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# ADVANCES IN SURGERY

# Are Opioids Overprescribed Following Elective Surgery?

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#### Keywords

• Opioid • Prescribing • Narcotic • Standardization • Surgery • Postoperative pain

#### Key points

- Recent legislation and proposed guidelines have suggested maximum amounts of opioid medications to prescribe for postoperative and/or acute pain.
- The evidence is clear: overprescribing of opioids following elective surgery exists. Unused opioids are not properly disposed and may be diverted to friends, family members, or the community.
- Despite evidence of overprescribing following elective surgery, recent initiatives to standardize and reduce opioid prescriptions are promising and may aid surgeons in reducing their role in the ongoing opioid epidemic in the United States.

### INTRODUCTION

The opioid epidemic

A single-paragraph letter published in the *New England Journal of Medicine* in 1980 concluded that for hospitalized patients treated with narcotics, "the development of addiction is rare in medical patients with no history of addiction" [1]. Although this letter contained insufficient evidence to support its claim, hundreds of future research studies over the following decades cited it as evidence that addiction was rare in patients prescribed opioids [2], and opioid prescribing dramatically increased through 2012 [3]. These and other factors underlie the current opioid epidemic occurring in the United States.

Opioid misuse currently affects more than 2 million Americans [4] and is costly, with roughly one-quarter of the estimated \$78.5 billion dollars spent annually on opioid overdose, abuse, or dependence attributed to increased

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https://doi.org/10.1016/j.yasu.2018.03.003 0065-3411/18/© 2018 Elsevier Inc. All rights reserved. health care or substance treatment costs [5]. In addition to its financial costs, opioid overuse and misuse lead to human costs: opioids were implicated in as many as 16,000 deaths in the United States in 2013 [5].

In response to the opioid epidemic, several individual states as well as the Centers for Disease Control and Prevention have passed legislation or drafted or established guidelines outlining suggested or mandated maximum limits for opioid prescriptions [6–10]. Most of these guidelines suggest a 7-day prescription as the maximum following acute pain or major surgery, whereas others use an amount defined using oral morphine equivalents (OME). The use of oral morphine equivalent units allows for a single number describing the amount of opioids prescribed regardless of the number or type of opioids prescribed. A description of common prescription drugs converted to OME using conversion factors published by the Centers for Medicare and Medicaid Services [11] is available in Table 1.

Given the growing number of initiatives aimed at limiting opioid prescribing, and in response to the opioid epidemic itself, it is essential to review the current and future state of opioid prescribing for surgical pain. More than one-third of all prescriptions written by surgeons are for opioids, and these surgeon-prescribed opioids comprise 10% of all opioids prescribed [12]. Therefore, opioid prescribing must be evaluated with the goals of addressing surgical pain while minimizing the risk of opioid dependence for surgical patients and the risk of diversion of opioids for use by others than to whom they were prescribed.

#### Risk of opioid dependence

One of the central risks of opioid prescribing for surgical patients is that of an opioid-naive patient becoming a longer-term user of opioids, or "opioid dependent." Studies have shown that although most patients present to surgery as opioid naive, estimates of opioid dependence following the perioperative period range widely, from less than 1% of opioid-naive spine surgery TRICARE beneficiaries [13] to 2% [14] of all surgical patients, 6% [15] of general surgical patients, 10% of cancer surgery patients [16], and 13% of hand surgery patients [17]. As noted above, opioid dependence results in significant medical and societal costs that underscore the need to reduce this risk for surgical patients.

#### Risk of opioid diversion

In addition to the risk of opioid dependence, which impacts the patients themselves, opioids prescribed for postsurgical pain may also result in potential

Table 1   Oral morphine mg equivalent conversion factors		
Drug	Conversion factor	Prescriptions approximating 200 OME
Tramadol Hydrocodone Oxycodone Hydromorphone	0.1 1 1.5 4	40 tabs of 50 mg tramadol 40 tabs of 5 mg hydrocodone 26.7 tabs of 5 mg oxycodone 25 tabs of 2 mg hydromorphone

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