

The Effect of an Educational Program on Opioid Prescription Patterns in Hand Surgery: A Quality Improvement Program

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Purpose To assess the variability of opioid prescription patterns among hand surgeons in a single practice and to attempt to standardize postoperative prescription sizes based on the patient's surgical procedure.

Methods We performed a preliminary chart review to assess the range of prescription sizes for 4 common hand surgery procedures. A group of hand surgeons agreed to write postoperative opioid prescriptions based on an evaluation of historical prescription patterns. An educational assist device (the pink card) was created to serve as a memory prompt and was given to physicians, midlevel practitioners, and trainees. Subsequent chart reviews of number of pills prescribed were done 3 and 15 months later.

Results After implementation of the pink card, the average postoperative prescription size decreased for all 4 case types by 15% to 48%, reaching statistical significance for 2 of the procedures. Variability in prescription sizes decreased in all cases. There was a trend toward a decreasing number of prescription refills over the course of the study. There was no evidence that patients were obtaining refills from other sources within our multigroup practice.

Conclusions Although generalized opioid prescription guidelines exist, they lack specificity. Our multimodal approach using a simple educational-assist device and changes to postoperative order sets significantly affected surgeon behavior without evidence of inadequate treatment of pain. (*J Hand Surg Am.* 2015;40(2):341–346. Copyright © 2015 by the American Society for Surgery of the Hand. All rights reserved.)

Type of study/level of evidence Therapeutic III.

Key words Attitude of health personnel, education, opioids, physician's practice patterns, practice guideline.

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PATIENTS IN THE UNITED STATES (US) are often treated aggressively with opioid analgesics for postoperative pain. This is related at least in part to the heavily publicized concept of pain as the fifth vital sign.^{1,2} The Joint Commission, an independent health care accreditation and certification organization in the US, has promoted optimal pain management. Recently, though, it has recognized that the current approach to pain management, which consists largely of opioids, is problematic, and has advocated multimodal pain management.³

Excessive postsurgical prescription of opioids is commonly reported and contributes to their availability for diversion, abuse, and accidental harm.^{4–7} People in the US use more prescribed opioids by gram than people in any other nation in the world, and we use more than 80% of all of the oxycodone produced in the world.⁸ In addition to increasing dose sizes for individuals, between 1999 and 2002 the percentage of people polled in Utah who had recently used opioids increased from 2% to 21%.⁸ The Centers for Disease Control and Prevention estimates that nearly 15,000 people die each year in the US from prescription pain killers including hydrocodone and oxycodone.⁹ Furthermore, the trend is escalating. One study reported that between 1999 and 2008 in Ohio, deaths related to unintentional drug poisoning almost quintupled, overtaking deaths from both traffic accidents and suicide.¹⁰ Altered prescription patterns, direct-to-consumer marketing, overmedication, self-medication, improper drug disposal, lack of convenient disposal sites, and drug diversion have all contributed to overuse.¹⁰

Opioids are a reasonable component of a multimodal pain management plan but surgeons have not defined what constitutes an appropriate quantity of postoperative opioids.^{4–6} Many opioids are unused in the postoperative period by the patients for whom they were prescribed.^{4–6} Prescription practices are based on physicians' experiences and on peers' practices, and little evidence exists to help practitioners know what is reasonable and sufficient. There are anecdotal reports of advice to "give patients enough to keep them from calling back for refills" and of fears of litigation, retribution, or reports to an ethics committee if postoperative pain is perceived as being inadequately managed.¹

A review of opioid prescription patterns after carpal tunnel surgery demonstrated the extent of the variability (Neumann RG et al, presented at the American Association of Hand Surgeons' annual meeting, 2013). Unnecessary variation in care is associated with increased complications and cost, so it is reasonable to define more clearly what constitutes a sufficient initial prescription size and to attempt to correlate prescription size with procedure type.

There is a growing call for specific guidelines and recommendations for better management of opioid analgesics.¹¹ Protocols and guidelines are most useful when they are specific and evidence-based. Ossendorp and colleagues¹¹ surveyed a cohort of Dutch hospitals and found that all postoperative pain protocols reviewed were generalized and lacked consensus or evidence. The protocols contained helpful information but were bulky, difficult to read, and therefore not useful in practice. In

the US, the Federation of State Medical Boards published "A Model Policy for the Use of Controlled Substances for the Treatment of Pain" in 2004, but it is also general and does not offer guidelines for specific surgical procedures or procedure classes.¹² Implementing a structured, multimodal, postoperative pain management protocol has improved outcomes including decreased length of stay, rates of adverse outcomes, length of time to extubation, and variability in narcotics administered in children.¹³

There is evidence that multimodal pain management guidelines can be effective for improving patient outcomes. Our work looks specifically at the efficacy of using a simple educational tool incorporating multimodal pain strategies to change how physicians prescribe postoperative opioids.

MATERIALS AND METHODS

We performed this study in an attempt to reduce the number of unused or unneeded and potentially harmful opioids ordered for patients after hand surgery. To arrive at the initial recommendations for opioid prescription sizes, a 3-month chart review was performed to determine the distribution of postsurgical opioid prescription sizes for 4 common hand and wrist operations. The preliminary review was done to define the current state of practice with the ultimate aim of standardizing postoperative opioid prescription size. Comparative efficacy of the specific opioid medications was not a focus of the study. Billing and coding data were analyzed for a single group of board-certified hand surgeons performing 4 common hand surgery procedures on patients older than age 18 years at a Midwestern urban hospital.

The initial postoperative prescription size (count of tablets) was recorded for each of the surgeons for 4 surgical procedures over 3 months in 2011: release of the first dorsal compartment, primary excision of wrist ganglion, open reduction internal fixation of a metacarpal fracture, and trigger finger release. For liquid prescriptions, the count of tablets was estimated as the number of adult-size doses per bottle. Because the primary purpose of the initial chart review was to assess individual surgeons' prescription patterns for specific procedures, patients were excluded when their operations involved more than one procedure or if they had been prescribed opioid analgesics preoperatively.

Initial prescription size recommendations for each procedure group were based on the observed distribution of the sample data and the expert judgment of the board-certified hand surgeons involved in the study. If a single prescription size appeared frequently, the mode

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