

Medicaid Opioid Prescribing Patterns by Dentists in New York Prior to the CDC's Opioid Prescribing Guidelines

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ABSTRACT

Purpose of Study: The purpose of this study is to describe dentists' prescribing patterns in New York State prior to the implementation of the 2016 CDC opioid prescribing guidelines for Medicaid beneficiaries.

Methods: The study assessed Medicaid claims data from 2014 to 2016 for New Yorkers enrolled in Medicaid. Study subjects were restricted to those who were ages 18 or older as of January 1, 2014 and were continuously covered by Medicaid for over 90 days during that period. Medicaid beneficiaries who were in acute pain, in hospice, with a diagnosis of cancer, or with end-stage renal disease were excluded from the analysis.

Every opioid prescription was converted to a standard morphine milligram equivalent (MME) using CDC conversion charts. Prescriptions and their related visits were classified as dental or non-dental, opioid or non-opioid, and dental visits were then categorized as surgical or non-surgical.

For opioid prescriptions, the total MME and days' supply (DS) were assessed for each year, by claim, by provider type, and per patient. A 15-day care episode was used to match opioid prescriptions to dental visits to study prescribing patterns. Finally, the association between the prescribed opioid quantity and the follow-up visit was analyzed using a multivariate linear mixed model.

Key Findings: Dentists provided 6.9% of all opioid prescriptions, with a decrease in share from 8.2% to 5.3% between 2014 and 2016. Dentists prescribed, on average, a total MME of 112.4 compared to 1,335.3 for medical providers.

Over the 3-year study period, 1.3% of claims exceeded 90 MME daily, and 0.7% exceeded 120 MME daily. About 56.3% of claims exceeded the 3-day supply limit but only 3.4% exceeded the 7-day supply maximum. Among all dental opioid prescriptions, 89.7% were able to match a dental visit within ±7 days of the prescription date.

In the regression analysis, New York Medicaid beneficiaries who had a follow-up surgical visit received significantly higher total MME (50.04mg, $P < 0.001$) compared to those who had non-surgical visits. For each additional day before the follow-up visit, they received 0.60mg more total MME ($P < 0.001$).

Implications: The analysis suggests that dentists' opioid prescribing practices in New York for Medicaid beneficiaries started to change leading up to 2016 in prescribing guidelines. Further research is needed to assess how dentists' prescribing practices might have changed since implementation of the new guidelines. Finally, because the analysis was limited to Medicaid claims, dentist prescribing practices for commercially-insured patients should also be assessed to determine if opioid use differs for this population.

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INTRODUCTION

- Nearly 450,000 Americans died from opioid-related overdoses between 1999 to 2018¹
- Opioids accounted for 70% of all overdose deaths in the US, ¹ including nearly 2,000 opioid-related deaths in New York State ²
- Dentists are a major prescriber of opioids, falling behind only primary care physicians and internists as the leading prescribers of opioids³
- Visits to emergency departments (EDs) for non-traumatic dental conditions (NTDC) also contribute to the use of opioids⁴
- Age plays an important part in opioid use and abuse, with adolescents and young adults at higher risk of using and abusing prescription and non-prescription opioids than other age cohorts⁵
- Dentists are the number one prescriber of opioids to patients 25 and under^{6,7}
- This study describes the 3-year baseline status of dentists' opioid prescribing patterns in New York State prior to implementation of the 2016 CDC prescribing guidelines

METHODS

- Opioid prescriptions were identified using Medicaid pharmacy claims data
- Every opioid prescription was converted to a standard morphine milligram equivalents (MME) per claim, per daily dose, per total prescription, and per patient
- Prescriptions were classified as dental or non-dental
- A 15-day window was used to link opioid prescriptions originating from dentists to patients' potential dental visits by date
- Current Dental Terminology (CDT) codes were used to categorize dental visits as surgical or nonsurgical
- Descriptive statistics were calculated for all variables and outcomes
- For opioid prescriptions, MME and days of supply were assessed for each year, by claim, by provider type, and per patient
- Association between quantity of opioid prescriptions received, length of time to a follow-up dental visit, and follow-up visit type were all calculated using a multivariate linear mixed model

RESULTS

Only a small percentage of prescriptions exceed recommended MME or day-supply thresholds

- Just over 1% of opioid prescriptions exceeded the daily 90 MME threshold, and less than 1% exceeded the daily 120 MME threshold (Table 1)
- Fifty-six percent of opioid prescriptions exceeded the 3-day supply limitation but only 3% exceeded the 7-day supply limitation

Table 1. Number (%) of Dentist Opioid Prescriptions Exceeding Current Best Practices, 2014–2016

Prescriptions Exceeding Daily 90 MME	Dental Opioid Prescriptions	
	Number	Percent
2014	1,868	1.3
2015	1,467	1.3
2016	1,012	1.4
3-Year Total	4,347	1.3
Prescriptions Exceeding Daily 120 MME	Number	Percent
	2014	805
2015	744	0.7
2016	609	0.8
3-Year Total	2,158	0.7
Prescriptions Exceeding 3-Day Supply	Number	Percent
	2014	82,391
2015	61,859	56.5
2016	40,104	54.7
3-Year Total	184,354	56.3
Prescriptions Exceeding 7-Day Supply	Number	Percent
	2014	4,852
2015	3,937	3.6
2016	2,275	3.1
3-Year Total	11,064	3.4

Nearly three-fourths of dental-related opioid prescriptions were prescribed the day of a dental office visit (Table 2)

- Less than 5% of dental-related opioid prescriptions had no associated dental office or dental ED visits

Table 2. Dental-Related Opioid Prescriptions Matched to Dental-Related Office/Emergency Department Visits, 2014–2016

	Days Dental Opioid Prescribed	Number of Opioid Prescriptions With Matching Visits	Percent of Prescriptions
Days Before Visit	7	13	0.0%
	6	15	0.0%
	5	52	0.0%
	4	461	0.1%
	3	1,639	0.5%
	2	6,244	1.9%
	1	11,792	3.6%
	On Visit Date	239,245	73.0%
Days After Visit	1	20,353	6.2%
	2	7,548	2.3%
	3	4,531	1.4%
	4	1,311	0.4%
	5	392	0.1%
	6	40	0.0%
	7	17	0.0%
	Matched to Dental Office Visit	293,653	89.7%
	No Match to Dental Office Visit	33,893	10.3%
	Match to Dental Same-day ED Visits	19,119	5.8%
	No Match to Any Dental-related Visit	14,774	4.5%
	Total	327,546	100.0%

DISCUSSION

- While existing literature suggests that dentists' prescribing patterns contributed to the rise in misuse of opioids by patients, this research suggests that dentists in New York State had a low impact on increasing opioid use rates in the state's population
- Majority of opioid prescriptions issued by dentists corresponded with dental office visits or dental-related ED visits (nearly 80% related to surgical procedures), suggesting clinical justification for their issuance
- Dentists prescribing patterns demonstrate general compliance with best practices in terms of limiting MMEs per prescription
- Only a small percentage of dental-related prescriptions exceeded the daily 90 MME and the 7-day supply limitation
- The evidence in this study suggests that dentists were altering opioid prescribing practices prior to changes in prescribing guidelines issued by the CDC, New York State, and professional organizations

CONCLUSIONS

- Analysis suggests that dentists' opioid prescribing practices in New York State for Medicaid beneficiaries started to change leading up to the new guidelines issued in 2016
- Further research is needed to assess how dentists' prescribing practices may have changed since 2016 in response to the revised guidelines
- Dentist prescribing practices for patients with commercial insurance should be assessed to determine if opioid use and abuse differs in New York State based on socioeconomic status, insurance status, or other demographic characteristics as other research has indicated

REFERENCES

- Wilson N, Kariisa M, Seth P, Smith H IV, Davis NL. Drug and opioid-involved overdose deaths—United States, 2017–2018. *MMWR Morb Mortal Wkly Rep.* 2020;69:290–297. Doi: 10.15585/mmwr.mm6911a4.
- New York: Opioid-Involved Deaths and Related Harms. National Institute on Drug Abuse website. Published April 3, 2020. Accessed July 12, 2021. <https://nida.nih.gov/drug-topics/opioids/opioid-summaries-by-state/new-york-opioid-involved-deaths-related-harms>
- Volkow ND, McLellan TA, Cotto JH, Karithanom M, Weiss SB. Characteristics of opioid prescriptions in 2009. *JAMA.* 2011;305(13):1299–1301.
- Okunseri C, Dionne RA, Gordon SM, Okunseri E, Szabo A. Prescription of opioid analgesics for nontraumatic dental conditions in emergency departments. *Drug Alcohol Depend.* 2015;156:261–266. Doi:10.1016/j.drugaldep.2015.09.023.
- Van Winkle PJ, Ghobadi A, Chen Q, Menchine M, Sharp AL. Association of age and opioid use for adolescents and young adults in community emergency departments. *Am J Emerg Med.* 2019;37(8):1397–1403. Doi:10.1016/j.ajem.2018.10.021.
- McCauley JL, Leite RS, Melvin CL, Fillingim RB, Brady KT. Dental opioid prescribing practices and risk mitigation strategy implementation: Identification of potential targets for provider-level intervention. *Substance Abuse.* 2016;37(1):9–14.
- Gupta N, Vujcic M, Blatz A. Opioid prescribing practices from 2010 through 2015 among dentists in the United States: What do claims data tell us? *J Am Dent Assoc.* 2018;149(4):237–245 e236.