

Review Article

From Chairside to Crisis: The Role of General Dentists in the U.S. Opioid Epidemic

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Abstract: Background: The opioid crisis in the United States continues to escalate, with over 80,000 opioid-related deaths annually, many involving synthetic opioids like fentanyl. Dentists, particularly general practitioners, historically contributed significantly to opioid prescribing, often serving as a point of first exposure to opioids for adolescents and young adults. **Objective:** This review explores the evolving role of general dentists in the context of the opioid epidemic, analyzing their responsibilities, current prescribing practices, and potential contributions to mitigating misuse through evidence-based interventions. **Methods:** A narrative review of current literature, public health guidelines, and policy frameworks was conducted to assess the contribution of dental prescribing to opioid misuse and to identify best practices in pain management, education, and policy compliance. **Results:** While opioid prescriptions by dentists have declined, inappropriate and excessive prescribing remains prevalent. Evidence supports the efficacy of non-opioid analgesics, such as ibuprofen and acetaminophen combinations, as first-line therapy for most dental pain. National guidelines, including those from the ADA and CDC, advocate limited opioid use, implementation of Prescription Drug Monitoring Programs (PDMPs), and enhanced provider education. Patient counseling and expectation management also play a vital role in reducing misuse. **Conclusion:** General dentists are uniquely positioned to influence opioid prescribing practices. By embracing non-opioid alternatives, adhering to clinical guidelines, and engaging in ongoing education and patient communication, dentists can significantly reduce the risk of opioid misuse while ensuring effective pain management. A multidisciplinary, evidence-based approach is essential to positioning dentistry as a proactive force in addressing the opioid epidemic.

Keywords: Opioid Crisis, Dental Prescribing, General Dentists, Pain Management, NSAIDs, Non-Opioid Analgesics, Prescription Monitoring, Public Health, Dental Education.

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1. INTRODUCTION

The opioid crisis in the United States has escalated into a major public health emergency over the past three decades. Initially sparked in the late 1990s by the widespread prescription of opioid analgesics, the epidemic has since evolved due to overprescribing, diversion, and the proliferation of illicit synthetic opioids such as fentanyl. According to the Centers for Disease Control and Prevention (CDC), approximately 105,000

overdose deaths occurred in 2023 alone, with over 80,000 involving opioids, and synthetic opioids like fentanyl accounting for nearly 80% of these fatalities [1, 2].

Dentists have historically played a significant role in opioid prescribing, especially for acute dental pain following procedures like third molar extractions. Adolescents and young adults frequently encounter opioids for the first time through dental prescriptions,

placing general dentists in a unique position both as contributors to, and potential mitigators of, opioid misuse. Despite declining prescription rates in recent years, inappropriate prescribing patterns and lack of awareness continue to contribute to opioid availability and abuse [2].

A 2017 report noted that 11.4 million Americans misused prescription opioids, contributing to 46 overdose deaths daily and causing an economic burden exceeding \$78 billion annually [3]. Dentists may unintentionally contribute to this trend, as some patients seek dental care solely to acquire opioids for non-medical use. While opioids remain effective for managing acute post-operative pain, growing evidence supports the use of non-opioid alternatives, such as ibuprofen and acetaminophen, which have demonstrated equal or superior efficacy for many dental indications.

The Institute of Medicine has affirmed that opioids, when used as prescribed, can be safe and effective for acute pain and end-of-life care. However, it has also highlighted the lack of evidence supporting long-term opioid use and warned of the serious crisis of diversion and addiction [3].

This review aims to explore the evolving role of general dentists in addressing the opioid epidemic. It will examine their prescribing responsibilities, propose forward-looking strategies that incorporate education, policy reform, and alternative pain management approaches. Through increased awareness and responsible stewardship, dentists can become proactive agents in mitigating one of the most pressing public health threats in the United States.

2. History

Understanding the roots of the opioid crisis is essential to developing effective strategies for its resolution. The origins of the epidemic trace back to the 1990s, a period marked by a significant shift in pain management practices. During this time, healthcare providers, under growing pressure to treat pain as the "fifth vital sign" began prescribing opioid medications more liberally for a wide range of acute and chronic pain conditions. Pharmaceutical companies aggressively marketed these drugs, assuring the medical community that patients were unlikely to become addicted, claims that were later proven dangerously misleading [5].

This widespread and unchecked prescribing led to a dramatic increase in opioid availability, misuse, and addiction. Between 1999 and 2010, the United States experienced a sharp rise in opioid-related morbidity and mortality. More than 630,000 individuals died from drug overdoses during this period, with prescription opioids accounting for a substantial portion of these deaths. What began as a medical approach to managing pain quickly evolved into a nationwide public health crisis (Fig. 1) [6].

In response, federal and state governments implemented a series of regulatory and public health measures aimed at curbing opioid misuse. These included rescheduling certain opioids to restrict access, enhancing prescription drug monitoring programs (PDMPs), issuing new clinical guidelines for pain management, and increasing public awareness about the risks of opioid use. Despite these efforts, the crisis has persisted and evolved, shifting from prescription opioids to heroin and, more recently, to highly potent synthetic opioids such as fentanyl [7-9].

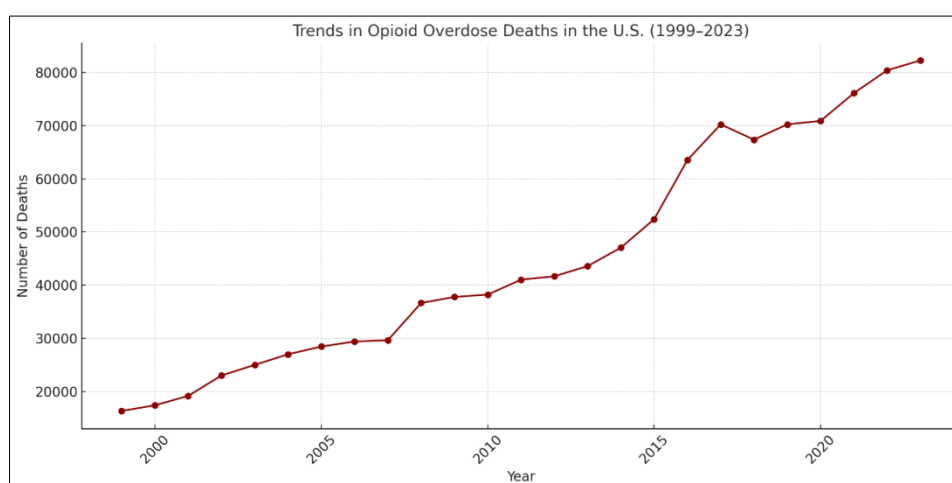


Figure 1: Line graph showing the trends in opioid overdose Deaths in the U.S. from 1999 to 2023. It visually demonstrates the steep rise in mortality, particularly after 2013, with a sharp peak due to synthetic opioids like fentanyl

3. Are Dentists Really Contributing to the Opioid Crisis?

The question of whether general dentists are genuinely contributing to the opioid epidemic is critical, especially in the context of identifying and addressing

modifiable risk factors in healthcare. While the origins of many public health crises can be obscured by complexity or ambiguity, mounting evidence clearly implicates dental opioid prescribing as a notable, if

unintentional, contributor to opioid misuse in the United States.

According to the *Journal of the American Dental Association*, an estimated 23% of opioid doses prescribed by dentists are used nonmedically, meaning that nearly 1 in 5 patients may misuse dental opioids to achieve euphoric effects rather than for legitimate pain relief. This statistic is especially concerning given the context of the ongoing epidemic and its documented social and clinical consequences [10].

Further evidence highlights the risks associated with routine dental prescribing. For instance, the *Australian Prescriber* has reported that a pre-filled opioid prescription given for third molar (wisdom tooth) extraction is an independent risk factor for the development of persistent opioid use. This reinforces a critical truth: while opioids are undoubtedly effective for managing acute pain, their use, even in short courses, can increase a patient's vulnerability to long-term dependence [11].

Importantly, this is not to imply that dentists are prescribing irresponsibly or without clinical justification. In many cases, patients genuinely require pharmacologic pain control following invasive procedures, and opioids can offer significant relief. However, dentists may inadvertently become targets of "doctor shopping," a phenomenon in which drug-seeking individuals visit multiple healthcare providers under false pretences to obtain controlled substances. Given the subjective nature of pain, dentists must often rely solely on patient-reported symptoms, making it challenging to differentiate legitimate pain from deceptive requests [11].

Commonly prescribed dental opioids, such as codeine, oxycodone, and tramadol, are among the most frequently misused pharmaceutical agents in the U.S. This reality underscores the urgent need for heightened awareness and discernment in dental prescribing. Dentists must recognize that not all patients truly require opioids, and that indiscriminate prescribing may carry unintended but serious consequences for both individuals and society.

Ultimately, the dental profession bears a shared responsibility in addressing the opioid epidemic. Through enhanced prescribing vigilance, greater reliance on non-opioid alternatives, and increased patient education, dentists can take meaningful steps to reduce opioid misuse while still ensuring adequate pain management.

4. Current Guidelines and Recommendations

In response to the growing opioid epidemic, various organizations and regulatory bodies have issued

evidence-based guidelines to help dental professionals prescribe opioids more responsibly. These recommendations emphasize the need to limit opioid use, prioritize non-opioid therapies, and incorporate tools that monitor and prevent prescription misuse.

4.1 American Dental Association (ADA) Guidelines

The ADA has taken a firm stance against unnecessary opioid prescribing. In 2018, the ADA issued a policy statement advocating that dentists should "consider nonsteroidal anti-inflammatory analgesics (NSAIDs) as the first-line therapy for acute pain management". The ADA also supports statutory limits on opioid dosage and duration and strongly encourages continuing education on opioid prescribing for all practising dentists [12].

4.2 CDC Recommendations

While the CDC primarily issues guidelines for primary care providers, its 2022 clinical practice guideline for prescribing opioids is relevant across disciplines. The CDC advises using the lowest effective dosage of immediate-release opioids for the shortest duration possible, typically no more than three days for acute pain, and discourages long-term opioid therapy for non-cancer pain [13]. Dentists are urged to assess risk factors for misuse and to educate patients on safe use, storage, and disposal of opioids.

4.3 State-Level Prescription Drug Monitoring Programs (PDMPs)

Most U.S. states have established Prescription Drug Monitoring Programs (PDMPs), state-run electronic databases that track the prescribing and dispensing of controlled substances. PDMPs help identify patterns of misuse, such as "doctor shopping," and allow dentists to verify a patient's opioid history before prescribing. Many states now require dentists to consult the PDMP prior to issuing opioid prescriptions [14].

4.4 Dosage Limits, Prescription Durations, and Non-Opioid First-Line Therapies

A growing number of states have enacted legislation limiting the maximum opioid dosage and duration for acute pain. Common restrictions include limiting initial prescriptions to three to seven days and capping total morphine milligram equivalents (MME). These laws align with both ADA and CDC recommendations. Emphasis is increasingly placed on non-opioid pharmacologic strategies, such as ibuprofen and acetaminophen combinations, as first-line therapies, even for procedures traditionally associated with moderate to severe pain, such as third molar extractions [15, 16]. Together, these evolving policies form a cohesive framework for safer prescribing in dentistry, promoting both effective pain control and public health responsibility (Table 1).

Table 1: Summary of Key Guidelines on Dental Opioid Prescribing

Organization	Recommendation	Year	Notes
ADA	NSAIDs first-line	2018	Continuing education encouraged
CDC	Short-term only, ≤3 days	2022	Risk assessment mandatory
State PDMPs	Mandatory checks	Varies	Reduce doctor shopping

5. Non-Opioid Alternatives for Pain Management

A central strategy in reducing opioid dependence and misuse in dentistry is the expanded use of non-opioid alternatives for managing post-operative pain. Evidence increasingly supports the efficacy of these options, particularly in treating acute dental pain without the risks associated with opioids.

5.1 NSAIDs and Acetaminophen Combinations

Numerous clinical trials have demonstrated that the combination of NSAIDs (e.g., ibuprofen) and acetaminophen offers superior analgesic efficacy compared to opioid-based regimens for acute dental pain. This combination reduces inflammation and modulates central pain perception, providing synergistic relief. In fact, the landmark systematic review by Moore *et al.*, (2018), published in *JADA*, concluded that ibuprofen (400 mg) plus acetaminophen (1,000 mg) outperformed commonly prescribed opioids such as codeine and oxycodone in managing post-extraction pain, with fewer adverse effects (Table 2), (Figure 2) [15].

5.2 Long-Acting Local Anesthetics

Another effective non-opioid strategy involves the use of long-acting local anesthetics such as bupivacaine or liposomal formulations of bupivacaine, which can extend postoperative analgesia for up to 72 hours. These agents can significantly reduce the need for

systemic analgesics in the early postoperative period, particularly after procedures such as surgical extractions and implant placements [16].

5.3 Patient Counselling and Realistic Pain Expectations

Effective communication with patients plays a crucial role in minimizing opioid use. Dentists should educate patients on expected levels of discomfort, the duration of pain, and the effectiveness of non-opioid analgesics. By setting realistic expectations and discussing pain management plans in advance, clinicians can reduce anxiety-driven demands for stronger medications and improve adherence to safer regimens [17].

5.4 Evidence-Based Comparisons

The growing body of literature comparing opioid and non-opioid options consistently favors non-opioid strategies for most dental indications. In addition to the Moore *et al.*, review, multiple randomized controlled trials and meta-analyses have confirmed that NSAID-acetaminophen regimens provide comparable or superior pain relief with fewer risks of sedation, gastrointestinal upset, or addiction potential [15, 16]. By integrating these alternatives into routine practice, dentists can uphold the standard of care while actively contributing to national efforts to combat opioid misuse.

Table 2: Common Dental Procedures and Recommended Analgesic Protocols

Procedure	Recommended Pain Management	Opioid Use Justified?
Third molar extraction	Ibuprofen + Acetaminophen	Rarely
Root canal therapy	NSAIDs alone	No
Implant placement	Long-acting local + NSAIDs	Maybe for severe cases

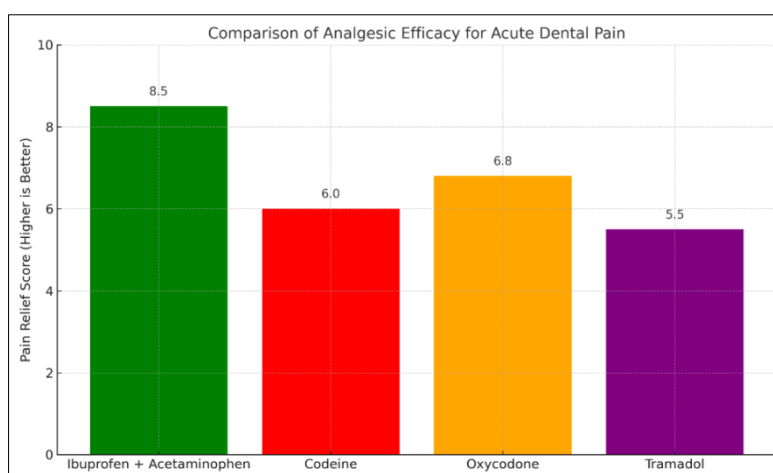


Figure 2: Bar graph comparing the analgesic efficacy of common medications for acute dental pain. It clearly shows that Ibuprofen + Acetaminophen provides superior pain relief compared to opioids like Codeine, Oxycodone, and Tramadol, aligning with findings from Moore *et al.*, (JADA, 2018)

6. Patient Education and Communication

One of the critical roles general dentists play in addressing the opioid crisis is through effective patient education and communication. Before initiating treatment, it is essential to discuss realistic pain expectations with patients. Studies have shown that when patients are counselled about the likely duration and intensity of postoperative pain, they are more likely to accept non-opioid alternatives and avoid misuse of prescribed medication [15].

Avoiding automatic refills is another effective measure. Automatic refills can lead to unnecessary accumulation of opioids at home, increasing the risk of diversion, misuse, or accidental ingestion by others. Dentists should provide only the necessary quantity of medication, with no refills unless reassessment justifies it [18].

Furthermore, dentists must be trained to recognize red flags for opioid misuse or diversion. Indicators such as frequent requests for early refills, claims of lost prescriptions, or exaggerated reports of pain should prompt further evaluation or referral to a pain specialist or addiction services. Empathetic but firm communication is essential in these situations to protect both patient safety and public health.

7. Continuing Education and Professional Responsibility

Ongoing CDE programs focused on opioid stewardship have proven beneficial in changing prescribing behaviors. States like Massachusetts and Pennsylvania now require opioid prescribing education for licensure renewal, setting a precedent for other states to follow [19].

Dental schools are also encouraged to incorporate pain management and substance use disorder education into their core curricula. This helps future dentists make evidence-based decisions and communicate effectively about pain management options. Beyond education, dentists carry legal and ethical responsibilities. They must adhere to state-specific prescribing laws and guidelines, maintain thorough documentation, and ensure informed consent before initiating opioid therapy. Ethically, dentists are responsible for balancing adequate pain relief with minimizing risk of addiction or misuse.

8. Future Directions

To curb the opioid crisis effectively, future efforts must focus on evidence-based strategies tailored to dental settings. One critical area is the need for more research on dental opioid prescribing outcomes, particularly in understanding long-term patient use, addiction risks, and the effectiveness of non-opioid regimens post dental procedures. Current literature on this topic is limited and often extrapolated from general

medicine, underlining the necessity for dental-specific clinical trials and cohort studies [20].

Additionally, the integration of decision support tools into dental electronic health records (EHRs) can enhance safe prescribing practices. These tools can include real-time alerts for high-risk prescriptions, patient-specific opioid risk scores, and automatic Prescription Drug Monitoring Program (PDMP) checks. Such systems have shown promise in medical settings and should be adapted for dental use [21].

Expanding access to pain management specialists and creating interdisciplinary care models involving dentists, pharmacists, and pain medicine professionals could further reduce inappropriate opioid use. Referral networks and telerdentistry models can play a key role, especially in rural or underserved areas [22, 23].

9. CONCLUSION

General dentists play a pivotal role in addressing the opioid epidemic, especially given that dental prescriptions are a major source of first exposure to opioids in adolescents and young adults. With appropriate education, structured guidelines, and ethical vigilance, dentists can substantially reduce unnecessary opioid prescribing while still providing adequate pain management. A balanced approach is essential, one that ensures patient comfort without contributing to the broader public health crisis. This includes prioritizing non-opioid therapies, engaging in clear patient communication, and staying informed through continuing education.

Ultimately, it is a collective responsibility. The dental profession must commit to responsible prescribing, proactive patient education, and evidence-informed practice to play its part in mitigating this ongoing crisis.

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