Cover Story

Sex and race or ethnicity disparities in opioid prescriptions for dental diagnoses among patients receiving Medicaid

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ABSTRACT

Background. The objective of this study was to identify specific factors (sex, race or ethnicity, and health care provider type) associated with patient receipt of an opioid prescription after a dental diagnosis.

Methods. The authors used Medicaid claims dated from January 1, 2013, through September 30, 2015, for 13 US states in this study. The authors identified oral health–related conditions by using *International Classification of Diseases*, Ninth Revision, Clinical Modification diagnosis codes 520.0 through 529.9.

Results. During the 2013-2015 study period, among the more than 890,000 Medicaid patients with a dental diagnosis, 23% received an opioid within 14 days of diagnosis. Female patients were 50% more likely to receive an opioid for pain management of a dental condition than were men (odds ratio [OR], 1.53; 95% confidence interval [CI], 1.52 to 1.55). Non-Hispanic whites and African Americans were approximately twice as likely to receive opioids than were Hispanics (OR, 2.11; 95% CI, 2.05 to 2.17 and OR, 1.88; 95% CI, 1.83 to 1.93, respectively). Patients receiving oral health care in an emergency department were nearly 5 times more likely to receive an opioid prescription than were patients treated in a dental office (OR, 4.66; 95% CI, 4.59 to 4.74). Patients with a dental condition diagnosed were nearly 3 times as likely to receive an opioid from a nurse practitioner as from a dentist (OR, 2.64; 95% CI, 2.57 to 2.70). Opioid use was substantially higher among African American female patients (OR, 3.29; 95% CI, 3.18 to 3.40) and non-Hispanic white female patients (OR, 3.24; 95% CI, 3.14 to 3.35) than among Hispanic female patients.

Conclusions. Opioid prescribing patterns differ depending on patient race or ethnicity, sex, and health care provider source in patients with a dental diagnosis in the United States.

Practical Implications. Dentists are providing substantially less opioid prescriptions compared to their medical colleagues for pain treatment following a dental diagnosis in the Medicaid population. When considering pain management for dental and related conditions, dentists should continue with conservative prescribing practices as recommended.

Key Words. Opioid; Medicaid; oral diagnosis; drug prescriptions.

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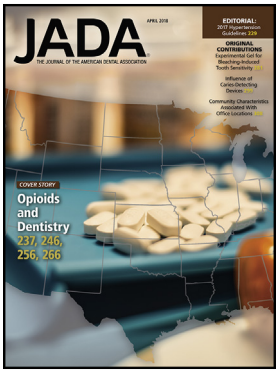

Over the last 10 years, the United States has experienced increasing rates of opioid use, abuse, and overdose deaths. This concern culminated in a presidential declaration in 2017 that the opioid crisis was a national public health emergency.[1] The burden of the opioid epidemic affects all aspects of the health care delivery system: patients, health care providers (HCPs), and insurers. An estimated 1 in 5 patients with noncancer, pain-related diagnoses receives an opioid prescription in office-based settings.[2] Among all nononcology-related HCPs, dentists provide the second fewest opioid prescriptions, after general practitioners, family medicine, primary care, and internists.[3] Opioid prescribing by dentists is an estimated 12% of the overall annual opioid

prescription total,[2,4] and 1,500 deaths annually may be attributable to unused opioids originally prescribed by dentists for therapeutic purposes.[5] The overall burden is likely higher for management of acute dental pain because emergency department (ED) HCPs also prescribe opioid analgesics for nontraumatic dental conditions (NTDCs).[6-10]

Oral pain can be acute, often occurring abruptly and intensely.[11] Consequently, patients often seek relief of oral pain at emergency and urgent care facilities, leaving ED HCPs to prescribe treatment that is only palliative and nondefinitive.[12] Consideration of how to treat oral and dental pain with an opioid includes a number of factors, such as HCP experience, professional guidelines, the patient's own pain perception, communication regarding the pain experience between patient and the treatment team, and an individual pain assessment.[13]

Race or ethnic groups other than the non-Hispanic white group are less likely to receive an opioid prescription for any condition.[13] This situation is frequently due to an incorrect HCP perception that, relative to a non-Hispanic white patient with a similar, pain-related symptom, when members of race or ethnic minority groups seek care for pain at the ED they are more likely to be drug seeking than experiencing actual pain.[14,15] Biological differences in pain perception by members of race or ethnic minority groups may lead to further undertreatment for pain.[16] Hispanics are one-half as likely as non-Hispanic whites to receive an analgesic medication during an ED visit, even after controlling for patient characteristics within both groups.[17] Non-Hispanic whites are 60% more likely to receive opioid analgesics than are African Americans.[18]

Generally, female patients are more likely to receive a prescription for an opioid for dental pain than are men during an ED visit.[18] The Centers for Disease Control and Prevention report that opioid prescribing rates for any diagnosis, regardless of cause, is higher in female patients than in men.[19] There may be a physiological explanation for this difference because women consistently show a greater sensitivity to pain than do men.[20] Differences observed in receipt of opioid prescriptions are not always accounted for when controlling for demographic factors. Although previous researchers have correlated sex differences in pain intensity, these differences are not always seen in opioid prescriptions provided to patients; sometimes female patients receive more prescriptions, especially stratified according to race or ethnicity, and sometimes male patients receive more prescriptions.[20] Differences in drug-prescribing patterns could be caused by an unconscious bias among HCPs.[21] Nevertheless, the evidence suggests that attributing opioid prescription disparities to HCPs' personal beliefs, HCP type, and patient demographic characteristics is inconclusive at best.[22]

Information about the opioid prescribing practices of ED HCPs for dental pain is sparse.[23] Moreover, to our knowledge, there is no information regarding assessment of patient sex, race or ethnicity, or HCP differences for opioid prescriptions for any dental diagnosis among patients of low income, such as Medicaid recipients. Our main aim in this study was to investigate differences in opioid receipt for dental diagnoses according to key demographic factors on the basis of outpatient claims data for children and adults enrolled in Medicaid and to determine whether these differences were influenced by the HCP type or dental diagnosis.

METHODS

Data source and sample selection

In this retrospective study, we used deidentified medical and pharmacy Medicaid claims data from January 1, 2013, through September 30, 2015 from the Truven MarketScan Database Multi-state Medicaid core data set (https://truvenhealth.com/markets/life-sciences/products/data-tools/marketscan-databases). This database contains individual claims information from 2.8 million people from 13 US states. To protect patient confidentiality, this data set does not contain geographic identifiers or personally identifiable information. A research collaboration with the DentaQuest Institute (Westborough, MA), which obtained the data access license, made access to this database possible.

The data included person-level information (for example, age, sex, and enrollment period) and claim-level data (for example, outpatient pharmacy prescription claims) for all claims from January 1, 2013, through September 30, 2015, (because of the change from *International Classification of Diseases*, Ninth Revision, Clinical Modification [ICD-9-CM] to *International Classification of Diseases*, Tenth Revision, Clinical Modification on October 1, 2015). We searched outpatient

ABBREVIATION KEY

ED: Emergency department.
HCP: Health care provider.
ICD-9-CM: *International Classification of Diseases*, Ninth Revision, Clinical Modification.
NTDC: Nontraumatic dental condition.