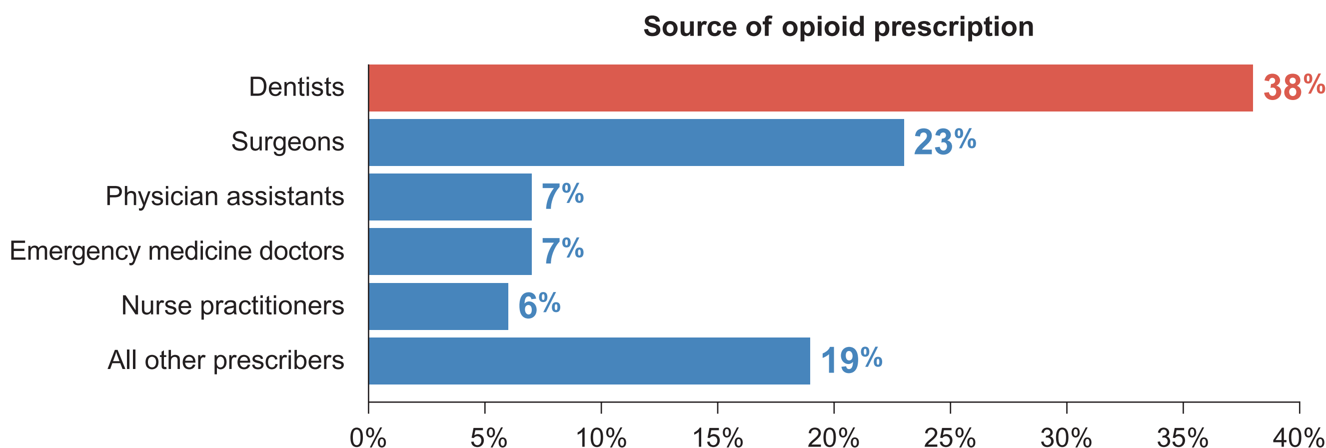
Getting to zero

Evidence-based pain management for dental extractions

In 2018, 45% of adults received an opioid following tooth extraction.[1]

In young adults, dentists are the leading prescribers of opioids.

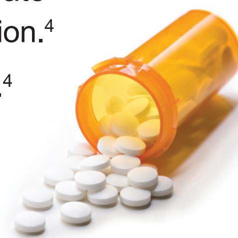
FIGURE 1. In 2019, dentists wrote more opioid prescriptions for children and young adults aged 0 to 21 than any other prescribers.[2]



80% of young adult patients are opioid naïve at the time of their tooth extraction, and half are prescribed opioids.[1,2]

Preventing a first exposure to opioids can reduce the risk of misuse and opioid use disorder for patients and communities.

- Less than 50% of opioids prescribed by dentists are consumed.[3]
- Dental patients who fill an opioid prescription have more than 2.5 times the rate of subsequent overdose compared to those who do not fill an opioid prescription.[4]
- More overdoses occurred in families in which an opioid prescription was filled.[4]
- Patients are 3 times more likely to have persistent opioid use if they fill a dental opioid prescription.[5]



Balanced information for better care

Pharmaceutical Assistance Contract for the Elderly

These are general recommendations only; specific clinical decisions should be made by the treating clinician based on an individual patient's clinical condition.

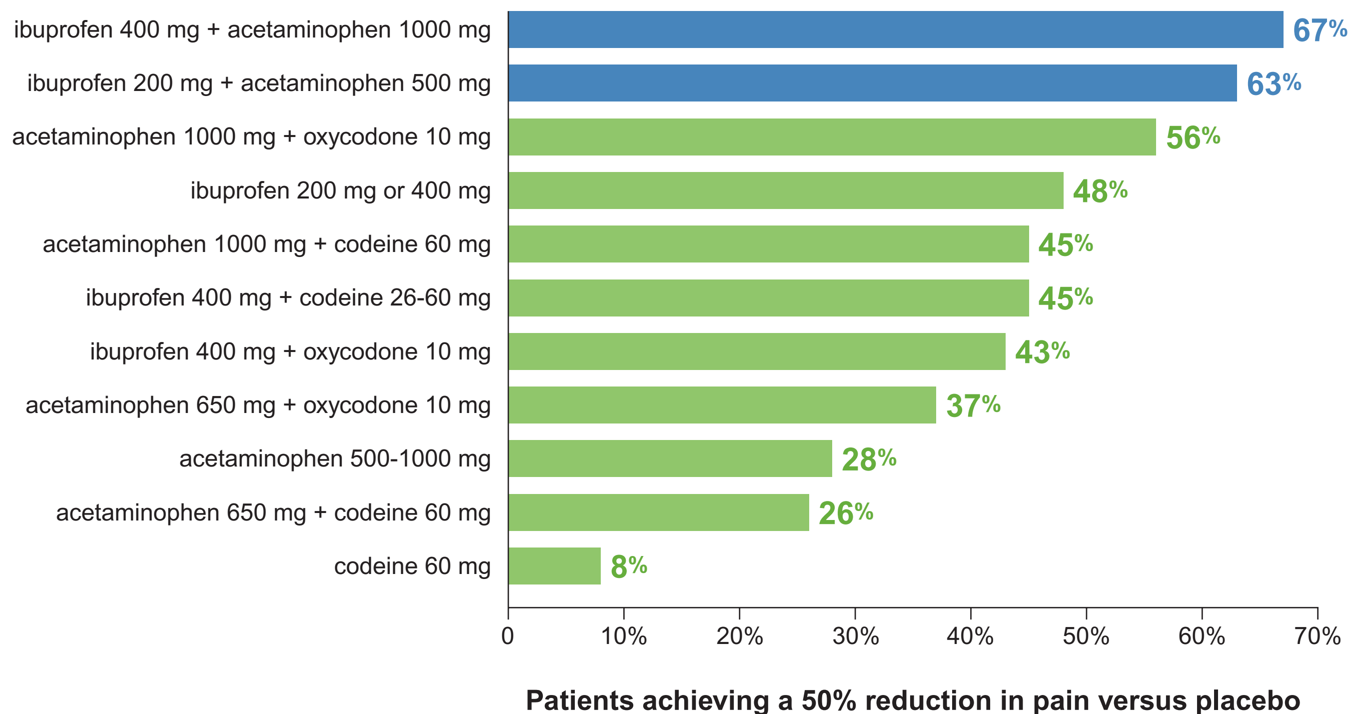
This material is supported by the PACE Program of the Pennsylvania Department of Aging and by the Pennsylvania Department of Health, through funding from the Centers for Disease Control and Prevention. We are grateful for consultation from the Michigan Opioid Prescriber Education Network (OPEN). This material is provided by Alosa Health, a nonprofit organization which is not affiliated with any pharmaceutical company.

Copyright 2022 by Alosa Health. All rights reserved.

An NSAID with acetaminophen works best

NSAIDs address inflammation, a key aspect of post-procedural pain, while opioids do not.

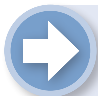
FIGURE 2. A meta-analysis of RCTs in acute dental pain found that a combination of ibuprofen with acetaminophen reduced pain more effectively than opioid monotherapy or combinations.[6]



An NSAID with acetaminophen also causes fewer side effects than opioids alone or in combination with other analgesics.

- Patients given opioids have more nausea, vomiting, constipation, and respiratory depression.
- NSAIDs such as ibuprofen can be used for short-term treatment (i.e., <10 days) in patients who may not be candidates for long-term NSAIDs. Avoid NSAIDs in patients with impaired renal function or NSAID-exacerbated respiratory disease.[7,8]

Patient satisfaction was similar for both opioid and non-opioid pain regimens after third molar extractions.[9]



Extractions generally do not require an opioid. Other options work better.

In exceptional cases, if an opioid is needed:

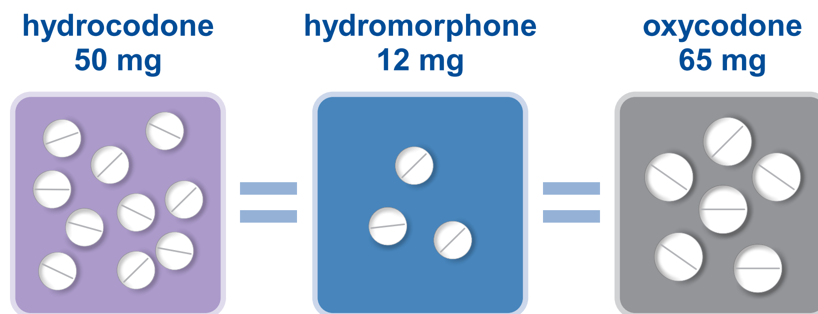
1. Establish a protocol for the management of pain.

2. Check your state's prescription drug monitoring program.
   - Determine if the patient is already receiving opioid medications.
   - Look for concurrent benzodiazepine use; it can increase the risk of respiratory depression and overdose.

3. Conduct a brief intervention to reduce the risk of opioid misuse.
   - An opioid misuse prevention program (OMPP) presented as a brief intervention just before an extraction can reduce opioid use.[10]

4. Limit the quantity prescribed to 3 days or less.

5. Cumulative opioid doses above 50 morphine milligram equivalents (MME) per day should be avoided in most patients, as these higher doses increase overdose risk.



6. Counsel patients on safe storage and disposal of opioids.

7. Recommend or co-prescribe naloxone.

8. Coordinate with other clinicians, especially if the patient may be at risk for opioid misuse.

Adhering to a protocol reduces opioid use and improves patient satisfaction

This protocol enabled one dental clinic to significantly reduce the number of tablets and morphine milligram equivalents (MMEs) of opioids prescribed.[11]

TABLE 1. Suggested analgesic regimens after tooth extraction by pain severity[11,12]

Type of pain	First 24-48 hours	Beyond 48 hours
Mild to moderate	ibuprofen 400-600 mg every 6 hours, *scheduled*	ibuprofen 400-600 mg every 6 hours, *as needed*
Moderate to severe	ibuprofen 400-800 mg every 6 hours, and acetaminophen 500 mg every 6 hours, *scheduled*	ibuprofen 400-800 mg every 6 hours, and acetaminophen 500 mg every 6 hours, *as needed*

If unable to tolerate an NSAID: Acetaminophen (650 mg or 1000 mg every 6 hours) can be used. Limit to 3 grams per day in older patients or those with liver disease; avoid in advanced cirrhosis. An opioid (e.g., hydrocodone) may occasionally be needed for severe pain. Severe pain not controlled by these regimens could indicate a complication requiring follow-up.

For more detailed information on prescribing guidelines: **www.dental.pitt.edu/prescribing-guidelines**

KEY POINTS

- **Dentists are still prominent prescribers of opioids, especially in young adults.**
- An NSAID with acetaminophen provides greater pain relief for common procedures with fewer side effects.
- Reducing opioid prescribing improves safety for the patient, family, and community.
- In rare situations in which opioids are needed, check the state Prescription Drug Monitoring Program database. Counsel patients on safe use and disposal.

This material was produced by Rachel Barenie, Pharm.D., J.D., M.P.H., Assistant Professor of Clinical Pharmacy and Translational Science at the University of Tennessee Health Science Center College of Pharmacy; Nathaniel Treister, D.M.Sc., D.M.D., Associate Professor of Oral Medicine, Infection, and Immunity at the Harvard School of Dental Medicine; William Feldman, M.D., D.Phil., M.P.H., Instructor in Medicine (principal editor); Benjamin N. Rome, M.D., M.P.H., Instructor in Medicine; and Jerry Avorn, M.D., Professor of Medicine, all at Harvard Medical School; Jennifer Corapi, Pharm.D., Pharmacist at Massachusetts General Hospital; and Ellen Dancel, Pharm.D., M.P.H., Director of Clinical Materials Development at Alosa Health. Drs. Avorn, Feldman, Rome, and Treister are at the Brigham and Women's Hospital. None of the authors accepts any personal compensation from any drug company.

REFERENCES: **(1)** Chua KP, et al. Opioid prescribing patterns by dental procedure among US publicly and privately insured patients, 2013 through 2018. *J Am Dent Assoc.* 2021;152(4):309-317. **(2)** Chua KP, et al. Opioid Prescribing to US Children and Young Adults in 2019. *Pediatrics.* 2021;148(3). **(3)** Maughan BC, et al. Unused opioid analgesics and drug disposal following outpatient dental surgery: A randomized controlled trial. *Drug Alcohol Depend.* 2016;168:328-334. **(4)** Chua KP, et al. Dental Opioid Prescriptions and Overdose Risk in Patients and Their Families. *Am J Prev Med.* 2021;61(2):165-173. **(5)** Chua KP, et al. Persistent Opioid Use Associated With Dental Opioid Prescriptions Among Publicly and Privately Insured US Patients, 2014 to 2018. *JAMA Netw Open.* 2021;4(4):e216464. **(6)** Moore PA, et al. Benefits and harms associated with analgesic medications used in the management of acute dental pain: An overview of systematic reviews. *J Am Dent Assoc.* 2018;149(4):256-265.e253. **(7)** Aminoshariae A, et al. Short-term use of nonsteroidal anti-inflammatory drugs and adverse effects: An updated systematic review. *J Am Dent Assoc.* 2016;147(2):98-110. **(8)** Daniels SE, et al. A randomised, five-parallel-group, placebo-controlled trial comparing the efficacy and tolerability of analgesic combinations including a novel single-tablet combination of ibuprofen/paracetamol for postoperative dental pain. *Pain.* 2011;152(3):632-642. **(9)** Nalliah RP, et al. Association of Opioid Use With Pain and Satisfaction After Dental Extraction. *JAMA Netw Open.* 2020;3(3):e200901. **(10)** Derefinko KJ, Salgado García FI, Johnson KC, et al. A randomized pilot program to reduce opioid use following dental surgery and increase safe medication return. *Addict Behav.* 2020;102:106190. **(11)** Tompach PC, et al. Investigation of an Opioid Prescribing Protocol After Third Molar Extraction Procedures. *J Oral Maxillofac Surg.* 2019;77(4):705-714. **(12)** Moore PA, Hersh EV. Combining ibuprofen and acetaminophen for acute pain management after third-molar extractions: translating clinical research to dental practice. *J Am Dent Assoc.* 2013;144(8):898-908.

Apr 2022