The Effect of Opioid Prescribing Guidelines on Prescriptions by Emergency Physicians in Ohio

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Study objective: The objective of our study is to evaluate the association between Ohio's April 2012 emergency physician guidelines aimed at reducing inappropriate opioid prescribing and the number and type of opioid prescriptions dispensed by emergency physicians.

Methods: We used Ohio's prescription drug monitoring program data from January 1, 2010, to December 31, 2014, and included the 5 most commonly prescribed opioids (hydrocodone, oxycodone, tramadol, codeine, and hydromorphone). The primary outcome was the monthly statewide prescription total of opioids written by emergency physicians in Ohio. We used an interrupted time series analysis to compare pre- and postguideline level and trend in number of opioid prescriptions dispensed by emergency physicians per month, number of prescriptions stratified by 5 commonly prescribed opioids, and number of prescriptions for greater than 3 days' supply of opioids.

Results: Beginning in January 2010, the number of prescriptions dispensed by all emergency physicians in Ohio decreased by 0.3% per month (95% confidence interval [CI] −0.49% to −0.15%). The implementation of the guidelines in April 2012 was associated with a 12% reduction (95% CI −17.7% to −6.3%) in the level of statewide total prescriptions per month and an additional decline of 0.9% (95% CI −1.1% to −0.7%) in trend relative to the preguideline trend. The estimated effect of the guidelines on total monthly prescriptions greater than a 3-day supply was an 11.2% reduction in level (95% CI −18.8% to −3.6%) and an additional 0.9% (95% CI −1.3% to −0.5%) decline in trend per month after the guidelines. Guidelines were also associated with a reduction in prescribing for each of the 5 individual opioids, with various effect.

Conclusion: In Ohio, emergency physician opioid prescribing guidelines were associated with a decrease in the quantity of opioid prescriptions written by emergency physicians. Although introduction of the guidelines occurred in parallel with other opioid-related interventions, our findings suggest an additional effect of the guidelines on prescribing behavior. Similar guidelines may have the potential to reduce opioid prescribing in other geographic areas and for other specialties as well. [Ann Emerg Med. 2017;70:799-808.]

Please see page 800 for the Editor's Capsule Summary of this article.

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INTRODUCTION

Background

Deaths from opioid overdose have reached epidemic levels in the United States, and recent data indicate the trend is worsening.[1] Parallel to this increasing tragedy has been the 4-fold increase in opioid analgesic sales between 1999 and 2010.[2] The increase in opioid prescriptions can be attributed to a variety of causes, including pharmaceutical company and professional society promotion of opioid use, heightened focus on the treatment of pain by prominent organizations such as The Joint Commission and the Institute of Medicine in the previous decade, and a societal desire to minimize pain.[3-8]

More recently, the increase in opioid prescriptions and the subsequent epidemic of misuse and overdose have led to scrutiny of physician prescribing of opioids. Governmental bodies and professional groups have paid particular attention to prescriptions by emergency physicians,[9-11] likely because they treat a high volume of patients with painful conditions, lack a preestablished patient-provider relationship, and are sometimes the initial prescriber of an opioid analgesic for patients who subsequently develop opioid use disorder.[12-15] In addition, one may make an association between the emergency department (ED) and overdose, given that emergency physicians both prescribe opioids for pain and treat overdoses.[16] On April 18, 2012, the Ohio Governor's Cabinet Opiate Action Team

Editor's Capsule Summary

What is already known on this topic

Opioid prescribing and abuse increased between 1990 and 2010.

What question this study addressed

Would a nonmandatory but encouraged state prescription drug monitoring program with education and recent prescription data access alter emergency department (ED) opioid prescribing?

What this study adds to our knowledge

Between 2010 and 2014, the mean monthly number of emergency physician opioid prescriptions in Ohio decreased, including those of more than 3 days' duration, and was increased by the introduction in 2012 of the program.

How this is relevant to clinical practice

Opioids prescribing in EDs began changing years ago, and educational and prescribing programs can further its reduction.

Research we'd like to see

What happens to opioid-related morbidity and mortality once prescription patterns change?

released opioid prescribing guidelines for EDs and acute care facilities.[17] The guidelines encouraged emergency physicians to check Ohio's prescription drug monitoring program, the Ohio Automated Rx Reporting System, to determine whether a patient has other prescriptions for controlled medications; urged prescribers to limit the quantity of opioids prescribed, writing for no more than a 3 days' supply; and encouraged providers to refer patients to a primary care provider or specialist for evaluation, treatment, and monitoring of continuing pain (Appendix E1, available online at http://www.annemergmed.com). Emphasis was also placed on educating patients about the risks and limited benefits of opioids. The guidelines were released with extensive publicity, and the Ohio chapter of the American College of Emergency Physicians, the Ohio State Medical Association, and the Ohio Hospital Association were among 9 organizations that endorsed and promulgated the document.

Importance

Guidelines are attractive to policymakers because they are relatively inexpensive to create, usually requiring only a committee, and they need only limited oversight once released. Although they promote certain prescribing behaviors, there is not a binding obligation that requires enforcement, such as proscriptive legislated regulations. We are unaware of any studies that have formally examined the effect of such policies on ED opioid prescribing. In addition to Ohio, several states (including Washington and West Virginia) have issued opioid prescribing guidelines in an effort to curb the misuse of prescription pain medications and reduce diversion addiction, abuse, and unintentional overdoses.[10,18,19] Other entities, such as the Centers for Disease Control and Prevention, have also released similar guidelines, but they are not ED specific.[20] Hospital-level opioid guidelines have effects on emergency physician prescribing behavior at the local level[21]; however, to our knowledge no studies have demonstrated their efficacy on a large scale.

Goals of This Investigation

The goal of this study is to determine whether the introduction of ED prescribing guidelines in Ohio in April 2012 was associated with a decline in the total number of opioid prescriptions by emergency physicians in the entire state. Using an interrupted time series analysis of data from the Ohio Prescription Drug Monitoring Program, we evaluated multiple years of emergency physician opioid prescribing before and after guideline implementation to determine the effect on the statewide number of opioid prescriptions and total morphine milligram equivalents written by emergency physicians, the number of prescriptions of individual types of opioids, and the number of prescriptions for greater than a 3 days' supply of opioids. Results demonstrating a decline in opioid prescribing would encourage implementation of similar guidelines for other geographic areas and specialties as well.

MATERIALS AND METHODS

Study Design, Setting, and Data Collection and Processing

The study design was an interrupted time series analysis using a retrospective analysis of monthly opioid prescriptions written by emergency physicians that were filled in Ohio between January 1, 2010, and December 31, 2014. The intervention was the release of the emergency physician opioid prescribing guidelines in April 2012. Data were extracted from Ohio's Prescription Drug Monitoring Program, a database that contains nearly all of the scheduled medication prescriptions filled in the state, regardless of payer or pharmacy (with rare exception, eg, prescriptions from Veterans Affairs hospitals).[22] As do the