

## CASE REPORT

### PUMP TAMPERING POSSIBLE BY PATIENTS IN OPIOID ADMINISTRATION

According to the Institute for Safe Medication Practices (ISMP), a case recently occurred in which a hospitalized patient with chronic pain was able to increase the rate of his hydromorphone infusion. This particular patient was receiving hydromorphone via a CADD-Prizm VIP pump (Smiths Medical, London, United Kingdom) at home. The admitting physician prescribed the same dose of hydromorphone as the patient had been receiving at home and allowed the patient to use his own pump while in the hospital.

The hospital-based pain service team followed the care of the patient at home but was not notified of his admission until the following morning, when a resident called to question why the patient's hydromorphone infusion was running at a different rate than prescribed. The pain service physician was unable to see the patient until later in the day, and the resident did not investigate further. Once the visit was made, when the physician looked at the pump's patient history log, it was discovered that the patient had somehow manipulated the infusion rate and given himself frequent unprescribed boluses. The patient's home CADD pump was replaced with a hospital CADD pump (different model) and secured with a tackle box and padlock to ensure no further tampering.

How did the patient gain the knowledge to manipulate the pump and obtain and use the lock level code to alter the pump settings, and then the clinician code to administer bolus doses? At the request of the Food and Drug Administration and others to provide readily accessible information, the pump's user manual is available on the manufacturer's Web site. This provides patients with knowledge about how to program the pump. The codes, however, appear only in the hard copy of the user manual. It is likely that the patient obtained the lock level and clinician codes from the pump he used at home by observing practitioners during pump programming. A much less remote possibility is that the codes, which are the same for this pump throughout the United States when shipped from the manufacturer, have been communicated via the Internet or email.

The ISMP has the following recommendations to prevent such a situation from occurring in the future:

- **Shielding and scrolling:** When programming a pump, always block patient (and visitor) views and use the scroll up or down keys, if available.
- **Checks and balances:** Require home-care and hospital nurses to track cumulative doses over

time (four-hour increments for inpatients) while referencing the pump's patient history log for comparison to the prescribed dose.

- **Investigate:** Consider the possibility of patient tampering (or an error) if the amount administered does not match the prescribed dose, or if the patient's sedation level, respiratory status, or behavior appears different than expected.
- **Staff education:** When educating staff and other caregivers to use pumps, stress ways to minimize the risk of patients and visitors learning the programming codes.
- **Check security features:** All pumps used for opioid infusions (and new pumps considered for purchase) should be checked to ensure that the locking mechanism for the compartment that holds the medication is functional and reliable.
- **Use hospital pumps:** To enhance security, use hospital-approved pumps only to administer opioids to hospitalized patients. Do not allow patients to use their pumps from home.
- **Monitor opioid use:** Pharmacies that supply opioids to home-care patients and hospital pharmacists who dispense opioids should monitor the amounts dispensed to ensure that they match the prescribed doses. Any discrepancies should be investigated immediately.
- **Screen patients:** Carefully screen patients with chronic pain to ensure that they are appropriate candidates for opioid infusions. Inform patients that opioid use will be monitored.
- **Change pump codes:** Some pumps offer biomedical staff the capability of changing the lock level and clinician codes. Consider changing the codes temporarily for patients at risk for tampering.
- **Use a pain service:** If you offer a pain service, notify the team immediately on admission of a patient with chronic pain, especially if the patient has been receiving opioids in the home setting.

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