THE STUDY VAULT

Clinical Chaos

PCA Pumps

SKILL SNAPSHOT

Purpose

- Allows a patient to self-administer preset opioid doses within programmed safety limits for individualized pain control.

When to use

- Ordered for an appropriate alert patient who understands and can physically activate the demand button.

Supplies needed

- PCA pump with drug library; pharmacy-prepared syringe/bag; dedicated tubing/lumen; key/lock; monitoring equipment; naloxone and emergency support.

PREP + PATIENT SETUP

- Verify patient selection, opioid history, allergies, pain/ sedation/respiratory status, renal/hepatic function, sleep-apnea risk, and concomitant sedatives.
- Verify drug, concentration, demand dose,

VAULT TIP

- PCA safety is patient selection plus monitoring. If the patient cannot self-dose safely, PCA is not the right delivery method.

STEP-BY-STEP

1. Hand hygiene; identify patient; explain that only the patient may press the demand button—never family or staff.
2. Compare pharmacy label, order, MAR, and pump drug-library entry. Complete independent verification of all settings.
3. Assess IV access and use a dedicated line/lumen when required; confirm patency and compatibility.
4. Prime PCA tubing with medication per policy before connection, accounting for tubing volume. Label tubing and secure all connections.
5. Disinfect connector and allow it to dry; connect aseptically. Lock medication compartment and secure pump.
6. Program drug/concentration, patient weight if required, demand dose, lockout interval, basal rate, loading dose, and dose limit exactly as ordered.
7. Trace line from medication to patient and verify settings at bedside before START.
8. Place demand button within patient's reach and distinguish it from nurse call button. Ask patient to teach back when to press.
9. Obtain baseline pain, sedation score, RR/quality, SpO2, BP, HR, and capnography if ordered.
10. Monitor at policy intervals and after initiation, loading dose, dose/rate change, handoff, or clinical change. Sedation often precedes respiratory depression.
11. Review attempts versus delivered doses, pain/function, side effects, and total opioid. Treat nausea, itching, retention, constipation, or sedation per orders.
12. For excessive sedation or respiratory depression, stop opioid, stimulate/support airway and breathing, call for help, and give naloxone per protocol.
13. At handoff, jointly verify pump settings, remaining volume, line, patient assessment, and cumulative dose.

SAFETY REMINDERS

- No PCA by proxy: only the patient presses the button.
- Basal infusions increase risk and require specific indication/monitoring.
- Use standardized concentration, smart pump, locked access, and independent checks.
- Sedation is an early warning of respiratory depression.

COMMON MISTAKES

- Family pressing button.
- Wrong concentration selected.
- Button out of reach.
- Monitoring SpO2 without sedation/respiratory quality.

DOCUMENTATION

- Pain, function, sedation, RR, SpO2/ETCO2.
- Drug/concentration and all settings.
- Attempts, doses delivered, total dose.
- Site/line and independent checks.
- Side effects, interventions, teaching, handoff.