

The Dental Professional's Role in the Opioid Crisis



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Disclaimer: Participants must always be aware of the hazards of using limited knowledge in integrating new techniques or procedures into their practice. Only sound evidence-based dentistry should be used in patient therapy.

Conflict of Interest Disclosure Statement

- Dr. Geisinger reports no conflicts of interest associated with this course. She has no relevant financial relationships to disclose.
- Dr. Guzman reports no conflicts of interest associated with this course. He has no relevant financial relationships to disclose.

Short Description

The Dental Professional's Role in the Opioid Crisis is a free dental continuing education course that covers a wide range of topics relevant to the oral healthcare professional community.

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Overview

This course seeks to improve understanding of the role dental healthcare providers can play in the prevention of opioid abuse. It will review the current evidence on best practices for analgesic prescribing for acute and post-operative discomfort. The course provides dental professionals tools to critically assess the individualized needs of their patients who may suffer from substance abuse, and resources to allow referral of those patients to resources to help treat their addictions.

Learning Objectives

Upon completion of this course, the dental professional should be able to:

- Understand the current evidence-based consensus recommendations about

prescribing patterns for acute and post-operative dental pain and the comparative effectiveness of opioid and non-steroidal anti-inflammatory drug analgesics for dental pain.

- Review current dental and medical opioid prescribing patterns in the United States and throughout the world.
- Evaluate patients' risk factors and treatment needs based upon individualized patient needs and overall substance abuse risk.
- Recognize signs of substance abuse disorder in patients.
- Enable better identification of individuals with substance abuse disorders and be aware of referral services for treatment.
- Be an active participant in an interdisciplinary team of health care providers in educating patients and colleagues about changes to prescribing patterns that may decrease exposure and substance abuse.

Background

Opioid overdoses and deaths related to opioid abuse continue to climb. In 2023, 81,083 Americans were reported to have died from opioid overdoses (78.7% of all US drug overdoses).¹ This was a substantial rise from 21,088 in 2010.¹ In 2022, the Surgeon General of the United States, Dr. Vivek Murphy recommended that all at-risk individuals and friends and family members of such individuals keep the life-saving reversal drug, naloxone on hand to be utilized in the event of an overdose.² In February 2018, the American Dental Association (ADA) released updated recommendations for using opioids for dental pain and reaffirmed the use of non-steroidal anti-inflammatory (NSAID) analgesics as first-line therapy for acute pain management.³ There is also data that sheds light on vulnerable populations, including children and teenagers, for whom exposure to opioids may be particularly damaging.^{4,5} Dentists are responsible for prescribing an estimated 23% of all opioid prescriptions for children and 9% of all opioid prescriptions dispensed overall.^{6,7} These prescribing rates make dentists the second-largest group of medical specialists who prescribe opioid medications.⁷ Further, patients report not using 54% of

opioids prescribed during dental surgery.⁸ Opioids that are not used in the initial prescription may be stored and diverted for non-prescription usage. Despite the volume of opioid prescriptions written by dentists, research suggests that dentists have not fully adopted recommended risk mitigation strategies, including screening for prescription drug abuse or misuse, verifying current and past prescriptions using state prescription drug monitoring programs, and providing patient education on safe use, storage, and disposal of medications when prescribing opioid medications for pain management.^{9,10}

Introduction

In the roughly three hours it will take to complete this course, approximately ten Americans will die of an opioid overdose.¹¹ The annual cost associated with the opioid epidemic to the American economy, including healthcare costs, lost productivity, criminal justice expenses, and treatment costs, were estimated to be \$1.5 Trillion in 2020.¹² Dentists represent approximately 9% of the opioid prescriptions written^{6,7} and approximately one-third of all prescriptions written by dentists are for opioid pain medications.¹³ Even short-term prescriptions for acute pain may not be innocuous.⁵ Six percent of adults prescribed at least 1 day of opioids will continue to use them 1 year later; 2.9% will continue to use them 3 years later.¹⁴ Early use (before the age of 15 years) of any substance of abuse is associated with a 550% increase in the risk of subsequent substance use disorder (28.1% vs 4.3%),¹⁵ and even the legitimate use of prescription opioids by children before the 12th grade (17-18 years of age) increases the risk of future opioid misuse by 33%.¹⁶ Nearly half of dentists report never having accessed the prescription drug monitoring program (PDMP),¹⁷ although rates of use of PDMP are on the rise and recommendations from dental organizations and state provider mandates for PDMP use have been shown to improve utilization.^{18,19} Given the role dentists play in the prescription of opioid medications, it is critical that dental healthcare professionals understand the critical role that they can play in mitigating the risks associated with opioid medications.

The Opioid Epidemic as a Public Health Crisis

Opioids are a class of drugs that include the illicit drug heroin and legal prescription analgesics oxycodone, hydrocodone, codeine, morphine, fentanyl, and others.²⁰ Opioids interact with opioid receptors in the central nervous system and brain to produce pleasure and reduce pain and have a high rate of misuse and abuse.²⁰ Substance abuse disorder is a primary, chronic, and relapsing brain disease characterized by the pathologic pursuit of reward and/or relief by substance abuse.²¹ Drug misuse is defined as the use of medications for purposes for which they were not prescribed.²² Roughly 21 to 29% of patients prescribed opioids for chronic pain misuse them²³ and between 8 and 12% develop an opioid use disorder.²⁴⁻²⁶ An estimated 4 to 6% who misuse prescription opioids transition to heroin abuse.²⁴⁻²⁶ This is a major shift the method of introduction to heroin for abusers. In 1960, 80% patients entering treatment for heroin reported that heroin was the first opioid drug that they had abused, whereas in the 2000s, 75% of individuals seeking treatment for heroin addiction reported that their first opioid was a prescription drug.²⁵ This has led to an overwhelming epidemic of opioid abuse that resulted in up to 136 overdose deaths each day in 2019.¹ A concomitant increase in neonatal abstinence syndrome due to opioid use during pregnancy²⁷ and HIV and hepatitis C rates due to intravenous drug abuse,^{28,29} are some of the additional public health crises associated with this epidemic.

The Development of an Opioid Epidemic

Heroin was first marketed in the United States by Bayer Drug in 1898 as a “wonder drug” for pain relief and cough suppression, among cures for other maladies.³⁰ As it became more widely used, its side effects were also noted with more frequency. In 1914, the Harrison Narcotics Tax Act imposed a tax on those making, importing or selling any derivative of opium or coca leaves.³¹ By the 1920s, doctors were aware of the highly addictive nature of opioids and tried to avoid treating patients with them. Heroin became illegal in the United States in 1924.³²

Three Waves of Opioid Overdose Deaths

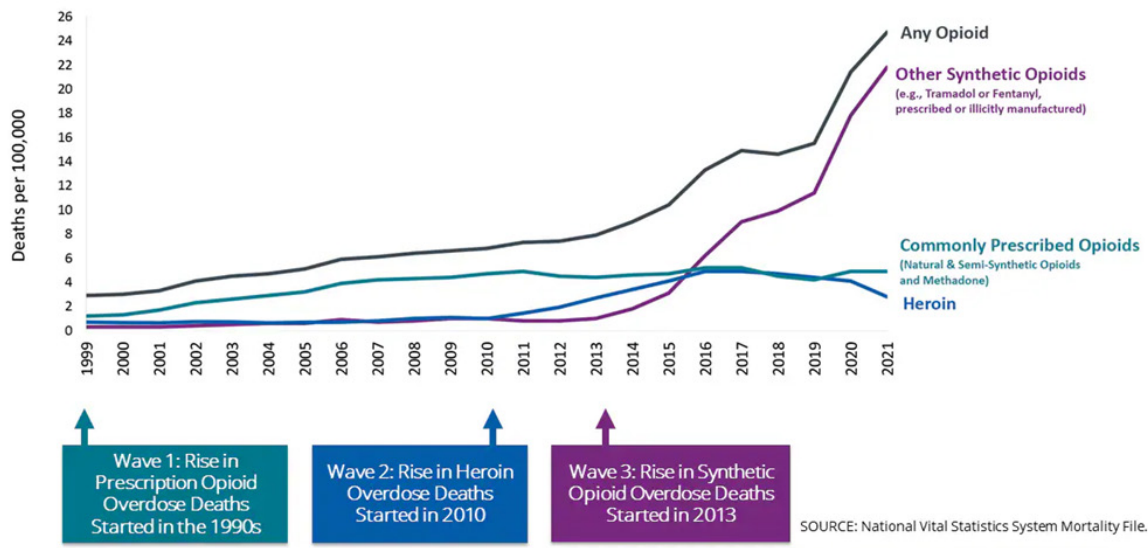


Figure 1. Increase in Opioid Overdose Deaths in the United States.¹⁰⁸

While some illegal heroin use continued in the United States after it was outlawed, legal synthetic opioids, including Percocet (Endo Pharmaceuticals, Inc.; Malvern, PA) and Vicodin (AbbVie, Inc.; North Chicago, IL) were introduced to the market in the 1970s. However, prescribing of these medications was judicious with doctors wary of the addictive nature of opioid medications³³ In January 1980 a letter was printed in the *New England Journal of Medicine* stating that in an analysis of 11,882 patients treated with narcotic medication, “the development of addiction was rare in medical patients with no history of addiction.”³⁴ In 1986 a study of 38 patients treated with chronic opioid analgesics for non-malignant pain concluded that, “opioid maintenance therapy can be a safe, salutary, and more human alternative to the options of surgery or no treatment in those patients with intractable non-malignant pain and no history of drug abuse.”³⁵ These and other studies shifted a focus onto pain as the “fifth vital sign” in the 1990s.³⁶⁻³⁸ The cited impetus for this change was summarized in November 1996 by James Campbell, MD in his presidential address to the American Pain Society, “...vital signs are taken seriously...if

pain were assessed with the same zeal as other vital signs are, it would have a much better chance of being treated properly.”³⁹ In 2001 the Joint Commission, a medical accrediting and standards body, released a statement requiring pain to be assessed in all patients receiving care in accredited hospitals.⁴⁰ While this requirement was removed in 2009, the focus on identification and elimination of pain saw an accompanying increase in prescriptions for opioid medications.⁴¹

From 1999 to 2008, overdose death rates, prescription opioid sales, and substance use disorder treatment admissions related to prescription pain relievers increased proportionally. The overdose death rate increased four-fold from 1999 to 2008; sales of prescription opioid analgesics in 2010 were four times those in 1999; admissions for substance abuse disorder treatment increased six-fold from 1999 to 2009.⁴² As the addictive potential of many of the synthetic prescription medications became known, doctors began to decrease the number of prescriptions they wrote. In 2007, the manufacturer of OxyContin (Purdue Pharma, Inc.; Stamford, CT) and three senior executives pleaded guilty to federal

criminal charges that they misled regulators, doctors, and patients about the risk of addiction associated with the drug.⁴³ Further, in 2021 the Sackler family who owned Perdue Pharma agreed to pay a \$4.3 billion settlement and forfeit ownership in the company, but were also granted protection from future liability lawsuits regarding the harm caused by OxyContin and other opioids.⁴⁴

A 2012 letter in the *New England Journal of Medicine* demonstrated that tamper-resistant features added to OxyContin medication intended to decrease the ability of individuals to crush the medication and circumvent the extended release coating, led to a decrease in abuse of that drug, but nearly two-thirds of respondents switched to other opioids.⁴⁵ In 2014, 94% of respondents to a survey of individuals receiving treatment for opioid addiction stated that they chose to use heroin because prescription opioid medications were “far more expensive and harder to obtain.”⁴⁶ In fact, four in five new heroin users began misusing prescription opioid analgesics prior to initiation of heroin use.⁴⁷ In 2017, it was noted that the initial 11-line letter to the editor in of the *New England Journal of Medicine* in 1980 had been cited 608 times, 72.2% of which used it as evidence that addiction was rare in patients treated with opioids.⁴⁸ The authors conclude, “that a five-sentence letter published in the *Journal* in 1980 was heavily and uncritically cited that addiction was rare with long-term opioid therapy. We believe that this citation pattern contributed to the North American opioid crisis by helping shape a narrative that allayed prescribers’ concerns about the risk of addiction associated with long-term opioid therapy.”⁴⁸

Comparative Opioid Abuse Rates in the United States and Abroad

The Centers for Disease Control and Prevention (CDC) report that opioid prescription rates in the US have been declining from a high in 2012 of approximately 255 million prescriptions to approximately 132 million prescriptions written in 2022.⁴⁹ This amounts to an average of 39.5 prescriptions for every 100 US adults. It should also be noted that prescribing rates vary across states with a range from 24.3 prescriptions

per 100 adults (Hawaii) to 74.5 prescriptions per 100 adults (Alabama).⁴⁹ Additionally, while the vast majority of US providers have been found to follow CDC guidelines for prescribing narcotic medication, approximately 1% of prescribers are responsible for over half of the opioid doses prescribed and one-quarter of the opioid prescriptions written, a pattern that has remained stable for a decade.⁵⁰ Compared to their global counterparts, providers in the US prescribe opioids more frequently, at higher doses, and throughout more stages of post-operative and pain treatment—including as first-line treatment—than their international counterparts. For instance, in 2016 US dentists were 37-times more likely to prescribe opioids than dentists in the UK.⁵¹ Use of higher-potency opioids is markedly elevated in the US compared with other countries, despite the fact that nearly all published clinical guidelines discourage the use of high-potency opioids, and in fact opioids at all, as first-line non-cancer pain treatment.⁵²

Several explanations for these differences in prescribing patterns may be at play. Pain perception and the attitudes of healthcare providers towards pain varies widely between cultures. Americans are more likely than their European or Asian counterparts to view pain as a malady rather than a natural consequence of aging or injury.⁵³⁻⁵⁶ Regulatory controls and healthcare provider oversight also differs greatly between countries. In the U.S. much of the regulation is performed at the state rather than the Federal level, which may afford more variation and less tight control.^{57,58} The United States and New Zealand are also the only countries that allow prescription drugs to be advertised on television, which may create a consumer-driven approach to prescribing patterns with patients requesting and, in many cases, receiving drugs that they have seen in advertisements.⁵⁹ While opioid prescription advertisements are generally not seen on television, the 2016 Super Bowl featured an ad for a drug designed to combat opioid-induced constipation, which drew ire from Physicians for Responsible Opioid Prescribing and the White House.⁶⁰ Finally, differences in how healthcare is delivered and reimbursed lead to differences in how patients are treated

when they present with pain, a multifactorial symptom which can reveal and relate to many underlying ailments. The average primary care physician or healthcare provider in the U.S. spends around 15 minutes with each patient and covers an average of six topics in that time frame.^{61,62} This may not be enough time to fully assess a patients' condition, underlying contributory factors, and may contribute to a less holistic approach to pain control.

Prescribing Patterns for Opioid Pain Relievers

While healthcare providers in the United States have decreased their opioid prescribing since its peak in 2012, physician-prescribed opioids are still higher in the US than in other countries around the world.^{49,51} Further, opioid prescribing patterns vary widely among states and regions, with greater decreases in opioid prescribing associated with introduction of state laws that mandate prescriber training and use of the PDMP, among other factors.^{49,63} The contributions of dental opioid prescriptions to this number is substantial. Five procedures account for 95% of dental opioid prescription with tooth extraction accounting for two-thirds of opioid prescriptions by dental healthcare providers.⁶⁴ Opioid prescribing for tooth extractions is declining but remains common even though non-opioids are effective analgesics.⁶⁴ It should be noted that a marked decrease in opioid prescriptions has been noted in dental settings after 2016, when updated prescribing recommendations and guidelines were published by the American Dental Association and other entities.⁶⁵⁻⁶⁷ This development is encouraging and indicates that education and processes can improve prescribing patterns and reduce high-risk prescribing. It has also been suggested that prompts within the electronic health records may further reduce high-risk prescribing by identifying patients with opioid misuse risk factors and automatically notifying prescribers if they write an opioid prescription.⁶⁸

Focus has been put over the last few years on identifying high-risk populations for future misuse after initial opioid prescriptions. It has been established that adolescents are particularly vulnerable to future risk of opioid

misuse and these patients have a high risk to be exposed to opioids as a prescription after dental care.¹⁴⁻¹⁶ It is estimated that 61% of 14- to 17-year-olds receive opioid prescriptions from dentists following extraction of third molars.¹⁶ This is particularly concerning given the body of literature that associates age of first exposure to opioids to an increased risk of nonmedical use, misuse, and substance abuse of opioids in patients.⁴ Among high school seniors, 36.9% of nonmedical users of prescription opioids used the drugs from their previous prescriptions and 27% of those prescriptions were written by dentists.^{4,69} Non-medical use of opioids in adolescents and young adults parallels the prescribing rates for these medications, with male non-medical users having higher peer-to-peer diversion rates and rates of non-pain relief (recreational) use.⁴ Younger adults (18-25 years) have higher rates of opioid misuse (8.1%) than older adults (2.0%), despite more opioid prescriptions being written for older individuals.⁷⁰ Further, in adolescents predictors of prolonged opioid use after surgery and potential misuse included duration of opioid prescriptions, daily MME of opioid prescriptions, as well as indicators of socio-economic status.⁵ These factors may indicate that younger people are more vulnerable to opioid misuse and additional care should be given to opioid prescribing in that group.

Evidence-based Comparisons of Opioid and NSAID Analgesics for Post-operative Dental Pain

Safe and effective pain management is an essential goal of compassionate, responsible dental care. While opioid prescriptions to control pain associated with dental visits are common place, studies have shown that non-steroidal, anti-inflammatory drugs (NSAIDs) are effective in managing pain with significantly fewer adverse effects compared with opioid pain medication.⁷¹⁻⁷³ A recent study demonstrated that the combination of acetaminophen and ibuprofen taken at regular intervals has proven to be more effective than opioids with fewer adverse effects following third-molar extractions.⁷⁴ It has also been noted that pre-emptive

and preventative NSAIDs can reduce both patient pain perception and post-operative opioid consumption.⁷⁵ In particular, minor and outpatient surgical procedures demonstrated more benefit to pre-emptive NSAID delivery.⁷⁵ Given these findings, it has been established that opioid pain medications should not be considered first-line therapy for dental pain.⁷⁶ Preprocedural dosing with NSAIDs and utilization of optimal dosages of NSAIDs at regular time intervals has been proven effective for pain management without many of the adverse side effects seen with opioid medications.^{75,77} Opioids may be considered if pain persists after optimal NSAID dosages have been achieved.^{77,78}

The Dental Healthcare Professional's Role in Substance Abuse Prevention

Managing dental pain associated with dental procedures and/or dentoalveolar conditions is a critical part of proper patient management. As a profession, it is critical that we are addressing patients' discomfort, but also that we are cognizant to reduce harm and risk of substance misuse. Recent reviews have assessed optimal prescribing patterns, including the use of NSAID pain relievers as first-line analgesics.³

For acute pain, including that often encountered in the dental office due to infection or trauma following invasive dental procedures, limiting prescription of opioid dosage and duration to no more than seven days is recommended by the Centers for Disease Control and Prevention and the ADA.^{79,80}

Best Practices for Opioid Prescribing

While best practices state that the use of opioids as first-line agents for acute pain is not preferable,³ dentists continue to prescribe considerable amounts of opioids, with dentists who saw patients for single visits and/or patients seeking emergent care being more likely to prescribe opioids than other practitioners.¹⁰ While after state regulations and ADA recommendations for dentists to use the PDMP has resulted in an increase in PDMP utilization by dentists, dentists continue report a lower than

optimal rate of accessing the prescription drug monitoring program (PDMP),^{9,10,81} despite being available in all states.^{82,83} While 50 states require prescriber registration with PDMP, the requirements for use vary state-by-state.^{82,83} Interestingly, mandatory use of the PDMP system for controlled substance prescriptions is associated with a 78% decrease in opioid prescription rates and an increase in the use of non-opioid analgesics.⁸⁴ Currently all 50 states, the District of Columbia, Puerto Rico and Guam have operational PDMP systems.⁸⁵ A variety of drug schedules are collected in each state's PDMP and most states allow practitioners and pharmacists to obtain PDMP records for patients under their care.⁸⁶ The status of your state's PDMP and access information specific to your area can be found at the [PDMP TTAC website](#).

While federal law does not limit the quantity or duration of opioid prescriptions, the Controlled Substances Act (CSA) does identify the following as indicators of a valid rationale for prescribing a controlled substance:

- A legitimate medical purpose exists for the use of the controlled substance.
- The prescription is issued in the usual course of professional practice.
- The prescriber takes reasonable measures to prevent abuse and diversion as part of daily routine practice.^{87,88}

Healthcare providers may also be held accountable by noncriminal sanctions. A review of medical malpractice claims from 2005-2008 indicated that the following forms of inappropriate medication management by physicians were more common:

- Inadequate communication with other prescribing physicians to coordinate the care plan.
- Failure to recognize signs of medication misuse and/or prescribing controlled substances inappropriately to individuals with known pre-existing substance abuse disorders.
- Prescribing inappropriately high doses of opioids.
- Inappropriate sexual relations with patients.⁸⁹

In addition, there is the possibility of criminal liability. 2015 Dr. Hsiu-Ying “Lisa” Tseng became the first doctor convicted of murder for overprescribing opioid analgesics and the US Drug Enforcement Agency took action related to prescribing patterns against 479 doctors in 2016, up from 88 in 2011.^{90,91} While these high-profile cases may make national news, Dr. Andrew Kolodny, executive director of Physician for Responsible Opioid Prescribing has stated, “The well-meaning doctors and dentists are the bigger part of our problem. They are inadvertently getting patients addicted and they are also stocking homes with highly addictive drugs.”⁹⁰ It is imperative for dentists to demonstrate sound, ethical clinical judgement and provide adequate procedural and structural safeguards to mitigate risk to patients and liability for prescribers.

Recognition of At-risk Patients

Identification of patients who may be at-risk for diversion and/or misuse of medications is the responsibility of healthcare providers as part of caring for their patients. A complete history and physical, including assessment of alcohol, tobacco, prescription, history of current or chronic pain, history of mental health treatment, and illicit drug use allows a fuller picture of potential patient-related risk factors.^{17,92} The percentage of dentists assessing these conditions varies widely (Table 1) and may result in dental healthcare providers failing to identify patients at higher risk of opioid misuse.¹⁵ Dentists generally utilize written questionnaire for health screening, but a recent study found that these may be incomplete and not allow for comprehensive risk assessment.¹⁷ A verbal review of risk factors and health conditions associated with drug misuse and abuse can be conducted by members of the dental team to allow for individualized approaches to pain management in the dental office. Screening tools for identification of risk of opioid misuse/abuse have been identified, but the validity and predictive value of such screening tools is not yet known.⁹³⁻⁹⁵

Pre-procedural Counseling for Opioid Use, Abuse, and Disposal

While approximately half of dentists reported consistently counseling patients regarding the

potential side effects of opioid medications, significantly lower percentages consistently discussed nonmedical use (27%), secure storage (18%), and disposal of unused medications (13%).¹⁷ Patients are largely unaware of what may constitute misuse of medications, including sharing medications with friends or family members⁹⁶ and may also be unaware of the potential for diversion or misuse by others if they are stored or disposed of improperly.^{97,98} Approximately three-quarters of unused opioid prescriptions are stored in an unmonitored, unsecured location within the home, which can be a risk for diversion and misuse.⁹⁹ A study of young, urban injection drug users interviewed in 2008 and 2009 found that 89% had used opioid pain medications nonmedically prior to using heroin and that their initiation to nonmedical use came from three main sources of opioids: family, friends, or personal prescriptions.¹⁰¹ Educating patients with regard to their role in preventing the opioid crisis allows for a reduction in accessibility of prescription medications to vulnerable individuals. The National Institutes on Drug Abuse suggests that patients take these steps to ensure the security and safety of their prescription medications:

- Following the directions as explained on the label or by the pharmacist
- Being aware of potential interactions with other drugs as well as alcohol
- Never stopping or changing a dosing regimen without first discussing it with the doctor
- Never using another person’s prescription, and never giving their prescription medications to others
- Storing prescription stimulants, sedatives, and opioids safely¹⁰²

Additionally, patients should properly discard unused or expired medications by following **U.S. Food and Drug Administration (FDA) guidelines** or visiting U.S. Drug Enforcement Administration collection sites.¹⁰³

Standardization of patient education and the production of patient education materials discussing the risks of misuse of opioid prescriptions, once they have been deemed appropriate by the dental healthcare provider,

Table 1. Dentist Assessments of Various Health Conditions that can be Associated with Substance Misuse and Abuse Disorders.¹⁷

Assessment	n (%)
Current tobacco use	772 (94%)
Current alcohol use	620 (75%)
Current illicit drug use	570 (69%)
History of mental health treatment	592 (72%)
History of Or Current chronic pain	578 (70%)
History of substance abuse	520 (63%)
Current prescription drug abuse	431 (52%)
History of substance abuse treatment	427 (52%)

may help alleviate some of the risks associated with failure to properly secure medications by patients. Members of the dental team can be employed to conduct the screening and/or provide post-prescription education to patients in a verbal and/or written format.

Recognition and Referral for Individuals with Substance Abuse Disorders

In addition to reducing misuse and abuse of medications they prescribe, dental healthcare providers have the opportunity to screen for substance abuse disorder in their patients. For a screening tool to be used in a dental setting, it must be easy to interpret and not time-consuming or onerous to administer. A commonly used screening tool is the drug may be used with screening, brief intervention, and referral to treatment (SBIRT) as part of an evidence-based practice to identify, monitor, reduce and prevent problematic use and abuse of alcohol, illicit, and prescription medications (Figures 2-3).¹⁰⁴ The scoring rubric for this screening test also provides recommendations

that allow the treating dentist to provide interventions tailored to risk of substance use/abuse. These interventions may range from a brief (3-15 minute), patient-centered discussion employing Motivational Interviewing concepts designed to raise awareness of his/her substance abuse to facilitation of referral to drug treatment experts for in-depth assessment and, if necessary, treatment. Additionally, there are other tools for clinician screening for substance use and training modules available through the National Institute on Drug Abuse (NIDA) that allow for screening and interventions tailored to specific populations.¹⁰⁵

Prior to instituting a SBIRT program, the dental healthcare providers must identify and/or create a structure for the screening, intervention and referrals. Utilization of skilled dental team members as an integral part of the screening, counseling, and referral process for drug misuse and abuse allows dentists to reach more of their patients with critical screening tools and education. Consider these questions when implementing a program in your practice:¹⁰⁴

DRUG SCREENING QUESTIONNAIRE (DAST)

Using drugs can affect your health and some medications you may take.
Please help us provide you with the best medical care by answering the questions below.

Patient Name: _____
Date of Birth: _____

methamphetamines (speed, crystal) cocaine
 cannabis (marijuana, pot) narcotics (heroin, oxycodone, methadone, etc)
 inhalants (paint thinner, aerosol, glue) hallucinogens (LSD, mushrooms)
 tranquilizers (valium) other _____

1. Have you used drugs other than those required for medical reasons?	No	Yes
2. Do you abuse more than one drug at a time?	No	Yes
3. Are you unable to stop using drugs when you want to?	No	Yes
4. Have you ever had blackouts or flashbacks as a result of drug use?	No	Yes
5. Do you ever feel bad or guilty about your drug use?	No	Yes
6. Does your spouse (or parents) ever complain about your involvement with drugs?	No	Yes
7. Have you neglected your family because of your use of drugs?	No	Yes
8. Have you engaged in illegal activities in order to obtain drugs?	No	Yes
9. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	No	Yes
10. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)?	No	Yes

Have you ever injected drugs? Never Yes (past 90days) Yes (over 90 days ago)

Have you ever been in treatment for substance abuse? Never Currently In the past

Figure 2. DAST-10 Assessment Screening Questions.¹⁰⁴

SCORE	ZONE OF USE	INDICATED ACTION
0 1 - 2, plus the following criteria: No daily use of any substance; no weekly use of drugs other than cannabis; no injection drug use in the past 3 months; not currently in treatment.	I - Healthy (no risk of related health problems)	None
1 - 2 (without meeting criteria)	II - Risky (risk of health problems related to drug use)	Brief intervention
3 - 5	III - Harmful (risk of health problems related to drug use and a possible mild or moderate substance use disorder)	Brief intervention or Referral to specialized treatment
6+	IV - Severe (risk of health problems related to drug use and a possible moderate or severe substance use disorder)	Referral to specialized treatment

Figure 3. DAST-10 Score Risk Categories.¹⁰⁴

1. What screening and assessment tools will be used?
2. Will the same person provide screening, brief intervention, and referrals?
3. How will staff be trained, updated, and informed about the SBIRT protocols?
4. Should all patients be screened?
5. How often should patients be screened?
6. Will educational materials be distributed to patients? If so, which ones?
7. Where/how will patients needing further assistance be referred? What referral resources, if any, are currently used?
8. How will SBIRT results be documented?
9. Who will ensure compliance with SBIRT implementation including screening, intervention, and referral?
10. Will we bill for SBIRT screening and/or other services?

Sample Clinical Scenarios

Case 1:

Initial Presentation: A 65-year-old female presents with erosive lichen planus that was initially diagnosed 15 years prior and is associated with remitting and relapsing intraoral pain. She states she is currently having a “flare-up.” She reports a medical history significant for hypertension, insomnia, anxiety, and gastro-esophageal reflux disorder (GERD). She is partially edentulous and reports tooth loss due to decay and tooth fracture. She also reports a history of nocturnal bruxism. When PDMP data are queried, it demonstrates that she has had 44 prescriptions for controlled substances in the past year, including 20 opioids and 24 benzodiazepenes. The prescriptions were written by 5 different healthcare providers and filled at 3 pharmacies.

Action Plan: Further assess potential for misuse/abuse by identifying prescribers and area of practice and underlying control of her health conditions. Assess the patient for risk of self-harm and utilize motivational interviewing techniques to discuss her plans of action regarding her overall health and opioid use.

Conclusion: It was determined that all prescribers were in the same primary care practice and the pharmacies were close

to this practice, her work, and her home. During discussion, patient stated that she was using alcohol and opioids to treat underlying anxiety and depression and that she desired improved intervention, including pharmacological and behavioral therapy. Treatment of intraoral lesions with topical steroid therapy and local anesthetic medication as well as an intake diary to identify triggers was initiated and occlusal analysis and fabrication of an occlusal guard to reduce the incidence and harm from nocturnal bruxism was treatment planned.

Case 2

Initial Presentation: A 37-year-old female presents with a history of orthognathic surgery, temporomandibular joint pain, and high esthetic concerns regarding her anterior teeth. During consultation, she states that she “always needs something strong for pain” and that she cannot take hydrocodone, but has found that oxycodone has worked for previous dental appointments for crowns and veneers. Her PDMP query demonstrates 143 prescriptions within the past year, of which 92 were opioids, 27 benzodiazepines, and 24 anxiolytics. These prescriptions had been written by 42 prescribers, including 8 dentists and she had them filled at 23 pharmacies throughout the metropolitan area.

Action Plan: Inform patient of your findings and discuss your concerns about substance abuse as identified by overlapping prescriptions, request of specific medication, and the potential for doctor shopping (which implies a patient is going from one physician or dentist’s office to another to acquire multiple prescriptions for controlled substances to treat the same symptom).^{88,104} Offer to refer patient to a confidential drug treatment expert for evaluation and treatment in conjunction and consultation with her primary care physician.

Conclusion: Patient revealed during the discussion that she had a history of substance abuse disorder and was experiencing a recurrence. She received a referral for assessment and was eventually admitted for in-patient care.

Case 3

Initial Presentation: A 47-year-old man has a history of facial trauma in a motor vehicle accident approximately 10 years ago. He reports seeking care at a pain clinic for back and facial pain and receives physical therapy, steroid and anesthesia injections, along with monitoring and urinalysis at this clinic. He presents for a routine extraction of a tooth with a vertical root fracture and would like to discuss post-operative pain control given the medications he is currently taking. Upon receiving his report from the PDMP, he has received 20 opioid prescriptions in the last year by two prescribers, both physicians at the pain clinic he discussed.

Action Plan: Given this patient's history of chronic pain and medication and symptom monitoring by his pain-care physicians, consultation prior to surgical treatment in the dental office is recommended. Preprocedural use of NSAID and scheduled use of NSAID and acetaminophen along with his current medication barring any other contraindications in his medical history should be considered.

Conclusion: After consultation with his treating physicians, patient was managed peri-procedurally with preprocedural NSAID pain control and post-operative use of regular time-interval NSAID and acetaminophen medication. Patient was also seen within 48 hours of extraction by his pain physician to monitor any additional symptoms and stated that he felt that his pain was managed well during this procedure.

Case 4

Initial Presentation: A 52-year-old male presents for emergent care on a Friday at noon prior to a long weekend. He states that he is in town visiting his family and he has an established dentist where he lives. He states that he developed excruciating pain on the upper right quadrant during the previous night that prevented him from sleeping and that he is scheduled for a root canal when he returns home next week. Examination reveals a grossly carious #3 with a buccal cusp fracture. He asks for antibiotics and pain medication to "get him through the weekend" so that he can return

home and receive care in his dentist's office. Upon querying the PDMP, it is noted that he has had 58 prescriptions for opioids in the past year written by 46 providers, including 16 emergency room physicians and 20 dentists in 3 states. The prescriptions were filled at 18 pharmacies in all 3 states.

Action Plan: This is potentially an instance of doctor/pharmacy shopping and taking advantage of dental practice vulnerabilities, including the likelihood of Friday closure and the limited communication between dental practices and across state lines. In many states, patients have the responsibility of informing their healthcare providers if they are receiving care, including being prescribed medication, by other healthcare providers. The patient should be asked about symptoms and verification with his dentist that he is an established patient with the treatment plan that he described. Prescribers can refuse to write a prescription if they feel that the patient is not being truthful.

Conclusion: The dentist was unable to be contacted while the patient was present. This patient refused to stay and receive treatment and no prescription was given. Upon follow up after the holiday, no patient of record with the name provided had been seen in the dentist office described. This type of behavior was recounted in a recent National Public Radio broadcast where two individuals in recovery for opioid treatment described seeking consultation for broken teeth and received opioid prescriptions without follow-up.¹⁰⁶

Case 5

Initial Presentation: A 16-year-old female presents for consultation for third molar extraction. She reports no significant medical history and no contraindications for routine dental care. Radiographic assessment reveals that her third molar teeth are fully bony-impacted and it is anticipated that she may experience significant post-operative discomfort upon extraction. She has never had any surgical procedures before and has never taken opioid pain medication.

Action Plan: Discuss with patient and guardian the anticipated discomfort levels

associated with the proposed procedure and the preferred first-line protocol for pain control. Discuss the risks associated with early exposure to opioid medications, proper storage and disposal and the risks of diversion and misuse. Consider long-acting local anesthetics and use of appropriate steroidal and non-steroidal anti-inflammatory medication to mitigate swelling and discomfort.

Conclusion: Patient was given a prescription for ibuprofen, acetaminophen, and was given IV dexamethasone prior to dismissal from the office. Patient was also given a prescription for a 3-day supply (8 tablets) of an opioid, which she did not fill and reported minimal discomfort after 48 hours at all post-operative visits. Patient and guardian stated that they appreciated the discussion about the risks and benefits of different pain control regimens and understanding normal levels of postoperative discomfort gave them peace of mind that they are receiving ideal care.

Summary

Dentists and dental healthcare providers are on the front lines of the opioid crisis. We see our patients suffering from substance abuse disorder and we also see our patients struggling with pain. It is critical, therefore, that we are fully aware of the risks and benefits associated with opioid and other analgesics and the best practices for pain control within the dental practice. Further, patient report of dental pain in emergency department results in a significantly higher likelihood of opioid prescriptions than other types of pain.¹⁰⁷ Mitigation of risks associated with opioid prescribing, including thorough screening, patient counseling, PDMP query, and limitation of the number and potency of medications prescribed. Furthermore, identification of particularly vulnerable groups of individuals, for example young people and individuals with a history of substance abuse and judicious use of opioid medications in these groups, can result in adequate pain control with less risk of adverse outcomes. It is critical that dentists are able to better manage pain for patients in ways that reduce individual and societal risk overall.

Course Test Preview

To receive Continuing Education credit for this course, you must complete the online test. Please go to: www.dentalcare.com/en-us/ce-courses/ce692/start-test

- 1. In the latest figures available, the annual costs, including criminal justice, lost wages, medical treatment, etc. associated with the opioid epidemic in America were _____.**
 - A. \$256 Billion
 - B. \$780 Billion
 - C. \$1.5 Trillion
 - D. \$10 Trillion
- 2. Approximately ____ people died due to opioid overdose daily in the United States in 2019.**
 - A. 67
 - B. 95
 - C. 115
 - D. 136
- 3. In what year did heroin become illegal in the United States?**
 - A. 1868
 - B. 1898
 - C. 1915
 - D. 1924
- 4. After concern of undertreatment of pain in the patient population, in 2001 the Joint Commission released a statement requiring pain assessment for _____.**
 - A. hospital patients receiving surgical care
 - B. pregnant women in labor
 - C. patients seen in hospital emergency departments
 - D. all patients
- 5. In 2021, the Sackler family (owners of oxycontin makers Purdue Pharma) agreed to pay _____ in a settlement with the US government regarding their marketing of oxycontin?**
 - A. \$4.3 Billion
 - B. \$6.8 Billion
 - C. \$8.9 Billion
 - D. \$12.1 Billion
- 6. An 11-line letter to the editor in the New England Journal of Medicine from 1980 was cited 608 times, ____% of which were in support of the statement that opioids are not addictive.**
 - A. 47.2
 - B. 59.1
 - C. 72.2
 - D. 88.6
- 7. Opioid prescription rates have been declining from a high in 2012 of 255 million prescriptions annually to _____ prescriptions in 2022.**
 - A. 202 million
 - B. 178 million
 - C. 132 million
 - D. 101 million

- 8. What is the only country aside from the United States that allows pharmaceutical companies to advertise on television?**
- A. China
 - B. New Zealand
 - C. Sierra Leone
 - D. Brazil
- 9. Approximately _____ of dental prescriptions in the US are associated with tooth extraction.**
- A. 1/4
 - B. 1/2
 - C. 2/3
 - D. 3/4
- 10. The younger a patient is when he/she is first exposed to opioid medications, it _____ the risk of opioid misuse/abuse in the future.**
- A. increases
 - B. decreases
 - C. does not change
- 11. In a survey of high-school seniors, many nonmedical users of opioid prescriptions get those medications from previous prescriptions. It is estimated that what percentage of 14 to 17 year-olds receive opioid medications after third molar extractions?**
- A. 35%
 - B. 50%
 - C. 61%
 - D. 90%
- 12. In a recent study of patients after third molar extraction, which post-operative pain control regimen demonstrated a higher level of efficacy?**
- A. Opioid pain medication
 - B. Ibuprofen and Acetaminophen
 - C. Both were equally effective, but differed in side effects
- 13. Mandatory use of the prescription drug monitoring program caused a ____% reduction in the quantity of opioids prescribed.**
- A. 90
 - B. 78
 - C. 66
 - D. 52
- 14. Under the Controlled Substances Act (CSA), which of the following is not a legitimate rationale for prescribing a controlled substance?**
- A. A legitimate medical purpose exists for the use of the controlled substance.
 - B. The prescription is issued in the usual course of professional practice.
 - C. A prescriber authorizes prescriptions for inappropriately high doses of opioid medications.
 - D. The prescriber takes reasonable measures to prevent abuse and diversion as part of daily routine practice.

- 15. Between 2005 and 2008, which of the following was NOT a leading cause of noncriminal sanctions against healthcare providers related to medical mismanagement?**
- A. Inadequate communication with other prescribing physicians to coordinate the care plan.
 - B. Failure to provide a method of drug disposal for unused medications.
 - C. Failure to recognize signs of medication misuse and/or prescribing controlled substances inappropriately to individuals with known pre-existing substance abuse disorders.
 - D. Prescribing inappropriately high doses of opioids.
- 16. In their medical history collection, approximately ____ of dentists assess current alcohol use as part of their medical history and physical.**
- A. 30%
 - B. 45%
 - C. 60%
 - D. 75%
- 17. Approximately half of dentists report consistently counseling patients regarding the potential side effects of opioid medications, but only ____ reports discussing non-medical use of these medications.**
- A. 8%
 - B. 18%
 - C. 27%
 - D. 36%
- 18. Which of the following is NOT a question on the drug abuse screening test (DAST-10)?**
- A. Have you used drugs other than those required for medical reasons?
 - B. Have you neglected your family because of your use of drugs?
 - C. Have you been able to stop using/abusing drugs in the past?
 - D. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?
- 19. What is “doctor shopping” in the context of controlled substance misuse/abuse?**
- A. A patient is going from one physician or dentist’s office to another to acquire multiple prescriptions for controlled substances to treat the same symptom.
 - B. A patient is injuring him/herself in order to seek controlled substances from a physician or emergency room.
 - C. A patient is taking one prescription to multiple pharmacies to try to get it filled.
 - D. A patient is seeking care for true acute dental pain.
- 20. Patients who report to the emergency department with a complaint of dental pain were _____ to receive opioid prescriptions than those presenting with reports of pain from other sources.**
- A. less likely
 - B. more likely
 - C. equally as likely
- 21. All of the following are mechanisms that dentists can employ to reduce risk to their patients while still providing adequate pain control, EXCEPT:**
- A. Patient counseling for drug misuse, diversion, and risks.
 - B. PDMP query.
 - C. Limitation of the number and potency of medications prescribed.
 - D. Utilization of higher-dose and/or extended release opioid medications.

References

1. Centers for Disease Control and Prevention. Overdose Prevention. Data Resources. Accessed August 28, 2024.
2. US Department of Health and Human Services. Office of the Surgeon General. Opioid Overdose Prevention. Accessed August 28, 2024.
3. American Dental Association Statement on Opioids. 27 Feb 2018. Accessed August 28, 2024.
4. McCabe SE, West BT, Veliz P, et al. Trends in Medical and Nonmedical Use of Prescription Opioids Among US Adolescents: 1976-2015. *Pediatrics*. 2017 Apr;139(4):e20162387. doi: 10.1542/peds.2016-2387. Epub 2017 Mar 20.
5. Ward A, Jani T, De Souza E, et al. Prediction of Prolonged Opioid Use After Surgery in Adolescents: Insights From Machine Learning. *Anesth Analg*. 2021 Aug 1;133(2):304-313. doi: 10.1213/ANE.0000000000005527.
6. Okunev I, Frantsve-Hawley J, Tranby E. Trends in national opioid prescribing for dental procedures among patients enrolled in Medicaid. *J Am Dent Assoc*. 2021 Aug;152(8):622-630.e3. doi: 10.1016/j.adaj.2021.04.013. Erratum in: *J Am Dent Assoc*. 2021 Oct;152(10):A8. doi: 10.1016/j.adaj.2021.08.002. PMID: 34325778.
7. Guy GP Jr., Zhang K. Opioid Prescribing by Specialty and Volume in the U.S. *Am J Prev Med*. 2018 Nov;55(5):e153-e155. doi: 10.1016/j.amepre.2018.06.008. Epub 2018 Sep 12. PMID: 30219212; PMCID: PMC6327317.
8. Maughan BC, Hersh EV, Shofer FS, et al. Unused opioid analgesics and drug disposal following outpatient dental surgery: A randomized controlled trial. *Drug Alcohol Depend*. 2016 Nov 1;168:328-334. doi: 10.1016/j.drugalcdep.2016.08.016. Epub 2016 Sep 20.
9. Herman C. The Minnesota Prescription Monitoring Program. *Northwest Dent*. 2011 Mar-Apr;90(2):33-5.
10. McCauley JL, Leite RS, Melvin CL, et al. Dental opioid prescribing practices and risk mitigation strategy implementation: Identification of potential targets for provider-level intervention. *Subst Abus*. 2016;37(1):9-14. doi: 10.1080/08897077.2015.1127870. Epub 2015 Dec 16.
11. Health Resources and Services Administration. Opioid Crisis. Accessed August 28, 2024
12. Joint Economic Committee. The Economic Toll of the Opioid Crisis Reached Nearly \$1.5 Trillion in 2020. Accessed August 28, 2024
13. Levy B, Paulozzi L, Mack KA, Jones CM. Trends in Opioid Analgesic-Prescribing Rates by Specialty, U.S., 2007-2012. *Am J Prev Med*. 2015 Sep;49(3):409-13. doi: 10.1016/j.amepre.2015.02.020. Epub 2015 Apr 18.
14. Shah A, Hayes CJ, Martin BC. Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use - United States, 2006-2015. *MMWR Morb Mortal Wkly Rep*. 2017 Mar 17;66(10):265-269. doi: 10.15585/mmwr.mm6610a1.
15. Whyte AJ, Torregrossa MM, Barker JM, Gourley SL. Editorial: Long-Term Consequences of Adolescent Drug Use: Evidence From Pre-clinical and Clinical Models. *Front Behav Neurosci*. 2018 May 3;12:83. doi: 10.3389/fnbeh.2018.00083.
16. Miech R, Johnston L, O'Malley PM, et al. Prescription Opioids in Adolescence and Future Opioid Misuse. *Pediatrics*. 2015 Nov;136(5):e1169-77. doi: 10.1542/peds.2015-1364.
17. McCauley JL, Gilbert GH, Cochran DL, Gordan VV, Leite RS, Fillingim RB, Brady KT; National Dental PBRN Collaborative Group. Prescription Drug Monitoring Program Use: National Dental PBRN Results. *JDR Clin Trans Res*. 2019 Apr;4(2):178-186. doi: 10.1177/2380084418808517. Epub 2018 Oct 29. PMID: 30931705; PMCID: PMC6900502.
18. Lin HC, Wang Z, Boyd C, et al. Associations between statewide prescription drug monitoring program (PDMP) requirement and physician patterns of prescribing opioid analgesics for patients with non-cancer chronic pain. *Addict Behav*. 2018 Jan;76:348-354. doi: 10.1016/j.addbeh.2017.08.032. Epub 2017 Sep 5.
19. Ansari B, Tote KM, Rosenberg ES, Martin EG. A Rapid Review of the Impact of Systems-Level Policies and Interventions on Population-Level Outcomes Related to the Opioid Epidemic, United States and Canada, 2014-2018. *Public Health Rep*. 2020 Jul/Aug;135(1_suppl):100S-127S. doi: 10.1177/0033354920922975.

20. National Institute on Drug Abuse. Drugs of Abuse. Opioids. Bethesda, MD. Accessed August 28, 2024.
21. American Society of Addiction Medicine. Public Policy Statement: Definition of Addiction. Chevy Chase, MD. 15 Aug 2011. Accessed August 28, 2024.
22. National Institute on Drug Abuse. Misuse of Prescription Drugs. Summary. Bethesda, MD. Accessed August 28, 2024.
23. Vowles KE, McEntee ML, Julnes PS, Frohe T, Ney JP, van der Goes DN. Rates of opioid misuse, abuse, and addiction in chronic pain: a systematic review and data synthesis. *Pain*. 2015 Apr;156(4):569-576. doi: 10.1097/01.j.pain.0000460357.01998.f1.
24. Muhuri PK, Gfroerer JC, Davies MC. Associations of Nonmedical Pain Reliever Use and Initiation of Heroin Use in the United States. *CBHSQ Data Rev*. August 2013. Accessed August 28, 2024.
25. Cicero TJ, Ellis MS, Surratt HL, Kurtz SP. The changing face of heroin use in the United States: a retrospective analysis of the past 50 years. *JAMA Psychiatry*. 2014 Jul 1;71(7):821-6. doi: 10.1001/jamapsychiatry.2014.366.
26. Carlson RG, Nahhas RW, Martins SS, Daniulaityte R. Predictors of transition to heroin use among initially non-opioid dependent illicit pharmaceutical opioid users: A natural history study. *Drug Alcohol Depend*. 2016 Mar 1;160:127-34. doi: 10.1016/j.drugalcdep.2015.12.026. Epub 2016 Jan 4.
27. Patrick SW, Davis MM, Lehmann CU, Cooper WO. Increasing incidence and geographic distribution of neonatal abstinence syndrome: United States 2009 to 2012. *J Perinatol*. 2015 Aug;35(8):650-5. doi: 10.1038/jp.2015.36. Epub 2015 Apr 30. Erratum in: *J Perinatol*. 2015 Aug;35(8):667.
28. Centers for Disease Control and Prevention. HIV/AIDS. Injection Drug Use and HIV Risk. 03 Aug 2018. Accessed August 28, 2024.
29. Ly KN, Xing J, Klevens RM, et al. The increasing burden of mortality from viral hepatitis in the United States between 1999 and 2007. *Ann Intern Med*. 2012 Feb 21;156(4):271-8. doi: 10.7326/0003-4819-156-4-201202210-00004. Erratum in: *Ann Intern Med*. 2012 Jun 5;156(11):840.
30. Edwards J. Yes, Bayer Promoted Heroin for Children—Here are the Ads that Prove It. *Business Insider*. 17 Nov 2011. Accessed August 28, 2024.
31. Harrison Narcotics Tax Act. Public Acts of the Sixty Third Congress of the United States. Woodrow Wilson, President. 17 Dec 1914. Accessed August 28, 2024.
32. Anti-Heroin Act of 1924. By the 68th United States Congress. Calvin Coolidge, President. 07 Jun 1924. Accessed August 28, 2024.
33. National Institute on Drug Abuse. Intersecting Epidemics of Prescription Opioids and Heroin. Wilson M. Compton, MD, Deputy Director. 2015.
34. Porter J, Jick H. Addiction rare in patients treated with narcotics. *N Engl J Med*. 1980 Jan 10;302(2):123. doi: 10.1056/nejm198001103020221.
35. Portenoy RK, Foley KM. Chronic use of opioid analgesics in non-malignant pain: report of 38 cases. *Pain*. 1986 May;25(2):171-186. doi: 10.1016/0304-3959(86)90091-6.
36. The Integrated Approach to the Management of Pain. NIH Consens Statement 1986 May 19-21;6(3):1-8. Accessed August 28, 2024.
37. Acute Pain Management. Operative or Medical Procedures and Trauma AHCPR Clinical Practice Guidelines, No. 1 Acute Pain Management Guideline Panel. Rockville, MD. Agency for Health Care Policy and Research (AHCPR); 1992 Feb. Report No.: 92-0032. Accessed August 28, 2024.
38. Pain: The Fifth Vital Sign. Department of Veterans Affairs. October 2000. Accessed August 28, 2024.
39. American Pain Society. Principles of analgesic use in the treatment of acute pain and cancer pain, 4th ed. Glenview, IL. American Pain Society. 1999.
40. Phillips DM. JCAHO pain management standards are unveiled. Joint Commission on Accreditation of Healthcare Organizations. *JAMA*. 2000 Jul 26;284(4):428-9. doi: 10.1001/jama.284.4.423b.

41. Baker DW. History of The Joint Commission's Pain Standards: Lessons for Today's Prescription Opioid Epidemic. *JAMA*. 2017 Mar 21;317(11):1117-1118. doi: 10.1001/jama.2017.0935.
42. Centers for Disease Control and Prevention (CDC). Vital signs: overdoses of prescription opioid pain relievers—United States, 1999-2008. *MMWR Morb Mortal Wkly Rep*. 2011 Nov 4;60(43):1487-92.
43. Meier B. In guilty plea, OxyContin maker to pay \$600 million. *New York Times*. 10 May 2007. Accessed August 28, 2024.
44. NPR. The Sacklers, Who Made Billions From OxyContin, Win Immunity From Opioid Lawsuits. Accessed August 28, 2024.
45. Cicero TJ, Ellis MS, Surratt HL. Effect of abuse-deterrent formulation of OxyContin. *N Engl J Med*. 2012 Jul 12;367(2):187-9. doi: 10.1056/NEJMc1204141.
46. Cicero TJ, Ellis MS, Surratt HL, Kurtz SP. The changing face of heroin use in the United States: a retrospective analysis of the past 50 years. *JAMA Psychiatry*. 2014 Jul 1;71(7):821-6. doi: 10.1001/jamapsychiatry.2014.366.
47. Jones CM. Heroin use and heroin use risk behaviors among nonmedical users of prescription opioid pain relievers - United States, 2002-2004 and 2008-2010. *Drug Alcohol Depend*. 2013 Sep 1;132(1-2):95-100. doi: 10.1016/j.drugalcdep.2013.01.007. Epub 2013 Feb 12.
48. Leung PTM, Macdonald EM, Stanbrook MB, Dhalla IA, Juurlink DN. A 1980 Letter on the Risk of Opioid Addiction. *N Engl J Med*. 2017 Jun 1;376(22):2194-2195. doi: 10.1056/NEJMc1700150.
49. Centers for Disease Control and Prevention. Overdose Prevention. US Dispensing Rate Maps. Accessed August 24, 2024.
50. NIH. National Institute on Drug Abuse. Skewed Opioid Prescribing Patterns in the United States—A Few Providers Prescribe a Large Proportion of Opioids. 2021 Jan 21. Accessed August 28, 2024
51. Suda KJ, Durkin MJ, Calip GS, et al. Comparison of Opioid Prescribing by Dentists in the United States and England. *JAMA Network Open*. 2019; 2(5): e194303.
52. Congressional Research Service. Consumption of Prescription Opioids for Pain: A Comparison of Opioid Use in the United States and Other Countries. 2021 Jun 02. Accessed August 28, 2024.
53. Onishi E, Kobayashi T, Dexter E, et al. Comparison of Opioid Prescribing Patterns in the United States and Japan: Primary Care Physicians' Attitudes and Perceptions. *J Am Board Fam Med*. 2017 Mar-Apr;30(2):248-254. doi: 10.3122/jabfm.2017.02.160299.
54. Free MM. Cross-cultural conceptions of pain and pain control. *Proc (Bayl Univ Med Cent)*. 2002 Apr;15(2):143-5. doi: 10.1080/08998280.2002.11927832.
55. Streltzer J, Wade TC. The influence of cultural group on the undertreatment of postoperative pain. *Psychosom Med*. 1981 Oct;43(5):397-403. doi: 10.1097/00006842-198110000-00002.
56. Al-Harthy M, Ohrbach R, Michelotti A, List T. The effect of culture on pain sensitivity. *J Oral Rehabil*. 2016 Feb;43(2):81-8. doi: 10.1111/joor.12346. Epub 2015 Sep 15.
57. Overview of Pain Management and Prescribing Policies. The National Alliance for Model State Drug Laws (NAMSDL). Jan 2016. Accessed August 28, 2024
58. Paulozzi LJ, Strickler GK, Kreiner PW, et al. Controlled Substance Prescribing Patterns-- Prescription Behavior Surveillance System, Eight States, 2013. *MMWR Surveill Summ*. 2015 Oct 16;64(9):1-14. doi: 10.15585/mmwr.ss6409a1.
59. Ventola CL. Direct-to-Consumer Pharmaceutical Advertising: Therapeutic or Toxic? *P T*. 2011 Oct;36(10):669-84.
60. Korte G. White House pushes back against Super Bowl ad. *USA Today*. 08 Feb 2016. Accessed August 28, 2024.
61. Tai-Seale M, McGuire TG, Zhang W. Time allocation in primary care office visits. *Health Serv Res*. 2007 Oct;42(5):1871-94. doi: 10.1111/j.1475-6773.2006.00689.x.
62. Morgan P, Everett CM, Hing E. Time spent with patients by physicians, nurse practitioners, and physician assistants in community health centers, 2006-2010. *Healthc (Amst)*. 2014 Dec;2(4):232-7. doi: 10.1016/j.hjdsi.2014.09.009. Epub 2014 Oct 31.
63. Castillo-Carniglia A, González-Santa Cruz A, Cerdá M, Delcher C, Shev AB, Wintemute GJ, Henry SG. Changes in opioid prescribing after implementation of mandatory registration

- and proactive reports within California's prescription drug monitoring program. *Drug Alcohol Depend.* 2021 Jan 1;218:108405. doi: 10.1016/j.drugalcdep.2020.108405. Epub 2020 Nov 12. Erratum in: *Drug Alcohol Depend.* 2021 Apr 1;221:108606.
64. Chua KP, Hu HM, Waljee JF, Brummett CM, Nalliah RP. Opioid prescribing patterns by dental procedure among US publicly and privately insured patients, 2013 through 2018. *J Am Dent Assoc.* 2021 Apr;152(4):309-317. doi: 10.1016/j.adaj.2021.01.001. Epub 2021 Feb 23. PMID: 33637299; PMCID: PMC8118387.
 65. Freund CR, VanDuine SM, Cullen JL. Opioid Prescription Trends in a US Dental School Clinic, 2014-2018: A Retrospective Study Using Electronic Health Record Data. *J Public Health Manag Pract.* 2021 Mar 12. doi: 10.1097/PHH.0000000000001282. Epub ahead of print.
 66. Scrivani SJ, Keith DA, Kulich RJ, et al. Pain Management for Dental Medicine in 2021: Opioids, Coronavirus and Beyond. *J Pain Res.* 2021 May 24;14:1371-1387. doi: 10.2147/JPR.S319373.
 67. Lavasani R, Chung M, Beatty A, et al. Opioid prescribing trends in a Veterans Affairs emergency department and dental clinic before and after implementation of opioid-prescribing guidelines. *Ment Health Clin.* 2020 Sep 30;10(5):270-274. doi: 10.9740/mhc.2020.09.270.
 68. Rigert JM, Napenas JJ, Wally M, et al. Dental pain management with prescription opioids by nondental healthcare professionals in a healthcare system network. *J Public Health Dent.* 2021 Jun 3. doi: 10.1111/jphd.12459. Epub ahead of print.
 69. Volkow ND, McLellan TA, Cotto JH, et al. Characteristics of opioid prescriptions in 2009. *JAMA.* 2011 Apr 6;305(13):1299-301. doi: 10.1001/jama.2011.401.
 70. National Survey on Drug Use and Health. The CBHSQ Report. Opioid Misuse Increases Among Older Adults. SAMHSA. 25 Jul 2017.
 71. Moore RA, Derry S, Aldington D, Wiffen PJ. Adverse events associated with single dose oral analgesics for acute postoperative pain in adults - an overview of Cochrane reviews. *Cochrane Database Syst Rev.* 2015 Oct 13;2015(10):CD011407. doi: 10.1002/14651858.CD011407.pub2.
 72. Moore RA, Wiffen PJ, Derry S, et al. Non-prescription (OTC) oral analgesics for acute pain - an overview of Cochrane reviews. *Cochrane Database Syst Rev.* 2015 Nov 4;2015(11):CD010794. doi: 10.1002/14651858.CD010794.pub2.
 73. Harris PA, Mukkamala B. Advocacy and Action to End the Opioid Epidemic by the AMA Opioid Task Force. *AMA J Ethics.* 2020 Aug 1;22(1):E718-722. doi: 10.1001/amajethics.2020.718.
 74. 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 Aug;144(8):898-908. doi: 10.14219/jada.archive.2013.0207.
 75. Doleman B, Leonardi-Bee J, Heinink TP, et al. Pre-emptive and preventive NSAIDs for postoperative pain in adults undergoing all types of surgery. *Cochrane Database Syst Rev.* 2021 Jun 14;6(6):CD012978. doi: 10.1002/14651858.CD012978.pub2.
 76. Moore PA, Ziegler KM, Lipman RD, 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 Apr;149(4):256-265.e3. doi: 10.1016/j.adaj.2018.02.012. Erratum in: *J Am Dent Assoc.* 2018 Jun;149(6):413. Erratum in: *J Am Dent Assoc.* 2020 Mar;151(3):163.
 77. Becker DE, Phero JC. Drug therapy in dental practice: nonopioid and opioid analgesics. *Anesth Prog.* 2005 Winter;52(4):140-9. doi: 10.2344/0003-3006(2005)52[140:DTD]2.0.CO;2.
 78. National Academy of Medicine. First, do no harm: marshaling clinician leadership to counter to opioid epidemic. Accessed August 28, 2024.
 79. CDC. Opioids. CDC Guideline for Prescribing Opioids for Chronic Pain. 2021 Feb 17. Accessed August 28, 2024.
 80. ADA. The Opioid Crisis. Accessed August 28, 2024.
 81. McCauley JL, Gilbert GH, Cochran DL, Gordan VV, et al. Prescription Drug Monitoring Program Use: National Dental PBRN Results. *JDR Clin Trans Res.* 2019 Apr;4(2):178-186. doi: 10.1177/2380084418808517. Epub 2018 Oct 29.
 82. iPrescribe. States with Mandatory PDMP Requirements. Accessed August 28, 2024
 83. Keith DA, Shannon TA, Kulich R. The prescription monitoring program data: What it can tell you.

- J Am Dent Assoc. 2018 Apr;149(4):266-272. doi: 10.1016/j.adaj.2018.02.015.
84. Rasubala L, Pernapati L, Velasquez X, et al. Impact of a Mandatory Prescription Drug Monitoring Program on Prescription of Opioid Analgesics by Dentists. *PLoS One*. 2015 Aug 14;10(8):e0135957. doi: 10.1371/journal.pone.0135957.
 85. Prescription Drug Monitoring Program Training and Technical Assistance Center. State PDMP Profiles and Contacts. Accessed August 28, 2024.
 86. Federation of State Medical Boards. Prescription Drug Monitoring Programs. A State-by-state Overview. Accessed August 28, 2024.
 87. Title 21 CFR – Part 1306-Section 1306.04(a). Purpose of issue of prescription. *Fed Regist* 1971; 7799. To be codified at 21 CFR §1306.04. Accessed August 28, 2024.
 88. Dispensing controlled substances for the treatment of pain. *Fed Regist* 2006; 71: 52716-52717. Accessed August 28, 2024.
 89. Fitzgibbon DR, Rathmell JP, Michna E, Stephens LS, Posner KL, Domino KB. Malpractice claims associated with medication management for chronic pain. *Anesthesiology*. 2010 Apr;112(4):948-56. doi: 10.1097/ALN.0b013e3181cdef98.
 90. Nedelman M. Doctors increasingly face charges for patient overdoses. *CNN*. 31 Jul 2017. Accessed August 28, 2024.
 91. Berman JB, Li G. Characteristics of criminal cases against physicians charged with opioid-related offenses reported in the US news media, 1995-2019. *Inj Epidemiol*. 2020 Oct 1;7(1):50. doi: 10.1186/s40621-020-00277-8.
 92. ADA. Frequently Asked Questions for Opioid Prescribing. 2018 Nov 14. Accessed August 28, 2024.
 93. Webster LR, Webster RM. Predicting aberrant behaviors in opioid-treated patients: preliminary validation of the Opioid Risk Tool. *Pain Med*. 2005 Nov-Dec;6(6):432-42. doi: 10.1111/j.1526-4637.2005.00072.x.
 94. Chou R, Fanciullo GJ, Fine PG, et al. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. *J Pain*. 2009 Feb;10(2):113-30. doi: 10.1016/j.jpain.2008.10.008.
 95. Manchikanti L, Abdi S, Atluri S, et al. American Society of Interventional Pain Physicians (ASIPP) guidelines for responsible opioid prescribing in chronic non-cancer pain: Part 2--guidance. *Pain Physician*. 2012 Jul;15(3 Suppl):S67-116.
 96. McCauley JL, Back SE, Brady KT. Pilot of a brief, web-based educational intervention targeting safe storage and disposal of prescription opioids. *Addict Behav*. 2013 Jun;38(6):2230-5. doi: 10.1016/j.addbeh.2013.01.019. Epub 2013 Feb 4.
 97. Hahn KL. Strategies to prevent opioid misuse, abuse, and diversion that may also reduce the associated costs. *Am Health Drug Benefits*. 2011 Mar;4(2):107-14.
 98. Siegler A, Tuazon E, Bradley O'Brien D, Paone D. Unintentional opioid overdose deaths in New York City, 2005-2010: a place-based approach to reduce risk. *Int J Drug Policy*. 2014 May;25(3):569-74. doi: 10.1016/j.drugpo.2013.10.015. Epub 2013 Nov 8.
 99. Bartels K, Mayes LM, Dingmann C, et al. Opioid Use and Storage Patterns by Patients after Hospital Discharge following Surgery. *PLoS One*. 2016 Jan 29;11(1):e0147972. doi: 10.1371/journal.pone.0147972.
 100. Lankenau SE, Teti M, Silva K, et al. Initiation into prescription opioid misuse amongst young injection drug users. *Int J Drug Policy*. 2012 Jan;23(1):37-44. doi: 10.1016/j.drugpo.2011.05.014. Epub 2011 Jun 20.
 101. National Institute on Drug Abuse. Misuse of Prescription Drugs Research Report. How can prescription drug misuse be prevented? Jan 2018. Accessed August 28, 2024.
 102. FDA. Disposal of Unused Medicines: What You Should Know. 2020 Oct 01. Accessed August 28, 2024.
 103. Commonwealth of Massachusetts. Department of Public Health. Bureau of Substance Abuse Services. SBIRT: A step-by-step guide for screening and intervening for unhealthy alcohol and other drug use. Clinician's Toolkit. Accessed August 28, 2024.
 104. National Institute on Drug Abuse. Chart of Evidence-Based Screening Tools and Assessments

- for Adults and Adolescents. 2021 May 06. Accessed August 28, 2024.
105. Horn DB, Vu L, Porter BR, Sarantopoulos K. Responsible Controlled Substance and Opioid Prescribing. 2021 Aug 16. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-.
 106. Siegel R, Cheung J. Dental schools add an urgent lesson: think twice about prescribing opioids. NPR. 2017 Sept 08. Accessed August 28, 2024.
 107. Naavaal S, Kelekar U, Shah S. Opioid and Nonopioid Analgesic Prescriptions for Dental Visits in the Emergency Department, 2015-2017 National Hospital Ambulatory Medical Care Survey. *Prev Chronic Dis.* 2021 Jun 10;18:E58. doi: 10.5888/pcd18.200571.
 108. Centers for Disease Control and Prevention (CDC). Understanding the Opioid Overdose Epidemic. Accessed August 28, 2024.

Additional Resources

- [Calculating Daily Dosages of Opioids for Safer Prescribing. Accessed August 28, 2024](#)
- [Safe Disposal of Medications. Accessed October 19, 2021. National Prescription Drug Take Back Day. Accessed October 19, 2021. DEA Registered Drug Collector Look Up: 1-800-882-9539 \(DEA Office of Diversion Control Registration Center\). Accessed August 28, 2024](#)
- [Evidence Based Screening Tools for Substance Misuse/Abuse. Accessed August 28, 2024](#)
- [Keith DA, Shannon TA, Kulich R. The prescription monitoring program data: What it can tell you. *J Am Dent Assoc.* 2018 Apr;149\(4\):266-272. doi: 10.1016/j.adaj.2018.02.015.](#)
- [Prescription Drug Monitoring Frequently Asked Questions \(FAQ\). Accessed August 28, 2024](#)
- [PDMP State Profiles. Accessed August 28, 2024](#)
- [The Crime of the Century. HBO Original Documentary. Accessed August 28, 2024](#)
- [Keefe PR. *Empire of Pain: The Secret History of the Sackler Dynasty.* New York, NY. Doubleday, 2021.](#)

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