOUS INFUSION FLOW SHEET – PCA**

<table>
<thead>
<tr>
<th>Asmt Category Number</th>
<th>Problem Name and Parameters</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Medication: Subcutaneous Tx via CADD PCA pump</td>
<td>INFUSION MED(s). SEE DOCTOR’S ORDER FOR DOSE</td>
<td></td>
</tr>
<tr>
<td>#2</td>
<td>CONCENTRATION MCG or MG/ML If multiple medication infusing do not use this box</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#3</td>
<td>RATE OF INFUSION MCG/HR or MG/HR or ML/HR (circle one)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#4</td>
<td>TOTAL MG. GIVEN CLEARED? Y N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#5</td>
<td>LOCK LEVEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#6</td>
<td>CASSETTE/MINI-BAG CHANGED Y N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#7</td>
<td>BATTERY CHANGED (DAILY) Y N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#8</td>
<td>CASSETTE/MINI-BAG AND TUBING CHANGED Y N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#9</td>
<td>INTEGRITY OF SOLUTION - CLEAR/NOT CLOUDY - COLORLESS - NO PRECIPITATE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROBLEMS/COMMENTS</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

Created on February 15, 2011
APPENDIX IX

**CADD CONTINUOUS INFUSION FLOW SHEET**

<table>
<thead>
<tr>
<th>Assmt Category Number</th>
<th>PROBLEM NAME AND PARAMETERS</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Medication: Subcutaneous Tx via CADD PCA pump</td>
<td>INFUSION MED(s). SEE DOCTOR’S ORDER FOR DOSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>#1 – RESERVOIR VOLUME</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>#2 – CONCENTRATION MCG or MG/ML If multiple medication infusing do not use this box</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>#3 – RATE OF INFUSION MCG/HR or MG/HR or ML/HR (circle one)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>#4 – TOTAL MG. GIVEN CLEARED? Y N</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>#5 – LOCK LEVEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>#6 – CASSETTE CHANGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y N</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>#7 BATTERY CHANGED (DAILY)? Y N</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>#8 – CASSETTE AND TUBING CHANGED Y N</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>#9 – MEDICATION CLEAR IN CASSETTE/ TUBING</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PROBLEMS/COMMENTS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CLINICAL PROTOCOL: Management of Continuous Subcutaneous Infusions (CSCI) in Adult Hospice Palliative Care Patients

AUTHORIZATION: Practice Council, End of Life Care Program

Date Released: May 9, 2011

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APPENDIX IX

CADD CONTINUOUS AND PCA FLOW SHEET
GUIDELINES

1.0 Purpose: to ensure patient/client’s receive appropriate, standardized care when they are receiving medications from a Continuous Sub-Cutaneous Infusion (CSCI) via a CADD pump infusion device. These flow sheets are to support RNs with appropriate documentation when caring for a patient/client with a CSCI via CADD infusion device. These guidelines support the use of both the Continuous Infusion Flow sheet and the Patient Controlled Analgesia Flow sheet

2.0 Definitions:
- Continuous Infusion: patient receives a continuous subcutaneous infusion of medications
- Patient Controlled Analgesia: patient receives a self-administered bolus dose of medications on demand
- CADD infusion device: Computerized Automatic Drug Delivery device that delivers medications to a patient/client continuously +/- bolus doses. See CADD pump Learning Module for more information on the pump

3.0 Patient Population: all patients/clients who are receiving care through the end of life program (i.e. in a hospice residence, or THPCU or at home), are register on the HPC program and who have a CSCI infused via a CADD pump infusion device

4.0 Responsible Person: The RN providing care to the patient/client

5.0 Form Placement: In the section of the chart section where daily documentation is kept according to unit policy

6.0 Detailed Instructions:
- To be filled out by RN at the initiation of CSCI via a CADD pump
- To be filled out once per shift or at each HCN visit, and after any cassette/mini-bag change, or changes to the infusion parameters
- Under # 2 if there are multiple medications being infused cross out this row
- on initiation of CSCI under # 3 circle the current unit being used by this patient/client (i.e. either ml, mg, mcg)
- For the PCA flow sheet # 7 + # 8 write in the number of demand doses given or attempted according to CADD devise. Then write Y if you have cleared the number of demand doses given or
attempted, or N if you have not cleared the demand doses given or attempted. The demand doses should be cleared every 24 hours at least.

- # 9 write in the total mgs given according to the CADD pump devise. Write in Y if you clear this number or N if you have not cleared it. You should only clear the total mgs given when you are replacing the cassette/mini-bag.
- # 11 & # 12 write Y if you have changed the battery, cassette/mini-bag or tubing and then indicate the date of the next change on the care plan.
- # 13 if the medication is not clear and colourless in the tubing or cassette/mini-bag write N and then what colour it is or indicate it is cloudy. If it is not clear you must stop the infusion and contact the physicians and pharmacist.
- For the Continuous Infusion Flowsheet without PCA there are three blank rows which may be used to monitor patient specific criteria at the determination of the RN or MD.

7.0 Source: Created by Shelley Briggs on February 21, 2011
8.0 Revision/Review: Every 5 years by the EOLC PC