Worth Repeating: PCA by Proxy Event Suggests Reassessment of Practices That May Have Fallen by the Wayside

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PROBLEM
Patient-controlled analgesia (PCA) allows patients to manage their own pain by self-administering more frequent but smaller doses of an opioid. This mode of pain control requires several safety strategies, including careful patient selection and patient, family, and staff education to avoid PCA by proxy—a term used to describe conditions under which someone other than the patient administers one or more doses of an opioid to the patient using the PCA device. A key safety feature of PCA is that the device is intended for patient use; a sedated patient will not press the PCA button to deliver more opioid.

ISMP first began publishing events associated with PCA by proxy in early 1996 to warn health care providers that well-intentioned family members and health care workers had been administering doses of analgesia to sleeping, sedated, or incapacitated patients, hoping to keep them comfortable but resulting in oversedation, respiratory depression, and even death. It’s been more than a decade since we last published an article in P&T about a fatal event in which it was certain that PCA by proxy played a key role. However, a recent event reported to ISMP serves as a reminder that we must ensure that health care providers remain ever vigilant to the risks of PCA by proxy. No one should allow critical prevention and safety steps to fall by the wayside over time—in particular: patient, family, and staff education; proper selection of patients for PCA use; visual reminders to avoid activation of doses by anyone other than the patient; and appropriate patient monitoring.

RECENT EVENT
PCA had been prescribed and initiated for an elderly postoperative patient who had just undergone an above-the-knee amputation. When the patient returned to the inpatient care unit after surgery, she became confused and agitated and began hallucinating. She was started on haloperidol to treat her delirium and agitation, and hospital-employed, unlicensed “safety companions” were assigned to stay with her around the clock. One of the safety companions at the patient’s bedside activated PCA doses for the patient by pressing the button seven times during his four-hour shift; this was discovered during the hand-off between this safety companion and the safety companion starting the next shift. The safety companion who administered the PCA doses understood that the patient could receive a dose every six minutes, but he felt that the patient was unable to press the button to activate a dose for herself and instead delivered a dose about every 30 minutes for the patient. He did not know that only the patient should deliver a PCA dose. Fortunately, the patient experienced little respiratory depression and was not permanently harmed.

During event analysis, the hospital determined there were several basic causative factors:

- There was a lack of physician leadership to clearly define and appropriately enforce patient selection criteria for PCA, which would have excluded a confused and hallucinating patient, as well as other patients who were not suitable and safe candidates for PCA.
- PCA policies did not clearly specify who can and cannot activate a dose.
- A warning no longer appeared on the PCA cord to caution that only patients can press the button.
- There was limited staff awareness about the dangers and prohibition of PCA by proxy.

The analysis team also found that the PCA policies did not clearly define and require specific patient monitoring that could quickly identify patients with respiratory depression.

This recent event is almost identical to an event we described in P&T in 2005 in which nurses delivered PCA doses to an elderly postoperative patient who was confused and agitated. But in that event, the PCA by proxy led to seizures, cardio-pulmonary arrest, hypoxic encephalopathy, and death of the patient.

SAFE PRACTICE RECOMMENDATIONS
ISMP urges all health care facilities that provide PCA to reassess their current safeguards around this mode of pain management to ensure adequate prohibition of PCA by proxy and patient monitoring to quickly detect and correct signs of opioid toxicity. Perhaps over the years, the initial steps taken to prevent tragedies associated with PCA by proxy have become less rigorously applied.

PATIENT SELECTION CRITERIA
Assess current policies and practices regarding the proper selection of patients for PCA use. Stringent patient selection criteria for PCA may be included in protocols and order sets to support candidates who have the mental alertness and cognitive, physical, and psychological ability to manage their own pain, but the criteria may no longer be followed or enforced. The benefits of PCA, along with a lack of current reports of harm from PCA by proxy, may have led providers over the years to extend its use to less-than-ideal candidates who may include patients who require practitioner-initiated PCA doses, including infants, young children, or confused or incapacitated patients. Other inappropriate candidates include patients who are being treated with medications that potentiate the effect of opioids or contribute to respiratory depression. Since an important safety feature with PCA is that the patient delivers each dose, proper
patient selection is critical. Also, the Joint Commission requires adherence to established patient selection criteria for PCA therapy, and the Centers for Medicare and Medicaid Services (CMS) Conditions of Participation require a documented assessment of the capacity of the patient to successfully administer any self-administered medications.

PATIENT MONITORING
Review current policies and practices related to patient monitoring during PCA use to determine their effectiveness in identifying and acting upon respiratory insufficiency to avoid patient harm. The Anesthesia Patient Safety Foundation (APSF) suggests continuous monitoring using pulse oximetry as well as capnography to detect unrecognized hypoventilation and carbon dioxide retention.\(^2\) APSF recommends the use of pulse oximetry to detect hypoventilation when supplemental oxygen is not being used. For patients receiving supplemental oxygen, monitoring ventilations with capnography is necessary to provide an additional measure of safety. Oversedation has occurred in patients with certain comorbid conditions, such as pre-existing respiratory disease, obesity, and sleep apnea, or when using concurrent drugs that potentiate opioids. As a result, an effective screening process is necessary to identify these risk factors; if PCA is still used, employ extra safeguards, including capnography. Also be sure that any alarms in use (e.g., pulse oximetry, capnography, apnea alarms) are recognized and responded to appropriately and in a timely manner—an unheard alarm or lack of response due to alarm fatigue can be deadly.

EDUCATE PATIENTS AND STAFF
Despite widespread awareness in the past about PCA by proxy, don’t assume this is an old problem that has been resolved. Ensure that all patients, family members, and new staff who work in clinical units are educated about this potential knowledge gap. Patient education should not take place in the post-anesthesia care unit but rather before surgery while the patient is alert. If family members or clinical staff feel the patient is not receiving adequate pain relief with PCA, the patient’s physician should be notified to determine if a different form of analgesia is needed for the patient.

ASSESS THE NEED FOR WARNING SIGNAGE
Assess whether warning signs are necessary on PCA cords to alert family members and remind staff that PCA doses should be administered only by patients. If used, be sure the warning is clear and understandable to patients, family members, and staff (e.g., **WARNING: BUTTON TO BE PRESSED ONLY BY THE PATIENT**).

REFERENCES