



CONTROLLED SUBSTANCES

SUBSTANCE USE DISORDERS AND PRESCRIPTIONS

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Recently a single patient was able to visit multiple dentists to receive 89 opioid analgesic prescriptions in a 90-day period.

This is not a typographical error, she received 89 controlled substance prescriptions in 90 days. She filled her prescriptions at multiple pharmacies. I'm not privy to the nature of her dental pathology or even if she had any dental pathology. What is clear is that her addiction pathology included "Doctor Shopping." Doctor Shopping falls under the classification of aberrant behavior and is a symptom of a Substance Use Disorder. This is cited as the most egregious case of Doctor Shopping in Tennessee.



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Doctor Shopping

Doctor Shopping is the practice of visiting multiple doctors for the purpose of obtaining controlled substances. Often, the controlled substances obtained by Doctor Shoppers are used to satisfy their own addiction; sometimes they are sold or diverted in exchange for other substances the person prefers to use which is called a “drug of choice.” In this case, while she filled 89 prescriptions, she didn’t visit 89 different dentists. Many dentists were duped more than once. Unfortunately, not one dentist caught on or made a complaint or report. Had any of them checked the CSMD they would have seen multiple prescriptions by multiple providers.

Dentists, similar to their medical doctor colleagues, are poorly trained to recognize, detect or diagnose addiction. Addiction is a chronic, relapsing disorder characterized by compulsive drug use and drug-seeking despite adverse consequences. Addiction is a brain disease that affects 10 to 15 percent of the population. It involves reversible changes to brain circuits that regulate the reward process. These brain changes may take months to even years to normalize after a person has stopped taking mood-altering drugs. Addiction, like other chronic diseases, responds to chronic disease management, but the disease needs to be recognized and diagnosed to be treated.

The Reward Circuit

The part of the brain that houses addiction is called the reward circuit. The reward circuit is made up of the nucleus accumbens together with the ventral pallidum and ventral tegmental area. The reward circuit is connected to many other areas of the brain, including the prefrontal cortex (inhibition, motivation, morals), the limbic system (emotions including anger), the amygdala (harm alarm), and the hippocampus (memory). When the reward circuit gets hijacked by a drug like alcohol or oxycodone, it will also impact those areas the reward circuit interfaces with. As a result, emotions, motivations and inhibitions can get derailed. Memories can be perceived differently. The ability to feel pleasure is decreased. The processing of threatening behavior and physical harm can be greatly diminished.

The nucleus accumbens is a dopamine-rich nucleus. When the nucleus accumbens is stimulated by an opioid or another controlled substance, dopamine gets released. When somebody eats a piece of chocolate or views a beautiful sunset or falls in love, dopamine gets released, which feels good. The stronger the drug the more dopamine is released by the nucleus accumbens.

Drugs like cocaine and oxycodone release huge amounts of dopamine, causing a euphoric effect. Neural circuits try to stay in balance or homeostasis. Overstimulation of the nucleus accumbens will over time decrease the amount of dopamine that gets released. This is one reason why more of a drug such as an opioid is needed to get the initial euphoria that was felt. It is also thought that a person with a genetic susceptibility to addiction has an inherent hypo-dopaminergic response to natural stimuli.

Three Etiologies

The three etiologies for addiction are a genetic predisposition, exposure to the drug, and adverse childhood experiences. There is no single gene for addiction; it involves multiple genes on multiple chromosomes.





Suffice to say, children of alcoholics are four times more likely to develop alcoholism, whether they live in the same household as their alcoholic biologic parent or were adopted away at birth to a non-alcoholic home. Exposure to the substance is required for addiction to occur; one cannot develop alcoholism if they've never been exposed to alcohol, no matter how strong their genetic predisposition.



Recent work has shown that the quantity of adverse childhood experiences (ACEs) correlates with the development of addiction and other chronic diseases. This is very significant as ACEs have a dire effect on morbidity and mortality. An ACE is a single episode of physical, emotional, or sexual abuse. Other ACE examples are physical or emotional neglect, bullying, having mental illness, divorce, an incarcerated relative in the family, or violence in the home. One event equals one ACE, so a child who is emotionally neglected at home, bullied at school, has an older brother who is incarcerated, and whose parents are divorced has an ACE score of at least 4. An ACE score of 4 to 5 increases the risks of alcoholism seven times, that individual is four times as likely to have emphysema, twice as likely to get cancer, and six times more likely to have precocious sex. Having an ACE score of 6 or higher shortens the expected life span by 20 years and increases the likelihood of a suicide attempt by 30 times. A high ACE score also correlates with the development of depression, diabetes, heart disease, obesity, and increased risk for intimate partner violence. The negative impact of an elevated ACE score necessitates getting a childhood, social, and family history prior to prescribing a controlled substance to better understand the increased risk of addiction.

The reason controlled substance medications are scheduled by the DEA is based on their potential for addiction. A schedule II medication has a higher potential for addiction than a schedule V medication. The controlled substance scheduling identifies the addiction risk for the medications. The only way to know the addiction risk for a patient is by taking a thorough history with screening tools.

Patients with an active Substance Use Disorder are highly motivated to obtain the substance they are addicted to. The severity of the cravings associated with an addiction are analogous to the need for breathing oxygen while underwater. It's a powerful, visceral response that defies reason, morals, and consequences. Patients with addiction are much more driven to obtain prescriptions by deceit than healthcare practitioners are trained to intercede.



Patients with a history of addiction can also be in recovery from that addiction. Recovery is a process that begins with abstinence from their drug of choice. Recovery can include 12-step programs, working with a sponsor, and going to meetings. Most patients in recovery will not request or even permit the use of controlled substances when a non-opioid analgesic will suffice. Patients in recovery from addiction are very knowledgeable about pharmacology. It is imperative to discuss analgesic options with your patients. Addiction is one disease with many faces, so even though a patient may identify themselves as alcoholic, any mood-altering drug that stimulates the nucleus accumbens can potentially cause a relapse.

The Case for the CSMD

Let's go back to the case of 89 prescriptions in 90 days. I'm using this actual case here to introduce and reinforce the importance of utilizing our state's Prescription Monitoring Program called the Control Substance Monitoring Database (CSMD). This case also illustrates how healthcare providers get exploited for their prescription-writing capability. It may be the most severe case of Doctor Shopping we are aware of, but almost every practicing dentist or healthcare practitioner with prescriptive authority has been duped for controlled substances. There is no way to know the actual numbers, but we can confidently say it occurs with much more prevalence than one wants to believe.

Many patients are poor historians when it comes to their own medical and prescription history. The CSMD collects and maintains data regarding all dispensed controlled substances and is designed to provide dentists and other healthcare practitioners with an accurate and comprehensive view of their patient's controlled substance prescription history. The CSMD is also used to assist in statistical analysis and criminal investigations involving controlled substances.

The CSMD was established under the Controlled Substance Monitoring Act of 2002. CSMD Data collection began on December 1, 2006. The Prescription Safety Acts of 2012 and 2016 enhanced data collection and accessibility.

The CSMD is by far the most useful state-sponsored clinical tool to screen for patients at risk for a Substance Use Disorder. But like any tool, the CSMD is only as good as the tool's user. It certainly does not do anyone any good if it's not utilized.

Overprescribing

The patient who fills 89 controlled substance prescriptions in a 90-day period is an extreme example of overprescribing. We can describe the overprescribing problem as a combination or sum total of Misprescribing, Aberrant Behavior, and Addiction. Misprescribing is prescribing controlled substance in quantities or frequency inappropriate for the complaint or illness. Examples include prescribing large quantities of medication that are not clinically indicated and authorizing early refills without an appropriate clinical reason. There are 10 categories of misprescribing that were developed for the Prescribing Controlled Drugs course at the Center for Professional Health at Vanderbilt University. All 10 categories begin with the letter D:



- **Duped:** The clinician doesn't look for or detect deception.
- **Dated:** The clinician fails to keep current.
- **Dysfunctional:** The clinician can't say no.
- **Dismayed:** A prescription is used to make up for lack of time.
- **Dishonest:** No medical reason for the prescription except financial gain.
- **Disabled:** The clinician has impaired judgment.
- **Disempowered:** The clinician has a skewed perception of power.
- **Disorganized:** No system in place to track prescriptions.
- **Disregard for Scope:** The clinician is practicing out of their specialty.
- **Dodging:** A prescription refill is used to avoid a patient visit

Aberrant Behavior is behavior that indicates misuse of a prescribed medication. The terms "Addiction" and "Substance Use Disorder" are used synonymously throughout this manuscript. The shortest and easiest definition of addiction is the continued use of a substance despite negative consequences. Even though addiction causes more morbidity and mortality than all other preventable diseases, physicians and dentists are poorly trained at its recognition, diagnosis, and treatment. In the DSM-51 there are 11 criteria used to describe a Substance Use Disorder (SUD). Two to three of the 11 criteria are needed to make a diagnosis and specify the severity as mild; the presence of four to five criteria make the severity moderate; six or more criteria are needed to specify the SUD as severe.

Another common term found on CSMD reports that requires definition is Morphine Milligram Equivalents (MMEs). MMEs are an equianalgesic dose of an opioid as compared to morphine. An MME represents the potency of an opiate or opioid dose relative to morphine. MMEs are used to help quantify the amount of an opioid a patient is prescribed.

“WRITING A PRESCRIPTION IS EASY; GETTING TO KNOW YOUR PATIENT IS DIFFICULT.”



For example, 10 mg of hydrocodone is equivalent to 10 mg of morphine, therefore 1 MME of hydrocodone equals 1 MME of morphine; 10 mg of oxycodone is equivalent to 15 mg of morphine, therefore it is a 1 to 1.5 ratio. Hydromorphone is four times stronger than morphine so it's a 1 to 4 ratio, i.e., 1 mg of hydromorphone is equal to 4 mg of morphine. There are smart phone apps and online calculators to determine MMEs. This link is for a free app provided by the CDC. www.cdc.gov/opioids/providers/prescribing/app.html

The CSMD patient reports provide a wealth of information beyond controlled substance prescriptions. This includes the names of the healthcare practitioners who have prescribed a controlled substance, the pharmacy that dispensed the controlled substance medication, and clinical risk indicators that warn practitioners if a patient is doctor shopping, pharmacy hopping, or is a female of childbearing age between 15 and 45 years old. The risk indicators include:

Yellow diamond: Patient received or was dispensed controlled substance prescriptions from four practitioners in the last 90 days;

Red diamond: Patient prescribed or was dispensed controlled substance prescriptions from five or more practitioners in the last 90 days;

Yellow triangle: Patient received or was dispensed controlled substance medications from four pharmacies in the last 90 days;

Red triangle: Patient received or was dispensed controlled substance medications from five or more pharmacies in the last 90 days;

Yellow box: Patient receiving between 90 and 120 Morphine Milligram Equivalents (MMEs) per day;

Red box: Patient receiving 120 or greater MMEs per day;

Pink circle: Patient is a female of childbearing age.

There are smart phone apps and online calculators to determine MMEs. This link is for a free app provided by the CDC. www.cdc.gov/opioids/providers/prescribing/app.html





The rules regarding the CSMD are all based on statute and have been promulgated by the Board of Pharmacy. These rules state that healthcare practitioners shall register for the CSMD who have a DEA number and have prescribed or dispensed controlled substances to patients more than 15 days in a calendar year. Practitioners can designate a delegate under their supervision to check the CSMD. Some Electronic Health Records (EHRs) have seamless integration with the CSMD so a keystroke gives the practitioner a report. The practitioner must check the CSMD before prescribing an opioid or benzodiazepine as a new course of treatment lasting more than three days, and at least every six months thereafter when the controlled substance remains part of the patient's treatment plan. There is no requirement to check the CSMD prior to prescribing or dispensing an opioid if the prescription is written for a three-day supply or less, and the opioid amount for the entire prescription is 180 MME or less. I think it is good practice to check the CSMD for all controlled substance prescriptions, but it is not a requirement if the amounts fall within those parameters. The practitioner should check the CSMD if they suspect doctor shopping, diversion, or other controlled substance prescription misuse. Although it's not required, I highly recommend that

all practitioners routinely self-check or obtain their own CSMD report to check for unauthorized prescriptions or incorrect information. Like any database, if the information loaded is incorrect, the information retrieved will be incorrect. The practitioner is not required to check the CSMD if the patient is receiving care in a licensed healthcare facility such as a hospital or is admitted to a residential treatment center. The practitioner should always document in the medical record when they check the CSMD.

The CSMD is a depository for controlled substance prescriptions, including opioid analgesics. The CSMD does not contain data about the three non-opioid analgesic medications – aspirin, acetaminophen, and nonsteroidal anti-inflammatory drugs (NSAIDs) – as they are not controlled substances and can be obtained over-the-counter. Most dental pain is classified as acute and nociceptive, caused by an inflammatory response, which makes the pain highly responsive to the non-opioid analgesics. Many recent studies have shown that acute, nociceptive pain caused by an inflammatory response responds well to 1000mg of acetaminophen with 400mg of ibuprofen, taken together by mouth. This regimen works better than hydrocodone or oxycodone taken alone or with acetaminophen. Stated another way, two extra-strength acetaminophen

with two over-the-counter ibuprofen work as well, if not better, than oxycodone or hydrocodone. Also, once treated, the inflammatory response causing the pain subsides in two or three days, obviating the need for more analgesic medication. Therefore, a prescription lasting longer than three days for any type of opioid or non-opioid analgesic medication is seldom needed, especially when appropriate dental treatment has been rendered.

Regimens of 1000 mg acetaminophen with 400 mg ibuprofen taken three times a day provide excellent analgesic coverage for acute inflammatory pain. Please be aware that the FDA has limited the daily amount of acetaminophen to a maximum of 3.0 gm per day. All medications have side effects. A good clinician is knowledgeable of the pharmacodynamics and pharmacokinetics of the medications they prescribe. Acetaminophen can cause liver toxicity, especially in doses greater than 3.0 gm per day. Ibuprofen like other NSAIDs deteriorates the stomach's protective mucus layer, leading to peptic ulcer disease and gastritis. Not only are the non-opioid analgesics more efficacious for acute inflammatory pain, they also carry no risk of addiction.

Summary

Writing a prescription is easy; getting to know your patient is difficult. When writing a prescription for a controlled substance it is imperative to know if your patient is at risk for the development of addiction, active in their addiction, or in recovery from addiction. Each scenario needs to be treated differently. The only way to ascertain the risk is by getting a complete history and by checking the CSMD. Most dental pain is acute and caused by the inflammatory process. The non-opioid analgesics work as well, if not better, than controlled substances for this type of pain. If after thorough evaluation, history, and CSMD check you determine that an opioid analgesic is indicated, use the lowest dose and shortest duration possible to cover the patient's analgesic requirements.

1. American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. <https://doi.org/10.1176/appi.books.9780890425596>
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