CareQuest Institute for Oral Health®

TN Division of TennCare

RESEARCH BRIEF

Impact of Opioid Prescribing Policy Changes:

The TennCare Dental Experience

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Introduction

Misuse and abuse of opioid medications is highly prevalent in the United States (US) and has resulted in adverse patient outcomes, including morbidity and mortality. Opioid-related deaths have risen across the nation, with more than 70,000 deaths occurring in 2017 alone. More than 35% of these deaths were related to a prescription opioid and the cost of misuse is estimated at $78.5 billion a year. Drug overdose remains the leading cause of accidental death in the US.

In Tennessee, there were 15,001 nonfatal overdose emergency department visits in 2016. 1,268 Tennesseans died due to an overdose from a prescription opioid in 2017. The state saw a decline in both total prescriptions and patients receiving a prescription from 8.2 million prescriptions and 1.8 million patients in 2013 to 6.8 million prescriptions and 1.6 million patients in 2017. While impressive, the remaining available opioids still represent 973 morphine milligram equivalency (MMEs) per patient, per day.

On January 16, 2018, Tennessee implemented new measures for all providers to reduce some of the effects of the opioid epidemic on its TennCare (the state's Medicaid program) members. The new measures limited opioid prescriptions to a maximum dosage of 60 MMEs per day, with a 5-day supply, later reduced to a 3-day supply. After the first fill, another 10 days can be granted only with prior authorization from the state. State law has also been changed to cover all opioid prescriptions and commercial plans operating in the state have adopted similar reductive measures. To better understand the impact of this significant health policy change on prescriptions by dental providers, TennCare partnered with their dental claims administrator, DentaQuest, to evaluate and compare opioid prescribing patterns among patients and providers within their network.

Methods

This analysis reviews changes in opioid prescribing patterns by dental providers authorized by the TennCare dental network that occurred between January 1, 2017 and December 31, 2018. This period allows for a robust evaluation of the effectiveness of the prescribing policy changes implemented on January 16, 2018. Prescription data was provided by TennCare and then matched to claims and procedure records by DentaQuest.

Claims reviewed were limited to children aged 0 to 20. Dental services are only covered for TennCare members under age 21. Patient age was calculated by subtracting the year of prescription from the year of birth, and the analysis excluded Meperidine HCL and Morphine Sulfate solutions from the final analysis, as they are often given at the time of the procedure for sedative purposes. Specific medication type and formulation were also reviewed. In addition to top-line review of trends by age, gender, provider type and procedure type, the analysis also identified prescriptions that were significantly outside normal parameters, as determined by TennCare. For some analysis, each year was further stratified by quarter.

Prescriptions per 100 patients and total prescriptions were calculated across both years. Trends in type of opioid medication, provider specialty, and provider type were calculated. Prescriptions were normalized using MME. MME is designed to standardize all opioid medication types and strengths to a standard that allows comparison across the spectrum of medications[1]. All analyses were completed in SAS.

[1] See the Centers for Disease Control and Prevention's "Calculating Total Daily Dose of Opioids for Safer Dosage," from: https://www.cdc.gov/drugoverdose/pdf/calculating_total_daily_dose-a.pdf or the Centers for Medicare and Medicaid Services "Opioid Oral Morphine Milligram Equivalent (MME) Conversion Factors," from: https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovContra/Downloads/Opioid-Morphine-EQ-Conversion-Factors-Aug-2017.pdf.

Results

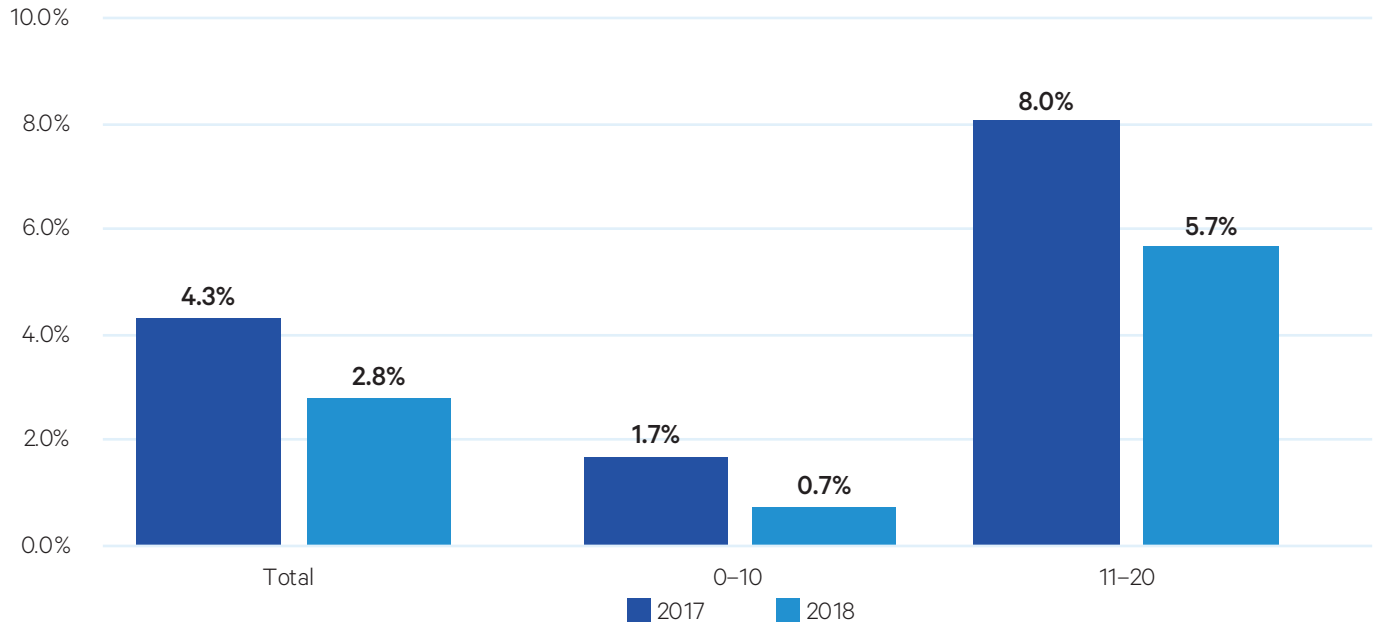
There were 455,152 patients aged 0-20 who had a dental procedure in 2017 (Table 1); 4.3% of dental patients received an opioid and there were 23,603 prescriptions written to 19,670 patients, or 5.19 opioids per 100 enrolled patients. While the total number of patients receiving a dental service remained relatively steady in 2018, at 451,802, a change of only 0.7%, there was a significant drop in the total number of opioid prescriptions (n=12,936) to 12,788 patients. Of those patients, 2.8% received an opioid prescription, representing 2.86 opioids per 100 patients. This is a reduction of 45.2% in opioid prescriptions and a 34.5% reduction in patients receiving an opioid.

When stratified by age, similar trends were identified in the total percentage of patients aged 0 to 20 who received an opioid in each year analyzed (Figure 1). An overall drop from 4.3% of patients in 2017 to 2.8% of patients in 2018 was observed. Among children aged 11-20, the percentage who received an opioid prescription in 2018 was 5.7%, compared to 8.0% in 2017. In 2017, 87% (17,045) of patients received only one opioid prescription, 10% (1,989) received two, and 3% (36) received three or more opioid prescriptions (Figure 2). In 2018, 99% of all patients (12,463) received only one prescription with 3 patients receiving two.

Table 1. Changes in Opioid Prescriptions to TennCare Patients, Ages 0-20, from 2017 to 2018

Year	Total # of Patients	Total # of Opioid Prescriptions	Prescribed Patients	% Receiving Opioid(s)	Opioids per 100 Patients
2017	455,152	23,603	19,670	4.30%	5.19
2018	451,802	12,936	12,788	2.80%	2.86
Change from 2017 to 2018	-3,350	-10,667	-6,882	-1.50%	-2.32
% Change from 2017 to 2018	-0.70%	-45.20%	-35.00%	-34.50%	-44.80%

Figure 1: Percentage of TennCare Patients, By Age, Receiving Opioid Prescriptions in 2017 and 2018



When stratified by provider type into four groups (oral surgeons, general practitioners, pediatric providers and other), the year-over-year difference was also apparent (Figure 3). Oral surgeons prescribed 53.1 prescriptions per 100 patients in 2017 and 38.1 per 100 in 2018; general practitioners dropped from 3.6 per 100 in 2017 to 1.8 per 100 in 2018 and pediatric dentists from 1.4 per 100 in 2017 to 0.9 in 2018. Providers from the other category, which includes specialties like prosthodontics, orthodontics and periodontics, increased from 1.9 per 100 in 2017 to 4.3 per 100 in 2018; the increase, however, is due to a significant drop in total patient count from 2017 to 2018.

Due to the life-threatening complications that are associated with the use of codeine containing medications in children under the age of 12, including respiratory depression, the analysis reviewed the percentage of medications containing codeine for those patients aged 0 to 10 in both years. This was analyzed by quarter for each year, as a Food and Drug Administration (FDA) safety announcement was issued on April 20, 2017. In the first quarter of 2017, 73.5% of all opioid prescriptions written for a child aged 0-10 contained codeine. This dropped to 62.1% in quarter 2, 7.4% in quarter 3 and 0% for all remaining analyzed quarters. When checked, there were zero prescriptions containing codeine for children 0-10 written after October 1, 2017.

Figure 2: Number of Prescriptions among TennCare Patients Receiving Opioid Prescriptions in 2017 and 2018

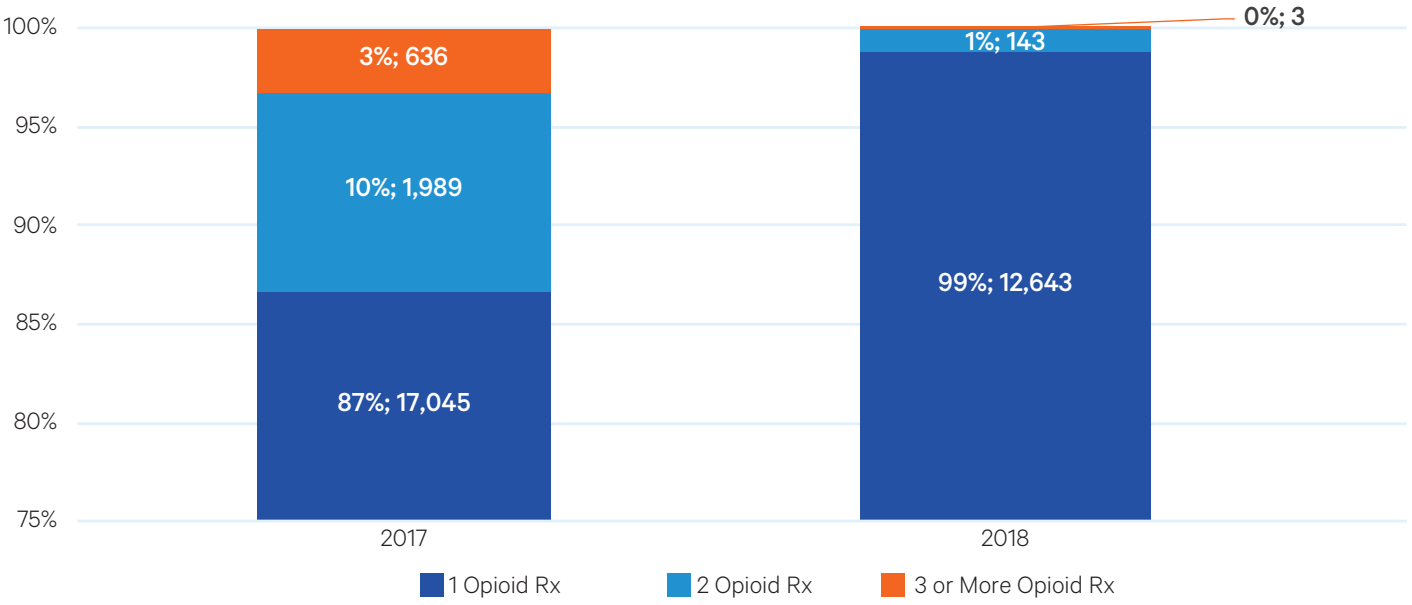
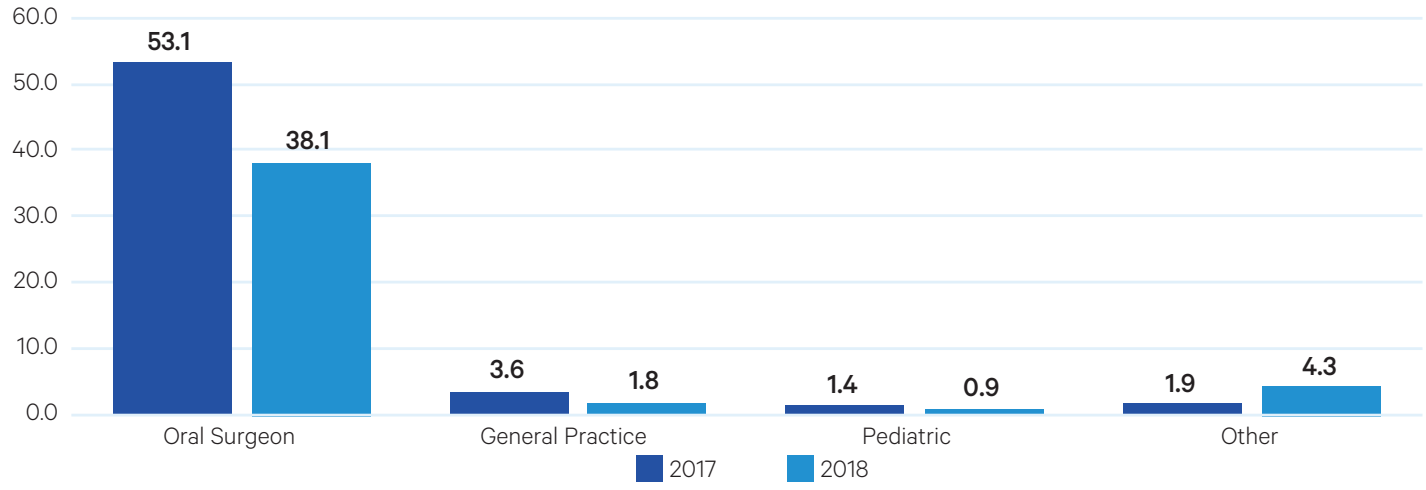
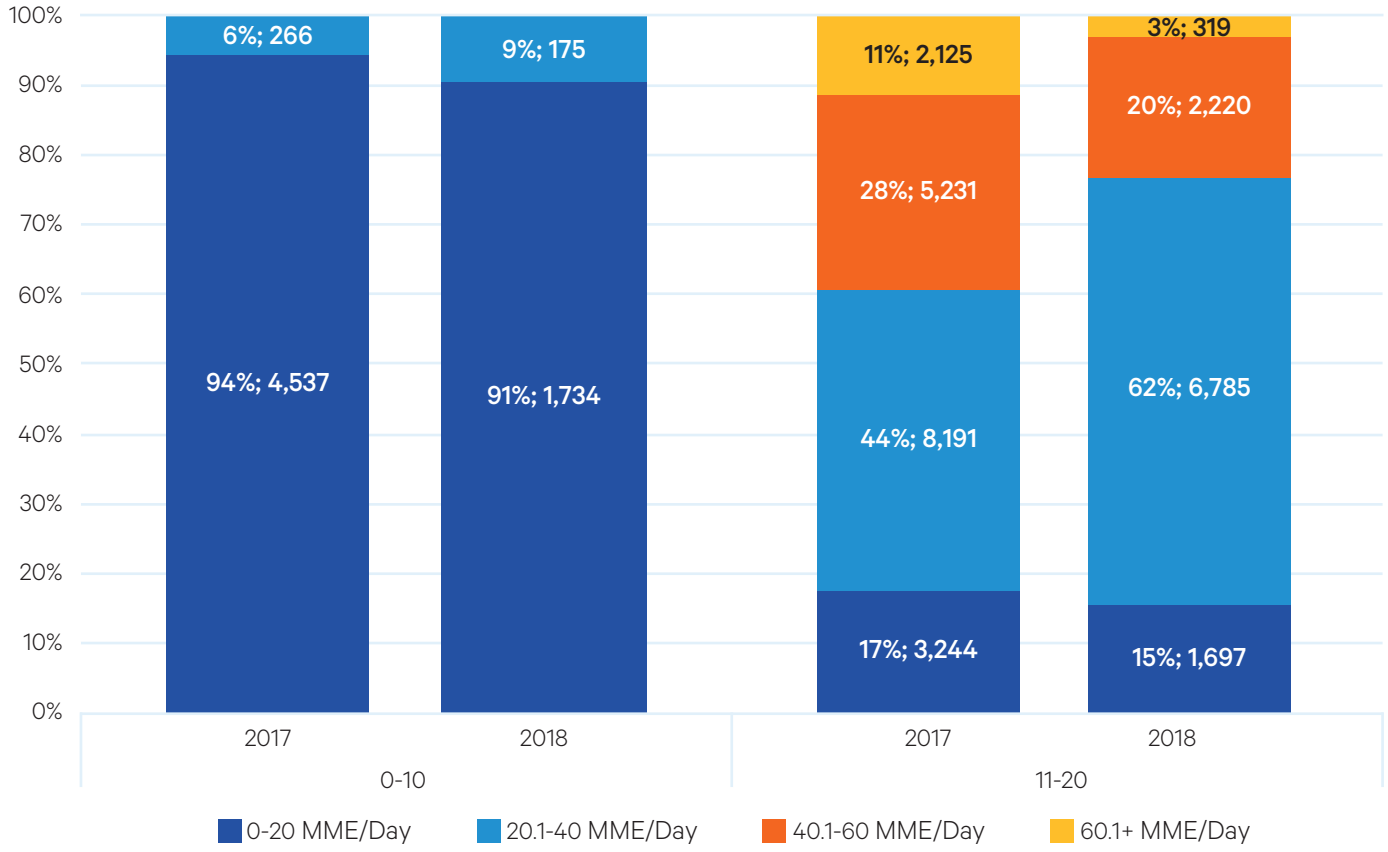


Figure 3: Prescription Per 100 TennCare Patients by Provider Type



Total MMEs were also calculated for each age group. Following CDC advice and the policy change limiting prescriptions over 60 MMEs per day or greater, MMEs were stratified into four groups: 0-20, 20.1-40, 40.1-60, and 60.1 and over. Among children 0-10, the majority of prescriptions written were for very low MMEs per day, with 94% in 2017 and 91% in 2018 of 20 MMEs or less. Very few in this age group had an MME of 40 or more per day. Among children 11-20, 17% had prescriptions at 20 MMEs or less, 44% were between 20.1 and 40, and 11% were over 60 MMEs per day in 2017. In 2018, 62% of the prescriptions for this age group fell between 20.1 and 40 MMEs per day, while only 3% were over 60 MMEs per day (Figure 4).

Figure 4: Distribution of Opioid Prescriptions to TennCare Patients, by Age and MME Per Day, in 2017 and 2018



Discussion

This analysis is one of the first studies that has shown the immediate impact of a policy change on provider behavior. Total patients remained relatively stable between 2017 and 2018; with 455,152 in 2017 and 451,802 in 2018. However, opioid prescriptions in both number and total MMEs per day dropped dramatically. The differences apparent between 2017 and 2018 suggest the prescribing patterns in place prior to the policy change were not necessary. Research has shown that 54% of all prescriptions provided for a dental procedure or surgery remain unused by the patient.

For many individuals under 20, dental surgery is the first exposure to opiate or narcotic pain medications, with more than half of high-school seniors reporting both medical and non-medical use of prescription opioid medication. Among Tennessee children aged 17 and younger, 31.3% of those enrolled in Medicaid received an opioid after a dental procedure. Among patients of any age, 17.27% of first-time prescriptions were related to a dental surgery or procedure and 80.87% of repeat prescriptions within 30 days of the initial dental-related prescription remain dental related. Almost 40% of dental same-day prescriptions were greater than or equal to 50 MMEs per day. The results show that no patient aged 10 or under received a codeine-containing medication after the third quarter of 2017. This highlights that analgesia can be controlled with alternative medications that do not have the same deleterious effects as codeine in this age group.

There are some limitations in this analysis. Race was not evaluated, as the variable was not available in the data analyzed. Therefore, important patterns may be present that cannot be seen. Secondly, this analysis only reviewed those providers within the dental network, and so the contribution to the epidemic by medical providers was not evaluated. There is a possibility that some patients received an opioid for a dental complaint from a medical provider, but that data is not available in this analysis.

Despite these limitations, the significant and immediate impact of the opioid prescribing restrictions implemented by TennCare cannot be ignored. Results show a reduction in the amount of prescription opioids available for misuse or abuse, and the important, necessary role state policy makers can play in making an impact on the epidemic. With the aforementioned changes in Tennessee, combined with the implementation of a Controlled Substances Monitoring Database (CSMD), the state can expect even further reductions in prescription-related opioid morbidity and mortality. Finally, this report also shows the importance of collaborative relationships between state leaders and claims administrators and demonstrates the effectiveness of working together to achieve positive change. Research and evaluative efforts continue in Tennessee to better understand unique factors within the state that may be contributing to the continuation of the epidemic and to further educate providers, pharmacists and patients about opiate misuse and abuse. Policy changes can have significant, immediate and positive impacts on the health and quality of life of the population.

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CareQuest Institute for Oral Health

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