

MASSACHUSETTS GENERAL HOSPITAL  
Department of Nursing

**TITLE:**                   **PATIENT CONTROLLED ANALGESIA (PCA)**  
**KEYWORDS:** **Patient Controlled Analgesia, Analgesia, Post-operative Pain, Continuous Infusion, Opioids**

**LEVEL OF PERSONNEL:**   RNs

**DESIGNATED CLINICAL AREAS:** All

**PURPOSE:** To provide analgesia.

**APPLICABLE POLICY STATEMENTS:**

1. MD order necessary for Patient Controlled Analgesia

**2. ADULT:**

- a. Record baseline HR, BP, RR, pain and sedation score prior to PCA initiation.  
Assess patient for the following risk factors for respiratory depression:
  - Use of concurrent benzodiazapines, and or anxiolytics
  - History of sleep apnea
  - Morbid obesity
- b. Record BP, RR, pain and sedation score before any loading dose, and again **30** minutes post loading dose.
- c. During PCA therapy record HR, BP, RR, pain and sedation score 30 minutes post initiation times 2, then every 4 hours if stable.
- d. During PCA therapy, if there is a change in vital signs, level of consciousness or sedation score, record HR, RR, and BP, and sedation score every 1 hour or more often until stable.

**ADULT PCA SCORING GUIDES**

**PAIN SCALE**

0 = "No Pain"

10 = "Worst Pain Imaginable"

**SEDATION SCALE**

S= Sleep, easy to arouse.

1 = Wide Awake

2= Slightly drowsy, easily aroused

3= Frequently drowsy, arousable, drifts off to sleep during conversation.

4= Somnolent, minimal or no response to physical stimulation.

- e. **Discontinue PCA and call House Officer for HR < 50, SBP < 90, RR < 10 and increasing lethargy.**
  
- f. **Only the patient should push the button for the demand dose. If the patient is unable to do so or cannot understand the relationship between pushing the button and pain relief, PCA therapy should be reconsidered.**

3. PEDIATRICS:

- a. Record baseline HR, BP, RR, pain and appropriate sedation score prior to PCA initiation.
- b. Record HR, BP, RR, pain and appropriate sedation score before any loading dose, and again **30** minutes post loading dose.
- c. During PCA therapy record HR, BP, RR, pain and sedation score 30 minutes post initiation times 2, then every 4 hours if stable.
- d. Discontinue PCA and call House Officer if there is a change in mental status, sedation, or baseline vital signs greater than 10% (+/-).

**PEDIATRIC PCA SCORING GUIDES**

<b>PAIN SCALE:</b> N-PASS	Preterm Neonate- 3 months
FLACC	Infancy- 7 years old and developmentally delayed
FACES	3-7 years old
Numeric	≥ 7 years old

<b>SEDATION SCALE:</b> N-PASS	Pre-term Neonate- 3 months
COMFORT	Neonate- Adolescent

- 4. At the end of every shift the PCA pump must be “cleared” so that an accurate measurement of medication received by the patient can be documented.
- 5. At the end of every shift the RN must document total amount of medication patient has received via the PCA. This is “getting the shift total.” This shift total includes the PCA dose /demand dose (button push by patient), the continuous rate, loading doses (during initiation or anytime PCA infusing) and any bolus doses received. The specific amount of medication received must be documented on the PCA Medication Record beside the time and initials of the RN. (Figure 1) A shift is defined as when the RN turns over accountability to another RN. Shifts can be any length.
- 6. *Transcription* of PCA will be completed on the “Transcription/Maintenance Medication Record for PCA.” Form #. 84577 (Figure 1)

- One medication per sheet
- All orders must be verified (red checked)
- When the order is discontinued, draw a single diagonal line through entire front side of sheet

7. *Documentation* of medication administered. (Figure 1)

- Record date and time of assessment/changes in dose and when completing the end of shift documentation
- **Current dose is to be recorded in mg**
- Current pump settings should include the dose, lockout time and continuous dose. (e.g., 1/6/0)
- If making dose change indicate change by using arrows (e.g., ↑ 0.5 mg)
- Shift total will be recorded at the end of a shift-no matter the length of that shift (e.g., 4 hours, 8 hours, 12 hours). Shift total will be recorded in mL
- Total dose will also be documented in mg/shift.

CRITICAL ELEMENTS:

1. Patient and families should be educated in the appropriate use of PCA prior to initiation. Discuss with patient and family the dangers of anyone but the patient pushing the button for a demand dose.
2. Medication label on the syringe must contain the Patient's name, medication, concentration of the medication, and date. If using the orange label, RN signature needed.

**SETUP OF ABBOTT PAIN MANAGER: SEE PROCEDURE 15-12-1**

## LOADING DOSE ADMINISTRATION OF PCA DURING INFUSION.

### EQUIPMENT:

PCA infusion pump.

#### NURSING ACTION

1. Press [ RUN/STOP]. Press [ LOADING DOSE ] key pad.
2. Unlock key pad.
3. Follow prompt to set loading dose.
4. To infuse – press [ LOADING DOSE ] keypad.
5. When loading dose is complete – press [ RUN/STOP ] to begin delivery again. When prompted, press Yes to lock pump.

#### SPECIAL CONSIDERATIONS

1. If loading dose is set during programming and Not delivered at that time, it can be delivered at any time.  
  
If loading dose is not available (has not been Programmed) follow prompts.
2. press enter, and then up arrow key twice.  
  
4a. Pressing [ LOADING DOSE ] keypad begins infusion. Screen will display amount being infused.  
  
4b. The dose delivered is logged to the history and the PCA lock out time is set.
1. Restart of infusion is not automatic if the loading dose is delivered after the start of the program.

### TO GET SHIFT TOTAL:

1. Press RUN/STOP.
2. Unlock Key pad.
3. Press History.
4. Press Volume Info. (Volume info is total ml (cc) infused during shift. This is the SHIFT TOTAL.  
**NOTE: Total amount seen on PCA pump screen while pump is running is the amount that has been infused from current syringe.**
5. Press shift.
6. Press arrow up for more information.

### TO CLEAR SHIFT TOTAL.

1. If just finished getting shift total—press silence. This will clear screen.

- If starting from running pump, press RUN/ STOP and unlock key pad. Press History.
2. Press Reset.
  3. Press new shift total.
  4. Total will clear.
  5. Press Run/stop and yes to lock key pad.

### **TO CHANGE SYRINGE CONTAINER**

1. Press Run/Stop
2. Unlock syringe door with key.
3. Attach new syringe to tubing. Make sure all air is out of syringe and connection is tight.
4. Unlock keypad.
5. Press Reset.
6. Press “2”, New container. DO NOT CHANGE CONTAINER SIZE. Container size was set up with initial set up of PCA.
7. Press Run/Stop and yes to lock key pad.

### **EXPERT/RESOURCES:**

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**References:**

Pasero, C., McCaffrey, M. Monitoring Sedation. American Journal of Nursing. 2002, Feb:102 (2): 67-9.

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