Opioid Prescribing for Opioid-Naive Patients in Emergency Departments and Other Settings: Characteristics of Prescriptions and Association With Long-Term Use

Molly Moore Jeffery, PhD*; W. Michael Hooten, MD; Erik P. Hess, MD, MS; Ellen R. Meara, PhD; Joseph S. Ross, MD, MHS; Henry J. Henk, PhD; Bjug Borgundvaag, PhD, MD; Nilay D. Shah, PhD; M. Fernanda Bellolio, MD, MS

*Corresponding Author. E-mail: jeffery.molly@mayo.edu, Twitter: @mollyjeffery.

Study objective: We explore the emergency department (ED) contribution to prescription opioid use for opioid-naive patients by comparing the guideline concordance of ED prescriptions with those attributed to other settings and the risk of patients' continuing long-term opioid use.

Methods: We used analysis of administrative claims data (OptumLabs Data Warehouse 2009 to 2015) of opioid-naive privately insured and Medicare Advantage (aged and disabled) beneficiaries to compare characteristics of opioid prescriptions attributed to the ED with those attributed to other settings. Concordance with Centers for Disease Control and Prevention (CDC) guidelines and rate of progression to long-term opioid use are reported.

Results: We identified 5.2 million opioid prescription fills that met inclusion criteria. Opioid prescriptions from the ED were more likely to adhere to CDC guidelines for dose, days' supply, and formulation than those attributed to non-ED settings. Disabled Medicare beneficiaries were the most likely to progress to long-term use, with 13.4% of their fills resulting in long-term use compared with 6.2% of aged Medicare and 1.8% of commercial beneficiaries' fills. Compared with patients in non-ED settings, commercial beneficiaries receiving opioid prescriptions in the ED were 46% less likely, aged Medicare patients 56% less likely, and disabled Medicare patients 58% less likely to progress to long-term opioid use.

Conclusion: Compared with non-ED settings, opioid prescriptions provided to opioid-naive patients in the ED were more likely to align with CDC recommendations. They were shorter, written for lower daily doses, and less likely to be for long-acting formulations. Prescriptions from the ED are associated with a lower risk of progression to long-term use. [Ann Emerg Med. 2017;■:1-11.]

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

0196-0644/$-see front matter

http://dx.doi.org/10.1016/j.annemergmed.2017.08.042

INTRODUCTION

Background

Because of a 4-fold increase in opioid prescriptions since 1999, long-term opioid use has become major public health issues in the United States.[1,2] Because opioids are frequently prescribed to patients discharged from emergency departments (EDs), it is important to understand the relationship between ED opioid prescribing for opioid-naive individuals and their risk of progressing to recurrent opioid use.[3] Some policymakers and members of the public perceive EDs to be a significant source of overprescription of opioids.[4-6] This perception may stem from the fact that many ED visits involve chronic or acute pain; adult patients reported pain as the primary symptom in 45% of ED visits.[7] With so many patients in pain, it is not surprising that recent studies have found that 17% to 21% of all ED discharges included a prescription for opioids.[4,8]

Importance

Despite the public health consequences of nonmedical and long-term prescription opioid use,[9-12] short-term use of these medications is clinically indicated in select settings.[13,14] With some rare exceptions, health care professionals do not intend for an initial opioid prescription issued for an acute pain episode to result in indefinite repeated prescriptions.[15] Unfortunately, a dearth of information exists about the progression of intended short-term use to an unintended prolonged pattern of use,[16,17] which may occur in 1.5% to 27% of opioid-naive patients

Editor's Capsule Summary

What is already known on this topic

Dependency is a risk of opioid pain management.

What question this study addressed

In opioid-naive patients, are emergency department (ED) prescriptions more or less likely to progress to long-term opioid use than those from other clinical settings?

What this study adds to our knowledge

In this claims database of 5.2 million prescriptions in opioid-naive patients, opioid prescriptions written in the ED—compared with other locations—were of lesser dose and duration, and were approximately half as likely to lead to long-term use.

How this is relevant to clinical practice

Opioid prescriptions from the ED appear less likely to lead to long-term use than those from other clinical settings.

after they receive an initial prescription.[18-25] This is critically important because intentional short-term use is emerging as a previously underrecognized segue to unintended prolonged opioid use.[16-22,24-26] One of the 5 key questions proposed in the 2016 Centers for Disease Control and Prevention (CDC) guideline for prescribing opioids for chronic pain was to determine the effects of opioid therapy for acute pain on long-term opioid use.[27] The goal of these guidelines is to improve opioid prescribing practices to ensure patients have access to safer treatment while reducing the risks of nonmedical use and overdose.

Limited research has been conducted to date on prescribing practices for acute pain that limit risk of long-term opioid use. Current recommendations are to prescribe the lowest effective dose and quantity needed for the expected duration of pain. With new guidelines and ED clinicians facing the challenge of patients seeking help for uncontrolled pain, it is natural to ask whether and how prescribing in the ED compares with that in other settings. The guidelines were not published until after the study period; our goal in using their recommendations is not to determine the adherence rates to the CDC guidelines per se, but rather to use them as a source of reasonable and evidence-based standards for comparing prescriptions attributed to different settings.

Goals of This Investigation

We used administrative claims data to compare characteristics of opioid prescriptions written for opioid-naive patients discharged from the ED and other settings and evaluated the risk of long-term use of prescription opioids by addressing these questions: To what extent are opioid prescriptions issued to opioid-naive patients in the ED or non-ED settings concordant with best practices on the number of days supplied, the daily dose of the prescription, and the number of prescriptions filled for long-acting or extended-release formulations? For opioid-naive patients, what is the difference in the rate of progression to long-term opioid use after an initial prescription in the ED compared with a non-ED setting?

MATERIALS AND METHODS

We adhered to the Reporting of Studies Conducted Using Observational Routinely-Collected Health Data statement.[28]

Study Design and Setting

We conducted an analysis of administrative claims data from January 1, 2009, through December 31, 2015, from the OptumLabs Data Warehouse, a database composed of privately insured and Medicare Advantage enrollees throughout the United States; more than 35 million unique people had both medical and prescription drug coverage at some time during the study period.[29] OptumLabs Data Warehouse contains longitudinal health information on enrollees from geographically diverse regions across the United States, with the greatest representation from the Southern and Midwestern states.[30] It includes adjudicated claims for all health care services incurred by beneficiaries and submitted to the insurance company for payment. The included plans provide coverage for professional, facility, laboratory, and pharmacy claims. Administrative data include beneficiary sex, race or ethnicity, age, and dates of coverage. Medical claims include *International Classification of Diseases, Ninth Revision (ICD-9)* and *ICD-10* procedure and diagnosis codes, Healthcare Common Procedure Coding System procedure codes, site of service codes, and provider specialty codes.[31] The commercial population covered by OptumLabs Data Warehouse is similar to the US population of commercially insured people in age, race or ethnicity, and sex. Further detail is provided in Appendix E1 (available online at http://www.annemergmed.com).