UCSF Benioff Children's Hospital Oakland

NURSE-ASSISTED PCA MANAGEMENT PROTOCOL

PURPOSE: To outline nursing responsibilities for managing the patient on nurse-assisted patient controlled analgesia.

LEVEL: Independent (requires MD order for dependent functions)

SUPPORTIVE DATA:

A physician's order is required to implement nurse-assisted patient controlled-analgesia. The nurse is responsible to safely manage the patient-pump system (refer to Pediatric & Neonatal Pain and Anxiety Management Policy). PCAs are used for post-op, acute and chronic pain management when the patient is unable to press the button. The use of Nurse-Assisted PCAs should be considered in medically complex patients e.g., sickle cell disease, oncology and medically compromised patients experiencing acute or chronic pain and are unable to press the button. Patients, parents and/or legal guardians can be taught to assess pain and patient's physical status prior to the request for the nurse's re-assessment of patient's physical status prior to nurse delivering the pain medication.

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CRITICAL POINTS

- Ensure patients who require Nurse-Assisted PCAs on the Acute Pain Service be placed in PICU/NICU, or 3 Surgical Units only. Nurse-Assisted PCAs are not allowed outside these areas for patients on the Acute Pain Service. Patients on the Hematology/Oncology service and post op patients may receive Nurse-Assisted PCAs on 5 HO (East/South-Immunocompromised Unit) as long as the Hematology/Oncology Nurse follows them. When a patient with a PCA is transferred out of the PICU, ensure they are followed by the Acute Pain Service unless the patient is diagnosed with chronic pain.
- Registered nurses must demonstrate competency in use of the PCA pump.
- All PCA medications are prepared by Pharmacy.
- PCA therapy is ordered by the provider through the appropriate PCA order set.
- A continuous IV (maintenance) solution must be infused along with the PCA drug. The purposes of this are twofold:

- PCA doses are administered in a small volume of fluid and therefore need to be carried into the vein by a maintenance IV.
- The maintenance IV provides access in the event of an emergency.

➢ Solution and rate of the maintenance IV is ordered by the provider.

SET-UP:

1. Refer to PCA Procedure for pump set-up. PCA pump keys are stored on an opioid key ring (stored in the medication room or secured medication cart).

2. Obtain opioid cassette as ordered, after double check with 2nd nurse install into pump.

3. Use anti-siphon PCA tubing with primary tubing attached, then connect both tubing to patient.

4. Calculate sate dose of opioid based on patient's weight.

5. Perform and document 2 RN independent check for high risk medications to verify programming accuracy before starting the infusion (remember: check order against cassette label and pump settings, including concentration.

6. Have reversal agents available on the Nursing Unit.

7. Institute Cardiorespiratory and Pulse Oximetry Management Protocols.

ASSESSMENT:

Any change in the patient's condition, an escalation in the patient's level of pain, and/or a change in drug dose requires an increase in the frequency of assessments/interventions.

1. Assess and document the following upon initiation of infusion, every 2 hours for the first 12 hours, then every 4 hours for the duration of the infusion.
   - Pain severity using the appropriate pain assessment scale or tool
   - Sedation Level (using SBS or POSS tools)
   - Heart rate and respiratory rate
   - Oxygen saturation

   ➢ Restart the initial 12-hour monitoring requirements with any PCA medication changes or dose increases.

2. Assess physiologic symptoms that may indicate pain and administer dose of opioid via Nurse-Assisted PCA as ordered by MD after assessment:

3. Physiologic signs/symptoms may include increased HR, BP and RR, sweating and pallor.
   - Physiologic changes are usually seen only briefly after the onset or exacerbation of pain and often return quickly to normal.
   - Absence of physiologic signs/symptoms does not mean the patient has no pain.

4. Instruct parents of need for analgesia and encourage them to report signs and symptoms of pain or discomfort to nurse/MD. Assess patient's pain per patient or parent's request using #6 and/or #7.

5. Assess and document dose of opioid infused every 2 hours for Critical Care and every 4 hours for Acute Care on the PCA/Epidural Flowsheet.

6. Monitor for adverse effects; e.g., over-sedation, respiratory depression, constipation, seizure activity, pruritus, nausea and/or vomiting, urinary retention, hypotension. Document side effects and re-assess post interventions for treatment effects.

7. Administer adjunctive drugs as ordered: non-steroidal anti-inflammatory agents, antiemetics, antihistamines, benzodiazepines, naloxone.

8. Consult with MD regarding need for changes in analgesia orders, dose and/or administration interval and increase in or excessive side effect.

9. Consult with MD regarding the need for an order for IV rescue opioid for patient having an MRI. The PCA machine is disconnected from the patient during the MRI scan as it contains metal.

EDUCATION:

1. Instruct parents, family caregivers and visitors about the dangers and potential negative sequelae of Nurse-Assisted PCA by proxy outside of nurse-assisted analgesic management. Inform parents that PCAs will be discontinued if parents found to be pushing the button.

MAINTENANCE:

1. Do not saline-lock PCA at any time: patient must have IV fluid infusing at all times. EXCEPTION: For patients getting an MRI (PCA pump contains metal) obtain MD order to discontinue/interrupt PCA during scan and order for IV rescue opioid PRN during the scan to maintain adequate pain control.

2. Accompany patient whenever s/he leaves nursing unit: staff must be in attendance. Discontinue PCA prior to transfer to OR. PCA may be restarted in PACU or on the floor/PICU after arrival.

3. Clear pump totals with 2nd nurse at 0700, 1500 and 2300.

4. Monitor dose infused, amount remaining and document of PCA/Epidural Flowsheet.

5. Replace PCA cassette when empty. Refer to Controlled Substance policy. Second nurse must witness any cassette changes; any drug discarded and pumps programming.

6. Taper analgesia as ordered by MD and as tolerated by patient (refer to Pediatric & Neonatal Pain and Anxiety Management Policy).

REPORTABLE CONTITIONS:

1. Notify MD of behavior or physiological signs of pain unrelieved by pain management measures.

2. Notify MD of any side effects not relieved by ordered pharmacological measures.

DISCONTINUING PCA:

1. Obtain MD order to discontinue Nurse-Assisted PCA.

2. Assess patient for pain management requirement of alternative PCA therapy.

3. Remove PCA with 2nd nurse; determine amount of drug remaining, record and discard waste.

4. Remove PCA pump from bedside and return to CPD to remove patient's name from charge sheet.

COMPLICATIONS:

1. Discrepancy: pump readout(s) disagrees with documented events.
   a) Report discrepancy to charge nurse.
   b) Complete event report form.
   c) Replace pump: return pump to BioMed immediately if pump error suspected. Take pump out of service with a work order including pump number and description of problem.
   d) Reprogram new pump with 2nd nurse.

2. Tampering with pump attempted: attempted manipulation of pump settings PCA doses delivered by other than the nurse, all will result in Nurse-Assisted PCA being removed and alternate pain management measures being instituted.

3. If above occurs, notify charge nurse, ordering MD and nurse manager.

DOCUMENTATION:

1. Chart Nurse-Assisted PCA monitoring information on Epic PCA/Epidural/Block Flowsheet.
   - Number of doses
   - Dose
   - Volume infused

2. Document the effectiveness of pain management on Vital Signs Flowsheet.
   - Heart rate
   - Respiratory rate
   - O2 sat

- Sedation score

3. Document Handoff Communication:
   - Volume infused
   - Volume remaining
   - RN co-sign

PCA Settings - Hydromorphone (0.2 mg/mL)	
Basal Rate (Per Hour)	
PCA Dose	
1 Hour Limit (PCA Demand Doses + Basal)	
Bolus (Loading Dose)	
Lockout Interval (min)	
PCA Assess- Hydromorphone (0.2 mg/mL)	
Number of Doses Given	
Number of Attempts	
Total Dose (mg)	
Volume Infused (mL)	
Reservoir Volume (mL)	
Analgesia Admin. (Hyrdomorphone 0.2	RN controlled

Vitals/Pain
Heart Rate
Resp
SpO2
SBS Score:
Pain Assessment tool
Pain Level
Wong-Baker Faces Pain Scale
Pain Assessment
Pain Evaluation Type
Patient Pain Goal
Pain Type
Pain Location
Pain Orientation
Assume Pain is Present Reason
Pain Character
Pain Score- Med Admin
Pain Interventions- Non-pharmacological
APP-Assume pain present
Multiple Pain Sites
Effect of Pain on Daily Activities

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