Original Article

Quality Improvement Initiative to Improve Postoperative Pain with a Clinical Pathway and Nursing Education Program

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Abstract:

Background and Aims: We created a multicomponent intervention to improve pain management in the immediate postoperative period with the goal of improving the quality of patient recovery. Design: A multicomponent intervention to improve pain management in the immediate postoperative period with the goal of improving the quality of patient recovery. Settings: Pain management education of postanesthesia recovery room nurses through a practical intervention has the potential to improve patient pain experience, especially in those with a history of opioid tolerance. Participants/Subjects: Postanesthesia recovery nurses/postanesthesia patients. Methods: The intervention included two components: a clinical pain pathway on multimodal analgesia for both opioid-naïve and opioid-tolerant patients undergoing surgery and an educational program on pain management for frontline clinical nurses in the postanesthesia care unit (PACU). We measured the intervention's impact on time to pain relief, PACU length of stay, and patient satisfaction with pain management, as measured by self-report. Results: Patient PACU surveys indicated a decrease in the percent of patients with opioid tolerance who required more than 60 minutes to achieve adequate pain relief (from 32.7% preintervention to 21.3% postintervention). Additionally, after the intervention, the average time from a patient's PACU arrival to his or her discharge criteria being met decreased by 53 minutes and PACU stay prolongation as a result of uncontrolled pain for opioid-tolerant patients decreased from 45.2% to 25.7%. The sample size was underpowered to perform statistical analysis of this

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improvement. Conclusions: After the combined intervention of a clinical pain pathway and interactive teaching workshop, we noted shortened PACU length of stay, reduced time to reach pain control, and improved overall patient satisfaction. Although we could not determine statistical significance, our findings suggest improved management of acute postoperative pain, especially for patients who are opioid tolerant. Because of the paucity of data, we were not able to conduct the analysis needed to evaluate quality improvement projects, as per SQUIRE 2.0. could be adopted by any institution.

Pain management is increasingly recognized as an important aspect of high-quality care and an integral component of patient satisfaction (Baker, van der Meulen, Lewsey, & Gregg, 2007; Fung, Cohen, Stewart, & Davies, 2005). Based on the Agency for Health Care Policy and Research guidelines for acute pain management, appropriate pain management for postoperative patients contributes to earlier mobilization, shortened hospital stay, and reduced costs (The Agency for Health Care Policy and Research, 1992). Additionally, undertreatment of postoperative pain and the consequent decline in patient satisfaction can have negative effects on the economics of a health system (Koo, 2007). Pain management is a central focus of Enhanced Recovery After Anesthesia Pathways (Tan, Law, & Gan, 2015).

In view of the undertreatment of postoperative pain, the American Society of Anesthesiologists established the Task Force on Acute Pain Management and published guidelines promoting standardization of procedures. The pain task force also recommended the use of patient-controlled analgesia and multimodal analgesia (American Society of Anesthesiologists Task Force on Acute Pain Management, 2012). Despite these efforts, results from clinical studies suggest that postoperative pain continues to be undertreated (Apfelbaum, Chen, Mehta, & Gan, 2003; Benhamou et al., 2008).

Clinical barriers identified in this aspect of postoperative care need to be addressed because patients' reports of satisfaction are increasingly used in public reporting, in pay-for-performance programs, and by the news media. Also, multiple studies have reported positive relationships between patients' experiences and the quality of clinical care in U.S. hospitals (Elliott et al., 2010; Hanna et al., 2012; Jha, Orav, Zheng, & Epstein, 2008).

Previous studies have found that implementation of quality improvement strategies in hospitals has a beneficial effect on patient outcomes (Castle, Brown, Hepner, & Hays, 2005; Sunol et al., 2009). Institutional pain management programs that approach pain from a multidimensional perspective need to be developed and their impact on outcomes evaluated. The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey is a standardized instrument and data collection methodology used to measure and publicly report patients' experiences of hospital care (Elliott et al., 2010). The HCAHPS survey is mandated by the Centers for Medicare and Medicaid, which also oversees administration of the survey.

The 2008 HCAHPS survey, which covers seven domains of care, contains 27 questions related to satisfaction with care and respondent demographic information. One of the seven domains addresses pain management with the following two questions: "During this hospital stay, how often was your pain well-controlled?" and "During this hospital stay, how often did the hospital staff do everything they could to help you with your pain?" (Elliott et al., 2010). Studies have found a positive correlation between HCAHPS survey responses and the quality of clinical care in U.S. hospitals (Elliott et al., 2010; Hanna et al., 2012; Jha et al., 2008).

Our hospital consistently ranks high in most subspecialties of medicine and surgery, but the HCAHPS survey data illustrate that it needs much improvement in the area of pain management. Previous studies have reported the importance of pain experts, such as those on an acute pain service, and that the lack of staff with expertise in pain management is a predictor of poor compliance with pain guidelines (Jiang et al., 2001; Mackintosh & Bowles, 2000).

Although significant emphasis has been placed on good pain control and patient satisfaction, there is also growing recognition of the adverse effects of opioids (Center for Behavioral Health Statistics and Quality, 2015; Centers for Disease Control and Prevention, 2017; Ostling et al., 2018). The use of opioids for the treatment of chronic noncancerous chronic pain is highly controversial (Gupta & Atcheson, 2013). With increased understanding of how prescribers are contributing to the opioid epidemic, providers are turning to opioid-sparing multimodal pain control (Buvanendran & Kroin, 2009; Elvir-Lazo & White, 2010; Gauger, Gauger, Desai, & Lee, 2018). Opioids still have a place in postoperative pain control, but the opioid-sparing properties of a multimodal approach are considered preferable (Barth, Guille, McCauley, & Brady, 2017). There are many missed opportunities to use multimodal analgesia at our institution.