



Nursing Service Guidelines General

Title: PATIENT CONTROLLED ANALGESIA (PCA)

Responsibility: Registered Nurse (RN)

Purpose of Guidelines: The patient will have adequate pain relief while maintaining satisfactory respiratory status.

Procedure:

1. All PCA orders, including bolus doses, are electronically ordered through the Electronic Medical Record (EMR). All orders and documentation must be in milligrams, except in medications that are dosed in micrograms, i.e. Fentanyl.
2. Use pain flow sheet for documentation (NU082), or the EMR. Original physician's PCA orders and all subsequent changes in the physician's PCA orders will be ordered electronically, and the nurse must document change rates and have a co-signature with any change from the original order.
3. If no IV fluid order exists, initiate normal saline at rate specified on iForm order for PCA.
4. Initiate continuous End tidal CO₂ (EtCO₂) for all patients on PCA pumps. Initiation during post-op requires PCA and continuous EtCO₂ to be placed in PACU before transferring to the nursing unit. Patients with history of sleep apnea, respiratory disease, renal disease, liver disease and pediatric patients have increased risk for respiratory distress. Dosage regimens are dependent on clearance, volume of distribution, and pharmacodynamic factors, which change with some chronic diseases and with age.
5. When PCA is initiated, a new syringe is added, setting changes are increased or upon receiving a transfer patient, a second nurse must verify the correct drug, narcotic concentration and all pump settings. The second nurse must also verify the original physician orders and confirm that the paper flowsheet/electronic entry matches the original physician order. The second nurse must then sign name along with first nurse on same signature line of PCA flowsheet or the order is verified, and a co-signature is completed electronically in Admin-RX.
6. All bolus doses will be administered through the PCA pump.
7. Time of initiation of each syringe/bag must be recorded in the electronic medical record as well as completing all documentation related to administration or wastage as per the narcotic policy.
8. Document assessment in the electronic medical record including pain level on pain scale, respiratory rate, CO₂ (EtCO₂), side effects, B/P and heart rate.
 - a. upon initiating the infusion, rate increase, or bolus dosing
 - b. 30 min. after initiation, rate increase, or bolus dose.
 - c. 1 hour after initiation, rate increase, or bolus dose.
 - d. every 2 hours for 4 hours, and every 4 hours on an 8-12-4 schedule thereafter.
9. Notify ordering physician if:

- a. EtCO₂ is greater than or less than 10 mmHg from the patient's baseline
 - b. sedation scale 2 or less (unarousable).
 - c. respiratory rate ≤ 10 per minute or
 - d. systolic BP of less than 100 mmHg. or
 - e. pulse less than 50 beats per minute or greater than 130 beats per minute.
 - f. inadequate level of analgesia use or pruritus.
10. If the patient becomes unarousable or has a respiratory rate of less than 8, a nurse must remain at the bedside, stimulate the patient and administer Naloxone (Narcan) 0.2mg, per protocol, outlined in orders.
 11. Clear the pump at the end of every 8-hour shift and prior to any patient transfer, document the amount infused in the "Total mg. Given" column....."Total milligrams given" means the number of milligrams (mg.) administered since the last recording of "total mg. given". Record in milliliters (ml.). Do not record in ccs. Always clear the pump when recording "total mg and or micrograms given."
 12. Pre-filled syringes are good for 24 hours. Date and time the syringe only if you anticipate (based on dosage) that the syringe will not completely infuse within the 24 hours. Nurse should record time, date, and initials when initiating as medications compounded by pharmacy are good for only 24 hours.
 13. Educate the patient on pain management and instruct patient on use of PCA. Review and evaluate patients understanding of the concept of pain management, the importance of effective pain management, the pain assessment process, pain management techniques, drug therapy ordered, and their ability to utilize the PCA infusion pump. ***No one is to push the button on the PCA pump except the patient.**

References: Lindley, P., Pestano, C. R., & Gargiulo, K. (2009). Comparison of postoperative pain management using two patient-controlled analgesia methods: nursing perspective. *Journal of Advanced Nursing*, 65(7), 1370-80.

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