



Manual	Nursing Policy and Procedure Manual	NURSING POLICY & PROCEDURE
Section	C	
Program		
Approved by	Nursing PPP Committee Clinical Directors Committee VP Patient Care Services	
References		
Date	Effective: March 2010	Number: II-c-26
	Revised: November 2018; April 2019, December 2019	
	Reviewed:	

COMPUTERIZED AMBULATORY DRUG DELIVERY (CADD) PUMP – INTERMITTENT AND CONTINUOUS MEDICATION INFUSION FOR PALLIATIVE CARE

ALERTS

- **Registered Nurses (RN) must assume responsibility and care for complex and/or patients with unpredictable outcomes (CNO, 2018).**
- **Registered Practical Nurses (RPN) must not care for patients receiving KETAMINE.**

PURPOSE

To guide the RN and RPN in safe administration, assessment and monitoring practices for patients receiving palliative care treatment who require intermittent or continuous intravenous (IV) or subcutaneous medication infusions using a Computerized Ambulatory Drug Delivery pump (CADD pump).

POLICY STATEMENT

Safe administration, assessment and monitoring practices will be utilized for patients who require intermittent or continuous intravenous or subcutaneous medication infusions for palliative care. Such practices include the use of a CADD pump, completion of an independent double check for any high alert medication, the assessment of pain, and the identification and management of any potential adverse reactions or complications related to this treatment modality.

PRACTICE STATEMENT

1. A physician's order is required prior to administering medications via an established subcutaneous or IV route.
2. The CADD Pump will be utilized to administer intermittent or continuous, IV or subcutaneous medications for palliative care treatment.

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- RNs and RPNs can assume care for patients who have been identified as less complex, with more predictable outcomes, and at low risk of negative outcomes. **The RN must assume responsibility and the care for complex patients with unpredictable outcomes, and who may be at risk for negative outcomes.** Given this, the following table outlines the scope of practice related to the administration of intermittent or continuous IV or subcutaneous medication infusions for both the RN and RPN. **ALERT: RPN's must not care for patients receiving KETAMINE.**

Differentiating Scope of Practice for CADD pumps

Continuous or Intermittent:	RN	RPN
Subcutaneous Infusions	Can initiate, monitor and discontinue subcutaneous infusions with less complex, more predictable patients at low risk of negative outcomes.	
	Can initiate, monitor and discontinue subcutaneous infusions with complex, unpredictable patients at high risk of negative outcomes	
Intravenous Infusions	Can initiate intravenous infusions	
	Can monitor and discontinue intravenous infusion with <i>less</i> complex, more predictable patients at low risk of negative outcomes. ALERT: RPN's must not care for patients receiving KETAMINE.	
	Can monitor and discontinue any intravenous infusion with complex, unpredictable patients at high risk of negative outcomes.	

- An Independent Double Check will be performed prior to and during the administration of any specific continuous or intermittent IV or subcutaneous high alert medication as outlined in Policy II-i-200. A second nurse must complete and document an independent double check of the ordered infusion settings at the following times:
 - at the time of initiation of therapy
 - prior to administration of specific high alert medications or blood products, such as with a clinician delivered bolus with an infusion
 - when the concentration, dose, rate or frequency changes with each bag, syringe or cassette change
- At transfer of care (shift change or transfer between units) the nurse assuming care will verify the 8 rights of medications being administered by infusion. This does not have to be done in the presence of a second nurse
- The prescribed medication for continuous or intermittent infusions will be prepared and supplied by the Pharmacy Department.

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6. The medications and concentrations used will be limited to those included in the pre-programmed drug library within the CADD pump. The Pharmacist in collaboration with the Palliative Care Team and Nursing Professional Practice is responsible for establishing the drug library within the CADD pump.

GUIDING PRINCIPLES

1. The key for the CADD pump will be secured in a dedicated area in each clinical unit.
2. All CADD pump cassette containing Narcotic and Controlled Substances and the wastage associated with these substances, are to be managed and documented wasted according to the Narcotic and Controlled Drugs: Regulation, Management, Security, Administration Policy and Procedure II-n-050.
3. Naloxone 0.4 mg/mL ampoules must be available in the clinical unit.
4. The CADD pump infusion tubing is changed every seven (7) days, when the cassette is changed, or when the system is compromised.
5. The medication cassette placed on the CADD pump is changed when it expires, when it is empty, or when a new drug or concentration is ordered.
6. The CADD pump is to be signed out to the patient and the unit in binder kept in spiritual care office. When the CADD pump is no longer required it must be cleaned with facility approved cleaner and returned to the appropriate storage space.
7. The nurse will assess and document the pain, respiratory rate, oxygen saturation, level of sedation, nausea scale, side effects, pump settings and medication usage q1hourX4; then q4 hours, and as needed.
8. The nurse will assess the patient's pain according to the Pain Policy II-p-200.
9. If the amount of medication being delivered is changed, nurses will assess and document pain, respiratory rate, oxygen saturation, level of sedation, nausea scale, side effects, pump settings and medication usage Q4hour, and as needed
10. Vital sign assessment is not required for patients on the End of Life Care Pathway, unless otherwise specified by the physician.
11. With a prescribed change of medication or drug concentration, a new MAR will be initiated.
12. Consider the need for a secondary venous access line where applicable.
13. Nurses will clear the number of patient controlled analgesia (PCA) boluses (given and attempted) on the CADD pumps every 8 hours (0600 hrs, 1400 hrs and 2200 hrs), and document the same on the CADD Medication Administration Record (MAR).
14. The competence of team members to use infusion pumps safely is evaluated and documented at least every 2 years.
15. If a patient is being transferred to another facility, attach a note to the front of the chart requesting the CADD pump be returned to Queensway Carleton Hospital Palliative Care Team.
16. All IV or subcutaneous CADD pump infusions must have tubing with an inline air filter.

For Subcutaneous CADD Pump Infusions

17. A subcutaneous line will be established for patients requiring an intermittent or continuous medication infusion for palliative care treatment.
18. Subcutaneous sites and tubing may be left in place for up to 14 days; however the nurse should use clinical judgment to determine if the site or tubing needs to be changed more frequently. If two infusions are ordered, then two separate sites must be used.

For Intravenous CADD pump infusions:

19. When a patient is to be started on an IV CADD pump infusion, a consult for a Peripherally Inserted Central Catheter (PICC) must be requested if the patient does not have one insitu. A peripheral intravenous line may be used while waiting, or if insertion of a PICC is not in line with the goals of care. If the patient has another central venous access device, discuss the appropriateness of use with the prescribing physician.
20. Change administration sets every 4–7 days. Administration sets will be changed immediately when contamination is suspected or the integrity of the system has been compromised. A new administration set is used with every site change as per the Peripheral Intravenous Catheter: Initiation, Maintenance and Removal Policy II-i-512.

EQUIPMENT/SUPPLIES

- CADD Pump Medication Administration Record.
- The key for the CADD pump.
- Medication Cassette
- Filtered IV CADD line (Logistics # 9001827)

PROCEDURE

1. Review the physician's orders.
2. Obtain a CADD Pump from the designated storage area.
3. Obtain the appropriate medication cassette.
4. Program the CADD pump as per the physician's orders:
 - a. Ensure the concentration programmed on the pump matches the concentration of the drug on the cassette.
 - b. Program the continuous rate, PCA dose, the frequency of PCA dose and the reservoir volume
 - c. Perform an independent double check as per Policy II-i-200 Independent Double Check - Medications and Blood Products, ensuring that all the settings are correct as per the physician's orders.
5. Positively identify the patient using two (2) unique identifiers.
6. Connect the appropriate CADD pump tubing to the medication cassette and prime the line.
7. Establish and/or access a patent IV or subcutaneous site.
8. Prior to initiating an intermittent or continuous medication infusion, assess the patient's pain, respiratory rate, oxygen saturation, level of sedation, and nausea scale. If patient is

on the End of Life Pathway, vital sign assessment is not required, unless otherwise specified by physician.

9. Connect the primed CADD pump tubing to the IV or subcutaneous catheter and initiate the infusion.
10. Assess the patient, as indicated above.

PATIENT TEACHING

1. Establish the goal of symptom management with the patient.
2. Provide the patient education sheet: "CADD Pump Information for Patients and Families" (see Appendix II).
3. Instruct the patient on the use of the PCA dose button for when a dose of medication is needed.
4. Ensure that patient understands that the pump has preset limits which will prevent them from receiving too much medication.
5. In some palliative care cases, the family and/or nurse may press the button if the patient is unable to do so themselves; ensure the family or care provider is instructed regarding this process.
6. Instruct the patient to notify the nurse if he/she is experiencing side effects including: itching, rash, nausea, increased pain and hallucinations.

DOCUMENTATION

1. Document on eDoc:
 - Add: CADD pump assessment
 - If applicable: CVAD-Central Venous Access Device
 - If applicable: Subcut-Subcutaneous Line Assessment"
 - If applicable: IV -Peripheral intravenous Line Assessment
2. Document on the CADD Pump Medication Administration Record (MAR)
 - CADD pump attempted and given boluses should be cleared to 0600, 1400 and 2200 hrs daily and documented on the CADD MAR.
 - Document patient assessments, pump settings and medication usage
 - Document residual volume when changing the cassette
3. When patients are provided with CADD pumps, document when training is provided to the patient and/or family.

APPENDICES

Appendix I CADD Nursing Reference

Appendix II CADD Pump Information for Patients and Families

REFERENCES

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Queensway Carleton Hospital. (2016). Peripheral Intravenous Catheter: initiation, maintenance and removal. *Nursing Policy and Procedure Manual*

APPENDIX I

Nursing Reference

CADD®-Solis

Programming the CADD

PROGRAM THE PUMP WITHOUT THE CASSETTE IN PLACE

SET UP THE PUMP FOR A NEW PATIENT

A. Install batteries

1. Open the battery compartment at the top of the pump by turning knob counter clockwise
2. Insert 4 AA batteries matching the + & - markings
3. Close the compartment cover. Turn the knob clockwise on the cover.

B. Power On & Programming

1. Press and hold the power switch on the side of the pump
2. Do you want to start a new patient? Select YES
3. Select Therapy – PALLATIVE CARE
4. Select Qualifier – Subcutaneous or Intravenous
5. Select Drug and concentration
6. Enter Code to unlock the pump (063). After each digit – Accept Value.
7. Confirm Therapy, Qualifier, Drug and concentration are correct
8. Review pump settings. Press Review.
9. Add Physician orders to the pump settings
10. Select the **continuous rate** – using up /down buttons. Note limits on the pump settings. Select Save
11. Select PCA **dose** – using up/ down buttons. Note limits on the pump settings. Select Save
12. Select PCA **lockout** – using up/ down buttons. Select Save
13. Select **Reservoir Volume**. Enter the volume of the cassette. Select Save
14. Perform INDEPENDENT DOUBLE CHECK at this time.
15. Accept all values in correct. Select Next.
16. Confirm Independent double check performed. Select OK
17. Start pump. Select Yes

C. Attach Cassette to Pump

1. Pull the silver latch down gently.
2. Insert the cassette hooks into the hinge pins on the bottom of the pump.
3. Push up on the cassette until it firmly clicks into place.
4. Push the silver latch up.

D. Prime Tubing

1. Select YES to prime tubing. DISCONNECT THE TUBING FROM THE PATIENT, OPEN CLAMPS, THEN PRESS PRIME.
2. Prime until you see the first drop of fluid leaving the line. Stop Prime. Confirm Stop Prime Cassette not locked. Lock cassette before starting pump.
3. Insert Key and turn a quarter turn away from you
4. Start Pump? Select Yes

E. CHANGING THE CURRENT DOSING/FREQUENCY

1. Press Stop. Stop pump? Select Yes
2. Select the prescription value that needs to be changed.
3. Enter Code to continue.
4. Change value required. Select Save
5. Press Start when finished completing changes
6. Review Pump settings.
7. Perform Independent Double Check at this time.
8. Accept all values if correct. Select Next
9. Confirm Independent Double Check performed, Select OK
10. Start pump. Select YES

F. CHANGE IN THE PRESCRIPTION (New Medication Ordered)

1. Document "Given PCA/Attempted PCA" as they will be erased with new prescription.
2. Select Tasks. Start new protocol, same patient. Select.
3. Enter new program as ordered.

G. CHANGE THE MEDICATION CASSETTE

1. Press stop /start key. Stop pump? Select Yes
2. Unlock the pump. Pull silver latch down gently, pull latch down gently a second time for cassette to eject.
3. Attach new cassette (as per C).
4. Set Reservoir volume? Select YES to set reservoir volume.
5. Reset Reservoir Volume Remaining? Select Yes
6. Enter code
7. Increase reservoir volume to the desired amount. Select Save
8. Prime if required.
9. Lock Cassette.
10. Perform Independent Double check. Review settings, accept values and restart.
11. Independent double check confirm- Select OK
12. Start pump? Select YES

Nursing Reference (Continued) **CADD®-Solis**

H. VIEW REPORTS

1. Reports. Left soft key.
2. Select the report you want to view.
3. **Given and PCA Dose Counters** – Select
4. This report reviews: Given amount, given volume (in mLs), PCA doses given, and PCA doses attempted.
5. **Clear the “given and attempted” PCA doses at 0600, 1400 and 2200.**
6. **Volumes to be cleared when cassette is changed.**

I. DISCONTINUE THE PATIENT FROM THE PUMP

1. Document pump readings on the MAR
2. Press stop/start. Press **Yes** to stop pump.
3. Discontinue pump from patient.
4. Press Power button on the side of the pump to turn pump off.
5. Remove the batteries from the pump.
6. Unlock the pump with key and remove the cassette.
7. Document wastage and have it co-signed.

J. DOCUMENTATION

1. Document the CADD pump # on the MAR
2. On the CADD MAR, document pump readings at the beginning of shift, q8h and p.r.n.
3. Document on the MAR:
 - **Any changes in prescription. Have all changes verified by an Independent Double Check and co-signed.**
 - **Clear “given and attempted” PCA boluses q4h.**
 - **Patient assessments, pump settings and medication use.**
 - **Residual volume when changing the cassette.**
4. eDoc – q shift documentation on the “CADD Pump Assessment” intervention on the patient’s work list.

December 2019

APPENDIX II - CADD Pump Information for Patients and Families



CADD Pump Information for Patients and Families

What does CADD mean?

CADD stands for **C**ontinuous **A**mbulatory **D**elivery **D**evice.

How does the pump work?

The CADD pump provides a continuous flow of medicine through a small needle inserted just under the skin, or through an intravenous line. This means that your body receives a consistent amount of the medicine at all times to better control your symptoms. The small pump allows you to continue doing the things you like (walk, shower, and go outside).

What if symptoms still occur with the pump running?

If you experience symptoms, or you are about to do an activity that usually causes symptoms, you can receive an extra dose of medicine by pressing the blue button on the bottom right corner of the pump. It has “PCA dose” (patient controlled analgesic dose) written above it. The amount of this extra dose has been determined by your doctor.



PCA Dose – press here to receive extra medicine

What if I still have symptoms after an extra dose?

Tell the health care team who will be monitoring your symptoms. If you don't think you're receiving enough medicine, talk to your doctor.

Can I get too much medicine?

No. Your pump has been programmed to allow a specified number of extra doses at specified intervals according to your doctor's orders. If you press the button too soon, the pump will not deliver an extra dose.

Could I accidentally change the pump's settings?

No. CADD pumps are programmed by the health care team, and cannot be changed without a code.

Common side effects

Drowsiness is a common side effect of many medicines and is usually temporary.

Let your health care team know if you are falling asleep during conversations or while eating meals.

Other side effects you may experience will depend on the type of medicine you are receiving. Side effects include nausea, constipation, confusion, and jerking movements. Let your health care team know if you experience any of these.

You may have other questions – be sure to ask the health care team. You can write them below to help you remember.