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Commentary: Impact of Opioid Prescribing Guidelines on Postoperative Opioid Prescriptions Following Elective Spine Surgery: Results From an Institutional Quality Improvement Initiative

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This manuscript describes the effect of procedure-specific opioid prescription protocol after elective cervical and lumbar spine surgery.¹ Per the standardized protocol, patients in the study were discharged with a maximum oral morphine milliequivalent of 300 or 400 depending on the procedure. The authors observed a high level of compliance with the protocol and found that about half of pre-protocol patients would have been compliant. Multivariate analysis demonstrated that this policy reduced postoperative opioid prescription without increasing the need for refill. We congratulate the authors for their quality improvement initiative toward more appropriate opioid prescribing practice, and this is a good first step toward reducing excess opioids circulating in the community. As the authors point out in the manuscript, postoperative pain management suffers from arbitrary opioid prescribing patterns at “surgeon’s discretion,” which is frequently not supported by any objective evidence. It is also difficult for surgeons to objectively assess adequate opioid dosage given the individual variation in pain tolerance and deny the prescription request from their suffering patients. Therefore, it would be extremely useful to institute a standardized guideline for postoperative opioid prescription practice.

However, enforcing a “standardized” opioid prescription poses unique challenges in spine surgery patients, as they are particularly susceptible to preoperative chronic opioid use that builds tolerance.²⁻⁴ Perioperative management of opioid-dependent patients usually begins with continuation of their usual dose of opioid and an additional analgesic requirement is determined by converting parenteral opioid intake into oral equivalent dosage.⁵ The application of a uniform upper limit to all postoperative spine patients may prohibit effective pain control in patients with a history of opioid dependency. There should be an additional consideration or

possibly a separate protocol that differentiates opioid-naïve patients from chronic opioid users.

Another challenge to creating procedure-specific guidelines is appropriate grouping of surgeries. The authors categorized “simple cervical decompression” to tier 3 and “cervical fusion procedure” is grouped into tier 4. It seems appropriate that patients undergoing more invasive surgeries would be permitted higher postoperative opioid intake, and such tier escalation intuitively makes sense if one is comparing posterior cervical laminectomy and fusion vs isolated decompression. However, the classification also suggests that patients who undergo posterior cervical laminectomies will require less opioid when compared to anterior cervical discectomy and fusion (ACDF) patients. It is well known that ACDF is considerably less painful than posterior cervical spine surgery because of less soft tissue disruption, but this obvious anatomic correlation is not reflected in the authors’ grouping. Also, the authors admit that their analysis did not take minimally invasive technique into consideration as the surgeries are categorized based on current procedural terminology code alone. To illustrate, percutaneous lumbar fusion procedures require only a few stab incisions, and patients’ postoperative narcotic requirement is generally minimal if any. Yet, these surgeries will be classified as tier 4, and patients will be permitted to an inappropriately high amount of postoperative opioid medication. Minimally invasive surgery has increasingly become the mainstay of all spine procedures that use tubular retractors or endoscopic techniques, and consideration of these specialized techniques needs to be accounted for in spine surgery protocols.

Also, the manuscript is focused on the conclusion that limiting maximal postoperative opioid prescription will lead to decreased opioid dosage. It appears that the outcome is a direct consequence of the protocol, although

it is difficult to draw more general conclusions because no clinical outcome measures are considered in this study. Narcotic restriction is justified with proper outcome analysis and its benefit needs to be weighed against potential compromise in good pain control. To illustrate, the state of Michigan passed a multibill package in 2017 to restrict narcotic use, and acute pain opioid prescriptions are now limited to a 7-d supply. Park et al⁶ utilized a statewide registry to investigate how the new legislation influenced patients. Despite the 10% reduction in daily opioid usage, the study noted comparable improvements in patient's functional status, pain, and satisfaction. However, the study also noted a small increase in the readmission rate due to pain (1.2% vs 0.9%), but it was difficult to delineate how pain and opioid usage impacted readmissions. We encourage the authors to perform a similar follow-up analysis in the future to demonstrate the clinical utility of their protocol.

The opioid epidemic is a significant public health crisis in the United States, according to the Centers for Disease Control; opioids led to over 42 000 deaths in 2016, with 40% of these involving a prescription opioid.⁷ Spine surgeons must seek to develop an effective strategy in reducing excess opioid prescribing after years of misuse, and the authors should again be applauded for instituting a protocol that should be viewed as a first step toward more responsible opioid stewardship.

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