

---

## PATIENT CONTROLLED ANALGESIA (PCA) PUMP

### PURPOSE:

To allow patients with pain to self-administer an analgesic at a dosage predetermined by the physician, using the Patient Controlled Analgesia (PCA) Pump.

### Definitions

1. **Loading Dose** - A bolus dose given prior to initiating PCA therapy - usually higher than dose given during PCA therapy.
2. **Bolus Dose** - Equivalent to a loading dose - administered during course of PCA therapy.
3. **Lockout Interval** - Predetermined period during which the patient cannot initiate doses.
4. **PCA Dose** - Amount administered each time the patient activates pump.
5. **Four Hour Limit** - Predetermined maximum drug volume, which can be delivered during any four (4) hour period.
6. **Basal Rate** – Amount administered continuously.

### POLICY:

1. **Competency**  
The RN, RN Applicant or LPN must demonstrate competency in PCA therapy.
2. **Guidelines for PCA Therapy**  
This policy provides guidelines for PCA therapy with Abbott Life Care PCA 3 (See Appendix A for further reference). For PCA therapy with other pumps, refer to the instruction book for use with that piece of equipment. *Note: The RN, RN Applicant or LPN will assess if the patient is an appropriate candidate for PCA therapy based on but not limited to: Age, mental status, level of consciousness, psychological stability, or intellectual capacity. Patient and family members/significant others will be educated on PCA therapy and instructed that the patient and only the patient is to press the button for pain medication. In addition, the patient and family members/ significant others will be educated on the dangers of others pressing the button for the patient.*
3. **Physician's Orders**  
A written physician's order for PCA therapy shall include:
  - a. type of analgesic
  - b. rate (IV solution)
  - c. loading/bolus doses
  - d. PCA dosage with mg/minutes lock out interval
  - e. four hour dose limit
  - f. basal rate
  - g. medication concentration

**4. Verification for Initial Set Up, Change in Settings and Transfer**

The registered nurse who initiates PCA therapy shall verify the medication dose and setting with a second RN or LPN prior to initiation. In addition, a registered nurse shall verify the medication dose and setting with a second RN or LPN when there is a change in settings or with the transferring nurse when a patient is received from another unit. Both nurses shall initial and sign on the PCA Nursing Flowsheet. The RN or LPN may monitor the patient's vital signs and pain assessment.

**5. PCA Nursing Flowsheet ( SN1101)**

The PCA Nursing Flow Sheet (SN1101) shall be utilized for documentation of PCA therapy. Abnormal and untoward event information shall be documented in the 24 Hours Progress Notes.

**6. Medication Cartridges**

PCA medication Morphine 1mg/cc cartridges, 5 mg/cc cartridges and Demerol 300 mg/30 ml shall be kept in the Automated Dispensing System on all nursing units except Pediatrics. Only Morphine 1mg/cc cartridges shall be kept in the Automated Dispensing System on Pediatrics. The medication shall be signed out following guidelines for controlled substances. (*See Hospital Policy 8.13, Medication Control for additional information.*) Tampering with the PCA cartridge for the purpose of diverting narcotics is prohibited and shall result in disciplinary action up to and including termination.

**7. Wasting a Narcotic**

Any narcotic waste shall be witnessed in the Automated Dispensing System and documented in the space provided on the PCA Nursing Flow sheet (SN1101) utilizing the following procedure:

- a. The amount of drug wasted in ml (cc)
- b. The time of the waste
- c. The signature of nurse who wasted the drug.
- d. The signature of the nurse who **witnessed** the waste.

**8. Recording LOC, Vital Signs, and Pain Assessment**

Blood pressure (BP), pulse, respiratory rate, level of consciousness (LOC), and pain assessment shall be assessed and recorded on the PCA Record as follows:

**Initiation of Therapy:** Record Respiratory Rate, Level of Consciousness, Blood Pressure, Pulse, and **Pain Assessment (score, quality, site, and duration)** prior to initiating continuous infusion morphine therapy.

**Within One Hour of Initiation or Change in Settings:** Record Respiratory Rate, LOC, Blood Pressure, Pulse, and **Pain Assessment (score, quality, site, and duration)** within one hour of initiation of therapy or change in settings; then maintenance parameters shall be utilized.

**Maintenance (After therapy has been established):**

**Every 2 hours:** Record Respiratory Rate, Cumulative Total, and LOC

**Every 4 hours:** Record Blood Pressure, Pulse and  
**Pain Assessment (score, quality, site, and duration)**

**Transfer:** When a patient is transferred, on the receiving unit the transferring and receiving nurse will verify the settings, medication, and dosage and document. Also document the Respiratory Rate, LOC, Blood Pressure, Pulse, and **Pain Assessment (score, quality, site, and duration)**.

**Note:** The Physician shall be notified of the following so that orders may be obtained for continuing, slowing or stopping the infusion when one or more of the following exists:

- a. Diastolic Blood Pressure drops of more than 20% from baseline
- b. Respiratory rate of less than 10/minute
- c. Significantly altered mental status
- d. Pain Score of 5 or greater and/or pain score that is not decreasing.

9. **Documentation of PCA medication administered and clearing of the PCA Pump**

At 0600 the nurse shall obtain from the PCA pump, and document on the PCA Nursing Flow Sheet (SN1101):

- a. the medication amount mg/cc self-administered by the patient
- b. any bolus doses given by the nurse
- c. and total mg/cc infused

The PCA Pump shall then be cleared.

10. **PCA Key**

The PCA Key shall be secured in the Automated Dispensing System unless otherwise approved by the Unit Manager or Administrative Nursing Director. In the event of lost keys notify the Unit Manager or Administrative House Manager and initiate a variance.

11. **Changing PCA Cartridges and tubing**

The PCA cartridges and tubing shall be changed at least every 96 hours using aseptic technique.

12. **IV Site Assessment**

The IV site shall be assessed every eight hours with appropriate documentation recorded on the chart regarding site condition, patency, and IV administration.

13. **Patients Going to Surgery**

- a. At the time the Pre-Op Orders are written, the physician will write an order to discontinue the PCA Pump prior to the patient being sent to surgery. The nurse in charge of the patient will remove the PCA Pump. All narcotics will be wasted per policy. The PCA Pump will be held in the patient's room until the patient returns from surgery.

- b. If the patient has break through pain while in the Pre-Op holding area, the Operating Room staff will contact anesthesia and they will provide pain management.
- c. Prior to discharge from the PACU, the sending unit will be contacted to determine whether or not the patient has a PCA Pump available.

14. **Patients Leaving the Unit**

Patients with PCA pumps will not be allowed to leave an inpatient unit on their own without a physician's order to do so.

### Documenting and completing the PCA Nursing Flowsheet

RESPONSIBLE PARTY	SECTION	ACTION
RN, LPN, RN Applicant	Date	1. Record the date
	Every 2 hours	2. Record the Respiratory Rate, Cumulative Total, and LOC every 2 hours.
	Every 4 hours	3. Use the legend to document the Pain Score, Pain Quality, Pain Site, Pain Duration, Blood Pressure, and Pulse every 4 hours.
	Total mg/cc per 24 hours (Clear pump)	4. Document the total mg/cc for 24 hours in the 0600 column; clear the pump.
	Initials	5. Insert initials every 2 hours.
RN, RN Applicant	<b>Initiating, Monitoring, Transfer or Changing PCA Settings</b> Time – Initiated (I), Changed (C), Monitoring (M), and Transfer (T)	6. Document the time PCA initiated. Place the appropriate symbol next to date and time for designation of action. Document (I) for initiation of PCA therapy, (C) for change in settings, (M) for monitoring of PCA therapy, and (T) for Transfer. Monitoring shall start at the beginning of each shift and document.
	Medication Concentration	7. Write the medication mg/ml concentration. Document at 0800 and if changed.
	PCA Dose	8. Document the mg/cc that the patient can request on demand.
	Continuous Rate or Basal Rate	9. Write the mg/hr that the patient is receiving.
	Lockout Interval	10. Record the time for lockout interval.
	4 Hour Dose Limit	11. Write the dose limit for 4 hours.
	Loading /Booster Dose (mg)	12. Record the loading dose if ordered.
	Patient Family Teaching Done	13. Document yes or no in the space. If yes, document Patient/ Family Teaching on the IPEF (Interdisciplinary Patient Education Form SN 1102)
	Nurse Initials	14. Write the initials of nurse caring for and

<b>RESPONSIBLE PARTY</b>	<b>SECTION</b>	<b>ACTION</b>
RN Applicant	.	monitoring the patient.
	Verification of 2 <sup>nd</sup> Nurse Initials	15 Write the initials of nurse verifying the initiation of the pump, a change in settings, or patient transfer. Monitoring does not require 2nd nurse verification.
	Reassessment	16 Write the time, respiratory rate, LOC while awake, Pain Assessment (Score, Quality, Site, Duration) blood pressure and pulse. <b>Reassessment is done within one hour after initial setup or within one hour after change in settings.</b>
	Legend	17 Use the legend to record the following where applicable:
	Level of Consciousness	Select the appropriate number using a scale of 0-5: 0=Unarousable, 1= Arouse to deep pain, 2=Arouse with difficulty, 3 = Easily aroused, 4=Alert, and 5 = Agitated
	Pain Score	Select a number using a scale of 0-10: 0= Pain free, 5= Moderate Pain, and 10 =Worst Pain Imaginable
	Pain Duration	Select an abbreviation: C = constant, I= intermittent, O = Other (describe other)
	Pain Quality	Select an abbreviation: D= Dull, S= Sharp and O= Other (describe other)
	Discontinuation of PCA	18 Write the date and time PCA is discontinued. Record the amount wasted. The nurse wasting the medication will write his/her initials. The nurse witnessing the medication waste shall write his/her initials.
	Nurses Signature and Initials	19 All nurses utilizing the form shall sign and initial.

### Reference:

1. Hospital Policy, 5.18: Pain Management via Continuous IV Infusion
2. Hospital Policy, 8.13: Automated Control of Medications
3. Infection Control Guidelines IC 16.0: Methods to Prevent Health Care Associated Intravascular Device Related Infections (January 2007)
4. JCAHO Sentinel Event Alert, Issue 33, December 20, 2004.

Jamie Jett, MBA, RN  
Director, Patient Care Support/Medicine Services

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Jean DiGrazia, MBA, RN  
Acting Assistant Hospital Administrator and CNO  
Patient Care Services

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date