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Postoperative surgical trainee opioid prescribing practices (POST OPP): an institutional study

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ABSTRACT

Background: Increasing mortality from opioid overdoses has prompted increased focus on prescribing practices of physicians. Unfortunately, resident physicians rarely receive formal education in effective opioid prescribing practices or postoperative pain management. Data to inform surgical training programs regarding the utility and feasibility of formal training are lacking.

Methods: Following Institutional Review Board approval, a single institution's resident physicians who had completed at least one surgical rotation were surveyed to assess knowledge of pain management and evaluate opioid prescribing practices.

Results: Fifty-three respondents (68% males and 32% females) completed the survey. Most respondents denied receiving formal instruction in opioid pain medication prescribing practices during either medical school (62.3%) or residency (56.6%); however, nearly all respondents stated they were aware of the side effects of opioid pain medications, and a majority felt confident in their knowledge of opioid pharmacokinetics and pharmacodynamics. Of the respondents, 47% either "agreed" or "strongly agreed" that they prescribed more opioid medications than necessary to patients being discharged following a surgical procedure. Individual case scenario responses demonstrated variability in the number of morphine milligram equivalents prescribed across scenarios ($P < 0.001$). Male and nonsurgical specialty respondents reported prescribing significantly fewer overall morphine milligram equivalents in these scenarios.

Conclusions: This pilot study shows wide variability in opioid prescribing practices and attitudes toward pain management among surgical trainees, illustrating the potential utility of formal education in pain management and effective prescribing of these medications. A broader assessment of surgical trainees' knowledge and perception of opioid prescribing practices is warranted to facilitate the development of such a program.

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Introduction

According to the Center for Behavioral Health Statistics and Quality, two million Americans developed a new substance use disorder involving prescription pain relievers in 2015, with an additional 12 million Americans reportedly misusing these medications in the same year.[1] Opioid addiction has driven drug overdose to become the leading cause of accidental death in the United States, with over 20,000 prescription pain reliever–related deaths and nearly 13,000 deaths related to heroin in 2015—a four-fold increase in both since 2001.[2] The economic impact of opioid misuse is significant, with an estimated $55 billion annually in health and social costs related to prescription opioid misuse and an additional $20 billion in hospital care for opioid overdoses yearly.[3,4]

Data from the National Survey on Drug Use and Health demonstrated that among respondents who were admitted to hospitals/health care centers for more than 200 d of misuse in the past year, opioid pain relievers were most frequently obtained by physician prescription.[5] The treatment of acute pain is often the inciting event for long-term opioid use. Recognizing the impact of chronic opioid use, in March 2016, the Centers for Disease Control and Prevention (CDC) made recommendations for the duration and type of opioid therapy to prescribe for chronic pain.[6,7] A recent study undertaken by the CDC identified factors that would increase the likelihood of chronic opioid use, including prolonged duration of use a second prescription or refill, a cumulative dose of 700 morphine milligram equivalents (MMEs), and an initial 10- or 30-d supply.[7] A 2012 review of physicians' prescribing habits showed that 6.8% of the 4.2 billion prescriptions written by all providers and 36.5% of the prescriptions written by surgeons that year were for opioid medications.[8]

Resident physicians constitute nearly 120,000 providers across all specialties and frequently serve as the primary prescribers of postoperative and short-term opioid therapy in academic medical centers.[9] Unfortunately, although physicians entering residency are responsible for management of patients' postoperative pain, they are often ill-prepared, lacking appropriate education and training in safe and effective opioid prescribing practices.[10-15] A 2006 survey of residents from 13 graduate medical education programs found that 59% of respondents rated their medical school preparation and 36% rated their residency preparation "fair" or "poor" in terms of the management of chronic noncancer pain.[11] A recent study of surgical program directors showed that only 20% of surgical training programs have mandatory opioid prescribing education in place.[16] Although multiple institutional educational directives have been attempted with varying degrees of intervention and efficacy, there is certainly room for improvement.[11,15,17-20]

In this study, resident physicians at a single institution who had completed at least one surgical rotation were anonymously surveyed to assess opioid pain medication knowledge base, attitudes toward opioid pain medications, and opioid prescribing practices, with the ultimate goal of facilitating development of a resident-directed educational curriculum for teaching safe and effective opioid prescribing.

Methods

Survey design and participants

The Institutional Review Board at the University of Florida approved this study (IRB201601047) before survey administration, and informed consent of each participant was obtained before any data collection. A statistician with survey-based research experience (T.V.) was consulted to facilitate survey design and minimize bias. A survey model was chosen for ease of dissemination, conciseness, cost effectiveness, and dependability. The survey (Appendix I) was uploaded to an online institutional version of Qualtrics Survey Software (Qualtrics, Seattle, WA). A link to the electronic survey was distributed to eligible participants via email through internal servers at a single institution. Specific recipients of the survey email included all residents in postgraduate year (PGY) 1 and above at a single institution in specialties that cared for surgical patients during their training (see Table 1). Furthermore, residents whose primary specialty was not a surgical service (i.e., anesthesiology or emergency medicine) may have rotated on a variety of surgical services including but not limited to trauma surgery, transplant surgery, and pediatric surgery. They were not asked which service they had rotated on, but only if they had completed at least one rotation on a surgical service. Of note, advanced practice providers such as nurse practitioners and physician assistants were not included in this survey given the focus on resident prescribing practices and the fact that advanced practice providers cannot write outpatient opioid prescriptions at our institution. Recipients received three emails about the survey: day survey opened, 1 wk before survey closed, and the last day survey was open. There were no incentives offered to complete survey.

Table 1 – Demographics of survey respondents.

Measures	*n* (%)
PGY	
1	15 (28.3)
2	10 (18.9)
3	12 (22.6)
4	7 (13.2)
5+	9 (17.0)
Gender	
Male	32 (68.1)
Female	15 (31.9)
Specialty	
Anesthesiology	12 (25.5)
Emergency medicine	9 (19.1)
General surgery	15 (31.9)
Interventional pain	1 (2.1)
Oral and maxillofacial surgery	1 (2.1)
Orthopedic surgery	4 (8.5)
Urology	5 (10.6)