



CHEMICAL DEPENDENCY AND PRESCRIPTION WRITING FOR 2023: PEDIATRIC PROBLEMS AND A YEAR OF CHANGES

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“Kids are not routinely considered as addicts or persons suffering from substance use disorder (SUD), but they can be.”

Objectives:

- Understand how kids can be affected by dentists in regard to opioids.
- Comprehend the Fentanyl problem, reversal agents and recoveries.
- Appreciate how 2023 is a year of change for substance use disorders, especially for children.

EDUCATION CREDIT

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Or is there a false hope that this education will happen due to the schools they are in? Kids are not routinely considered as addicts or persons suffering from substance use disorder (SUD), but they can be. Providers (and parents who are health care providers) may lack the clinical knowledge skills to begin the aforementioned teaching at home as well as in their clinics. Therefore, as dental professionals, more must be done to lead the way to ensure as much opportunity for their safe futures.

There were 72,151 overdose deaths in 2019. In 2020, the number rose to 93,331. It rose again to 107,622 in 2021, where 63% of the deceased were attributed to fentanyl. The numbers continued to climb to 109,680 deaths in 2022. ⁽²⁾ Those depressing statistics are the overall numbers for the last four years and they are sickening.

Does the present predict the future?

“I believe the children are our future; teach them well and let them lead the way.” ⁽¹⁾ These immortal words sung by the late, great Whitney Houston in 1985 in her song “Greatest Love of All” echo throughout eternity, but are they really being taught all that well?





In 2023, Gaw et al. reported that opioids were involved in the deaths of 24.1% of fatal poisonings in infants and children (5 and under) back in 2005, and that number tragically more than doubled in 2018 to 52.2%.⁽³⁾ Also in 2023, Gomes and her team stated that 10.2% of teen deaths ages 15-19 are due to opioids.⁽⁴⁾ It is encouraging to see that that figure has improved compared to the number of younger children whose health care is solely dependent upon care givers, even though the loss of lives so young is unimaginable. Increased autonomy comes with age; decisions are being made for themselves.



Why us?

Moore et al. postulated the question, “why do we prescribe Vicodin?” in 2016, revealing that 80% of patients get a script for pain management that they do not need.⁽⁵⁾ This is true for children and teens as well, perhaps even more so. Dentists are often portrayed as one of the top prescribers of pain medication. Dentists are often portrayed as one of the top prescribers of pain medication, but as Chandrashekar, et al. illustrated, nurse practitioners prescribed for dental diagnoses, at 3x the rate that dentists did. The statistics on pain medication received for dental needs could be skewed since not all perceived dental needs were and are being handled by dentists on this matter.⁽⁶⁾ In other words, it could appear that the nurse practitioners were clearing the room by prescribing antibiotics and opioids to those presenting with dental needs. Harbaugh, et al. stated that more than twice the number of teens whose caregiver filled prescriptions after extractions (third molars especially) developed persistent opioid usage.⁽⁷⁾ That is a disturbing fact when coupled with the knowledge that almost half of teens are opioid naive and therefore a higher risk.⁽⁸⁾

Dentistry can and must do better. Dentists need to face themselves in the mirror and understand their shortcomings. This is most evident in an article by Heron, et al. They named dentists as the biggest prescribers of opioids to those under 18 years of age. They also cited that 84% of dentists believed in the combination of acetaminophen and ibuprofen. Yet, 43% of dentists were regular writers for opioids. And this was done knowing that 50% of patients have leftovers and 69% of them misuse/divert these pain killers. Indeed, they were correct in naming the article as “a survey of opioid prescribing among dentists indicates need for more effective education regarding pain management.”⁽⁹⁾ More education is needed and the more effective the better.



Why are the young so susceptible?

Many could and will cite a familial history. This is not entirely wrong as one only needs to see a neonate suffering from SUD as a tough way to begin life. There can also be a genetic factor. Parents with depression, anxiety, PTSD, and bipolar disorder can have children up to 50% more at risk⁽¹⁰⁾ Nguyen demonstrated that one in 35 pregnancies showed the mother using opioids, and 86% of those began with prescriptions.⁽¹¹⁾ Vanderbilt University, in 2014, cited that there were 10.1 babies born out of 1000 with Hepatitis C and that they were mostly from intravenous drug abuse.⁽¹²⁾ Given that the number of overdose deaths has risen since that time, it is logical to assume that this number has risen as well, though it is not known if it is proportional.

Teens make poor decisions sometimes. This could be because their brains are still developing as the brain develops from back to front. Liu et al. wrote in the Clinical Journal of Sports Medicine that misuse of drugs can affect frontal lobe development and alter reward pathways. Up to 33% could suffer from SUD if they have had drugs before their high school graduation, and 10% could start after a three-day supply. Risk factors for opioid misuse include mental health problems such as attention-deficit/hyperactivity disorder, use of other illicit substances, housing instability, social absenteeism, friends who misuse opioids, and living in a rural area.⁽¹³⁾ Sports medicine is a non-dental avenue for children and adolescents to be exposed to opioids. Injuries can result from hockey, karate, gymnastics, basketball, baseball, softball, football, cheerleading, track and field events among other sporting activities.

“Gone are the days of yesteryear with a stereotypical corner drug dealer wearing a trench coat with many drug choices inside the folds.”

Suicide is another area where concern is great. Many teens will try to use pills to make an attempt on their own lives. It is the second highest reason for deaths in those aged 10-19, and suicide increases with opioid usage. Many cited feelings of sadness and hopelessness.⁽¹⁴⁾ This was echoed by Oquendo and Volkow in the New England Journal of Medicine by listing depression.⁽¹⁵⁾ Opioids are not an acceptable treatment for depression. Naloxone will not interfere with antidepressants, so a healthcare provider should feel secure in this knowledge should the need arise.

Many kids will not eat leftovers when it comes to meals. Sadly, this is not true when it comes to leftover prescription medications. In a post-COVID world texting study in 2021, the University of Pennsylvania showed that 61% of opioids went unused.⁽¹⁶⁾ This number echoes the works of others cited within. A Tennessee study published in 2022 showed that 90% of parents still had leftover opioids despite the state’s three-day acute pain guidance. Moreover, 68% of parents kept the narcotics in an unlocked location.⁽¹⁷⁾ Some caregivers threw them out but it is quite possible for the youths to recover them from the trash. This is why trashed pills are recommended to be crushed in kitty litter or coffee grounds. Children and teens are also taking pills that were prescribed for other family members and abusing them.⁽¹⁸⁾

Gone are the days of yesteryear with a stereotypical corner drug dealer wearing a trench coat with many drug choices inside the folds. Technology has made life easier in many aspects and, yet much more complicated. Kids are using social media more and beginning to use technology earlier in their lives. It is not all YouTube videos, Roblox, Minecraft, Instagram, Facebook, etc. Social media is a drug dealer’s dream and any caregiver’s nightmare. A middle school boy was found dead, still clutching his teddy bear, from fentanyl he acquired from Snapchat, thinking he was buying oxycodone.⁽¹⁹⁾ The dark web is also an avenue for drug dealing. A 2021 study revealed almost 250,000 listings over ten marketplaces, extending to 1.1 million threads on buying drugs.⁽²⁰⁾ Thankfully, the government is aware of this newer problematic source. Operation Dark HunTor in 2021 netted a haul. There were 150 suspects of which 65 were Americans out of the ten nations involved. Authorities recovered \$32 million in cash, 45 weapons, and 500 pounds of illegal drugs, of which there were 4 million doses of fentanyl.⁽²¹⁾

Why is fentanyl such a problem?

Fentanyl abuse has been rising rapidly. It has 75 times the morphine milligram equivalent (MME) of hydrocodone or morphine. It is cheap. As actual opioid issues drop, fentanyl and other synthetics rise. Such is the case with children abusing this drug. In 2023, Gaither reported that there have been over 5,000 deaths of children/adolescents from specifically fentanyl during 1999-2021. A shocking 50% of those mortalities happened in the years post-COVID.⁽²²⁾ Fentanyl is often mixed with other drugs like opioids, cocaine or methamphetamine.

“NOT ALL MONSTERS ARE THE IMAGINARY ONES HIDING UNDER THE BED.”



In Giles County, where the city of Pulaski, TN is, a warning was posted in 2022 about person(s) placing a trace amount of fentanyl inside folded dollar bills at gas stations.⁽²³⁾ Kids could pick up the loose free money, thereby encountering the powerful drug, which could have resulted in overdoses similar to those suffered by first responders who unknowingly came into contact with the drug. In Clarksville, TN, a court case in 2022 saw a woman plead guilty to second-degree murder by injecting her domestic significant other with methamphetamine and fentanyl.⁽²⁴⁾ These issues are not unique to Tennessee. Georgia has seen fentanyl deaths in adolescents aged 10 to 19 increase 800% from 2019 to 2021.⁽²⁵⁾ In California, local bars give away test strips to kids to see if the drugs are laced with

fentanyl.⁽²⁶⁾ Back here in Tennessee, in November 2022, at Sewanee Elementary School, a bust was made by the school's resource officer. It yielded 7.6 ounces of suspected fentanyl, 9 ounces of suspected marijuana, a loaded 9mm handgun and \$4,463 in cash.⁽²⁷⁾ In Bakersfield, CA, in September 2022 at Chipman Junior High School, a 13-year-old child was arrested for fighting with another student while he had 150 pills laced with fentanyl and \$300 cash. A school supervisor overdosed by touching the container and was given Narcan to reverse the contacted fentanyl.⁽²⁸⁾ These are recent examples of children possessing, dealing, and encountering drugs and their trade in the kids' alleged safe spaces. There is a lot of fentanyl and its derivatives in Tennessee.

What about reversal agents and recoveries?

The American Academy of Pediatrics recommends buprenorphine for opioid use disorder for at least 12 weeks with counseling and behavioral therapy. Federal regulations prohibit most methadone programs for those under 18 years old.⁽²⁹⁾ As of July 1, 2022 in Tennessee, when dentists prescribe over three days or 180 MME and a benzodiazepine, an offer for an opioid reversal agent must be made. This is on par with other states as nationally, the number of naloxone prescriptions dispensed by U.S. retail pharmacies doubled from 2017 to 2018, rising from 271,000 to 557,000.⁽³⁰⁾ The old saying of, "an ounce of prevention is better than a pound of cure" is best represented by checking the Controlled Substances Monitoring Database (CSMD) for every patient, even the young ones. Doctors should also check their profiles to monitor for unusual activity. From 2011 to 2018 in Tennessee, potential doctor-pharmacy shoppers dropped 85% by doctors using the CSMD.⁽³¹⁾

“The American Academy of Pediatrics recommends buprenorphine for opioid use disorder for at least 12 weeks with counseling and behavioral therapy.”



Tennessee Code Annotated (T.C.A.) 63-1-402 states that prescription writing/ chemical dependency courses should discuss the muscle relaxer carisoprodol (Soma) as well as barbiturates. ⁽³²⁾ Carisoprodol potentiates opioids and is dangerous with alcohol as well. The reversal agent is bemegride. Barbiturates are central nervous system depressants that were essentially replaced by benzodiazepines but still have use today for treating epilepsy, migraines and in anesthesia. Barbiturates act by affecting the chloride pore on GABA-A receptors similar to the mechanism of action of benzodiazepines. As with carisoprodol, bemegride is also the reversal agent for barbiturates.

Narcan or the generic version, naloxone, can be given to any age patient if opioid overdose is suspected. There is no downside to being wrong and erring on the side of caution. It is considered a gold standard for opioid antagonists, though there are others. A Good Samaritan Law protects Tennesseans who administer naloxone to an unconscious patient that they have reason to believe has overdosed.

How is 2023 a year for change?

A lot has happened in 2023 to help us educate our patients, our children and ourselves for the future. Perhaps it is the light that needs to be seen with all these dismally dark statistics. First, the Drug Enforcement Agency (DEA) passed the Medication Access and Training Expansion (MATE) act. Beginning on June 27, 2023, all healthcare prescribers need to complete a one-time eight-hour on treatment and management

of patients with opioids or SUD. It is a requirement before renewing their DEA license next cycle of renewal. ⁽³³⁾ Next, the Centers for Disease Control and Prevention (CDC) released new guidelines for acute pain management. The CDC updated the 2016 guidelines in 2022 and those were last reviewed in March 2023. The main messages were to use nonopioids primarily, do not co-prescribe opioids with benzodiazepines and use short-acting opioids for no more than 3-5 days. ⁽³⁴⁾

The state of Tennessee released a list of the top ten drugs being abused in 2023. This was done to further educate all the citizens, not just providers, patients and parents. Number ten is Delta-9 THC, a cannabis-based derivative. Xylazine was next and it is also known as: tranq, tranq dope, sleep-cut, Philly dope and/or zombie drug. It is often observed with severe necrotic skin ulcerations. Buprenorphine was next. Heroin or diacetylmorphine, with its 2-4x MME potency, came in seventh. The first fentanyl, Fluorofentanyl, is next. Cocaine is in fifth place. The fourth is 4-AANP. It is a precursor to fentanyl and acetyl fentanyl. Fentanyl itself comes in third place. Marijuana is the second most abused drug in Tennessee. The top offender is Methamphetamine. ⁽³⁵⁾ Here in Tennessee, it is often mixed with fentanyl, acetaminophen, and finally bromphine to make it a purple color, hence the nickname Purple Fentanyl. Bromphine makes other drugs purple and appealing as well. In and of itself, it is a synthetic opioid that has no DEA approval. ⁽³⁶⁾

Help is on the way. Reversal agents are hyped on

roadside billboards in Tennessee. As of September 2023, the reversal agents will be hitting the shelves in grocery stores and pharmacies for over-the-counter purchase. ⁽³⁷⁾ Initially, these will be naloxone or Narcan. A "new" reversal agent is also back in 2023. Opvee from Indivior is nalmefene hydrochloride. It comes as a nasal spray as well. It is indicated for opioid overdoses in adults and children over 12. Nalmefene (Revox) was available from 1995-2008, but it was costly. It is equipotent to naloxone but longer acting. In Europe, it is used to help treat alcoholism. Another choice for a "new" reversal agent for 2023 is ReVive. ReVive is a naloxone hydrochloride from Harm Reduction Therapeutics. In July 2023, Food and Drug Administration (FDA) approval was granted for it.

Finally, the American Dental Association (ADA) in August 2023, released guidelines for treating acute dental pain in children under 12 years of age. It appeared in their September 2023 journal. This was a collaboration between the ADA Science and Research Institute, the University of Pittsburgh School of Dental Medicine, and the Center for Integrative Global Oral Health at the University of Pennsylvania. This is the first part, as the second part will deal with adolescents. The "evidence-based clinical practice guideline for the pharmacologic management of acute dental pain in children" spells out a great many things. It reminds dentists that tramadol and codeine in children has been contraindicated by the FDA since 2017. Essentially, it recommends acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs) as first-line treatments for managing short-term pain in children. The guideline also recommends not using benzocaine topicals for teething in the very young children due to a fear of methemoglobinemia. ⁽³⁸⁾ Combining acetaminophen and ibuprofen has long been known to be an excellent choice for pain relief and is safer for children who are wholly opioid naive (and adults).

Not all monsters are the imaginary ones hiding under the bed. Some are on the streets, and some are living right in the homes of the children. There are types of monsters at school and on the web and social media. Education helps shine the light of truth and knowledge to assist in banishing the demons that could plague children and society. By teaching the children well and leading the way, dentists and other providers can help them achieve their futures.

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