
CANNABIS: **A Promising Option for the Opioid Crisis**

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The National Cannabis Industry Association is the only national trade association advancing the interests of the legitimate and responsible cannabis industry. Our industry supports tens of thousands of jobs, tens of millions in tax revenue, and billions in economic activity in the United States. NCIA is leading the unified and coordinated campaign to ensure this emerging sector is treated fairly under federal law. For more information on NCIA, please visit TheCannabisIndustry.org.

WHAT IS THE OPIOID CRISIS?

Donna Schwier's pain began in 2007.

The dull ache that radiated up her legs spread and worsened until, as Donna puts it, "from my neck down to my toes and the tips of my fingers was all a ball of severe pain."

Diagnosing her with chronic widespread pain, her doctor prescribed her Vicodin, but the pills made her woozy and constipated and never fully kept the agony at bay.

Donna stopped working, leaving her nursing job and moving out of her Long Island apartment and into her cousin's basement.

"I didn't know where I was going to live. I didn't know what was going to happen with my career," she says. "I didn't know what I was going to do at all."

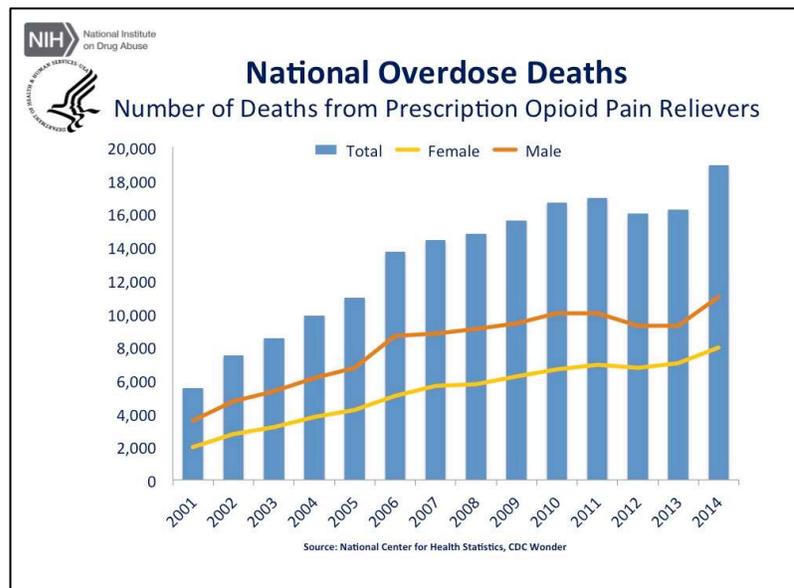
Then she found medical cannabis.

The Centers for Disease Control and Prevention have declared that the United States is in the middle of an "opioid overdose epidemic." In 2014, opioids, which are drugs used to decrease pain and include both prescription pain relievers like oxycodone as well street drugs like heroin, killed more than 28,000 people, a larger number than any previous year.¹ Now more people die from heroin and other opioid overdoses than from car crashes.

The crisis is an equal-opportunity killer – opioid overdoses are going up among all races, especially among whites and Native Americans.²

"It wasn't considered a crisis until it started impacting middle-class white people," says Amanda Reiman, manager of marijuana law and policy at the Drug Policy Alliance. "When you start to see it happening in places that are not aligning with people's expectations, folks start to notice."

Skyrocketing use of prescription pain relievers, thanks to looser prescription guidelines and aggressive pharmaceutical marketing campaigns, has helped fuel the epidemic. Since 1999, prescription opioid sales have nearly quadrupled nationwide, despite the fact that there's little data supporting such drugs' long-term use and there's been no major change in the amount of pain patients are reporting.³

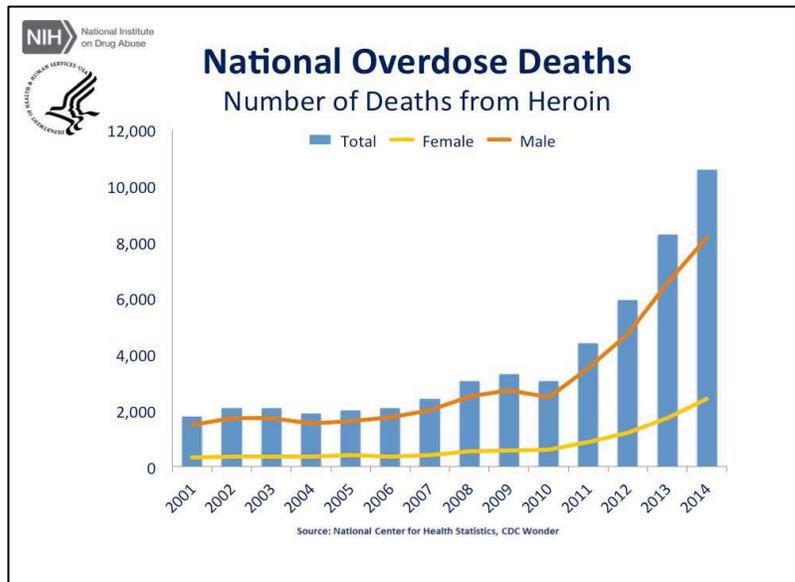


¹ "Injury Prevention & Control: Opioid Overdose." Centers for Disease Control and Prevention, 3 Oct. 2016, www.cdc.gov/drugoverdose.

² "How Bad is the Opioid Epidemic?" Frontline, 3 Oct. 2016, www.pbs.org/wgbh/frontline/article/how-bad-is-the-opioid-epidemic.

³ "Vital Signs: Overdoses of Prescription Opioid Pain Relievers --- United States, 1999--2008." Centers for Disease Control and Prevention, 3 Oct. 2016, www.cdc.gov/mmwr/preview/mmwrhtml/mm6043a4.htm.

Currently the health care, productivity and criminal justice costs of prescription opioid abuse nationwide are estimated to top \$78 billion annually.⁴



Addressing the crisis has become a bipartisan political imperative, with the Obama administration earlier this year promising \$1.1 billion in new funding to tackle the problem and signing the Comprehensive Addiction and Recovery Act (CARA), which expands access to treatment and recovery.

But CARA received less than half the funding that its backers requested, and the law focuses on post-addiction treatments. There is little emphasis on strategies that could help reduce opioid use and addiction in the first place.⁵

While opioid addiction medications such as methadone, buprenorphine, and naltrexone have proven to be successful treatments for many users, the drugs can come with debilitating side effects, and they can be costly and difficult to obtain from treatment centers.

Of the 2.5 million Americans who abused opioids in 2012, less than a million received medication-assisted treatments that year.⁶

⁴ Florence, Curtis S. et al. "The Economic Burden of Prescription Opioid Overdose, Abuse, and Dependence in the United States, 2013," *Medical Care*, vol. 54 no. 10, 2016, pp. 901-906.

⁵ "Medical Cannabis Access for Pain Treatment: A Viable Strategy to Address the Opioid Crisis." Americans for Safe Access, 2016.

⁶ Volkow, Nora D. et al. "Medication-Assisted Therapies — Tackling the Opioid-Overdose Epidemic." *N Engl J Med*, vol. 370, no. 22, 2014, pp. 2063-2066.

CAN CANNABIS HELP REDUCE PRESCRIPTION OPIOID USE?

During his eight-year NFL career, offensive lineman Kyle Turley became dependent on opioid pain killers, which he says contributed to his struggles with anxiety, depression and suicidal thoughts.

But now, thanks to medical cannabis, he's not just managing the side effects of the 100-plus concussions he suffered on the field. He's also weaned himself off many of the pharmaceuticals he'd been prescribed.

"Cannabis saved my life," he says.

"I was a day away from suicide and checking out altogether. It gave me my life back, gave me my family back, and helped me get off all of the pills."

Medical cannabis has long been seen as a potential alternative to prescription painkillers, since its analgesic, or pain-relieving, effects have been well documented.

In 2010, the Center for Medicinal Cannabis Research at the University of California concluded, after a decade of clinical studies on the matter, that "we now have reasonable evidence that cannabis is a promising treatment in selected pain syndromes caused by injury or diseases of the nervous system, and possibly for painful muscle spasticity due to multiple sclerosis."⁷

A 2015 review of 38 randomized controlled trials evaluating cannabinoids in pain management found that in 71 percent of the studies, "cannabinoids had empirically demonstrable and statistically significant pain-relieving effects."⁸

It's also scientifically established that cannabis is far safer than any opioid, prescription or otherwise; while heroin has a lethal dose that is just five times its effective dose and codeine can be lethal at 20 times its effective dose, no one knows the lethal toxicity of cannabis, because there's never been a documented case of a cannabis overdose death.⁹

What's more, scientists have found that when used in combination with prescription painkillers, cannabis can increase the pain-relieving properties of opioids and lower negative side effects.¹⁰

"There is a lot of data suggesting if you pair high-potency cannabinoids with opioids, you get an enhanced effect," says Kelly Dunn, a professor of behavioral pharmacology at Johns Hopkins University. "So you don't need as many opioids to reduce pain." Reducing opioid use could lower the potential for abuse.

It's why doctors like Dustin Sulak, an osteopathic physician in Maine who specializes in medical cannabis, have found cannabis lowers their patients' dependence on opioids.

⁷ Grant, Igor et al. "Report to the legislature and governor of the state of California presenting findings pursuant to SB847 which created the CMCR and provided state funding." University of California, 2010.

⁸ Baron, Eric P. "Comprehensive Review of Medicinal Marijuana, Cannabinoids, and Therapeutic Implications in Medicine and Headache: What a Long Strange Trip It's Been..." *Headache*, vol. 55, no. 6, 2015, pp. 885-916.

⁹ Gable, Robert. "The Toxicity of Recreational Drugs." *American Scientist*, vol. 94, no. 3, 2006, pp. 206-208.

¹⁰ Abrams, Donald et al. "Cannabinoid-Opioid interaction in chronic pain." *Clinical Pharmacology & Therapeutics*, vol.90, no. 6, pp. 844-851.

“Usually if a patient is taking opioids, you expect them to come back and ask for more, because their effectiveness diminishes over time,” he says. “But we saw patients using cannabis decreasing and stopping their use of opioids without even being asked to. None of us had seen anything like it in any area of medicine.”

A survey of 542 of his patients using cannabis alongside opioids found that 39 percent reduced their opioid dosage and another 39 percent stopped using opioids altogether.¹¹

That could be why a 2016 analysis of prescription drugs sold under Medicare Part D from 2010 to 2013 found that drug sales were markedly lower in the 17 states that then had medical cannabis laws, particularly when it came to painkillers.

On average, the typical physician in a medical cannabis state prescribed 1,826 fewer pain pill doses each year.

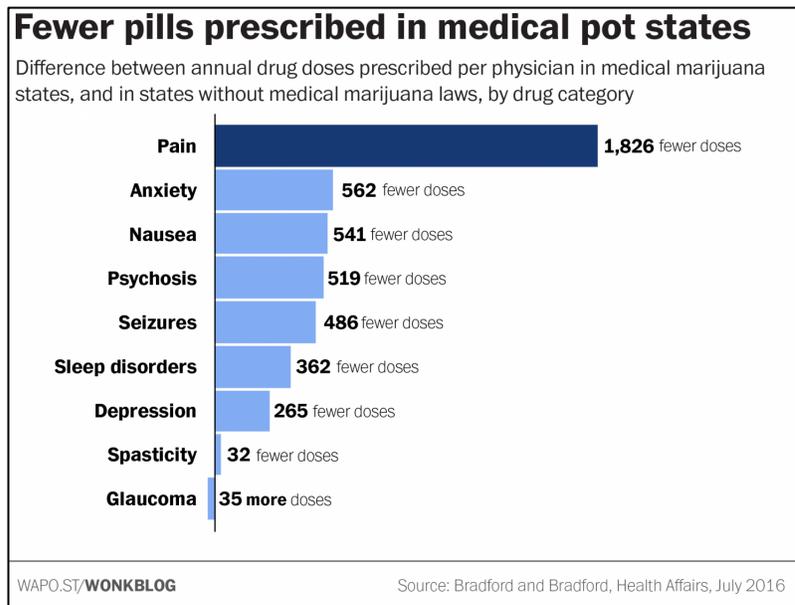


Chart Source: Washington Post

“The results were very robust, particularly for pain medications,” says W. David Bradford, University of Georgia professor and co-author of the study. “This is one more piece of evidence that people are treating marijuana like medicine.”

All in all, the study’s authors concluded that state medical cannabis programs were responsible for \$165.2 million in Medicare prescription savings in 2013.¹²

¹¹ “The Cannabis and Opioid Survey.” Healer.com, 4 Oct. 2016, www.healer.com/the-cannabis-and-opioid-survey

¹² Bradford, Ashley C. and W. David Bradford. “Medical Marijuana Laws Reduce Prescription Medication Use In Medicare Part D.” *Health Affairs*, vol. 35, no. 7, 2016, pp. 1230-1236.

Jack Stiegelman returned from a 2004 deployment in Afghanistan with a debilitating back injury, for which doctors prescribed daunting amounts of morphine and muscle relaxants. But the medications never felt right.

“It wasn’t making my back better,” he says. “I was just numb for hours.”

Nor did the pills help with the PTSD that caused him to wake up screaming in the middle of the night and physically threaten his squad leader.

Eventually, doctors cut off his pharmaceuticals, causing him to buy pain meds on the black market for years.

Relief only came when Jack began using medical cannabis, which allowed him to kick his opioid habit.

“The rage wasn’t there anymore,” he says. “It helped with the stabbing pains and relaxed my back spasms, and it helped me think clearly and stay in tune with my body.”

On top of that, according to a draft follow-up paper looking at Medicaid drug sales, medical cannabis was responsible for \$178.5 million in 2014 Medicaid prescription savings.¹³

Declining opioid sales could be one of the main reasons why major pharmaceutical companies are fighting cannabis reforms.

Purdue Pharma, the maker of OxyContin, and Abbot Laboratories, the company behind Vicodin, have been among the largest donors to the anti-cannabis organization Partnership for Drug-Free Kids, and various opioid manufacturers have also donated to a similar operation, the Anti-Drug Coalition of America.¹⁴

In August 2016, the opposition campaign to Arizona’s ballot initiative seeking to tax and regulate cannabis received a \$500,000 donation from Insys Therapeutics, Inc., which is developing a synthetic cannabis product and manufactures the powerful opioid painkiller Fentanyl, which is estimated to have 80 times the potency of morphine.¹⁵

CAN CANNABIS HELP REDUCE OPIOID ABUSE AND OVERDOSES?

Evidence is mounting that cannabis can also help reduce opioid abuse and addiction, since users of opioids, both legal and illegal, view cannabis as a safer alternative.

A 2015 study of 653 illicit injection opioid users in Los Angeles and San Francisco found that those who consumed cannabis used significantly less opioids in a 30-day period than those who didn’t.¹⁶

A 2016 report from Castlight Health, a San Francisco health care information company, found that in states with medical cannabis laws, only 2.8 percent of those with an opioid prescription qualified as abusers, compared to 5.4 percent of opioid users in states without medical cannabis laws.¹⁷

A 2015 working paper from the RAND Bing Center for Health Economics found that states with medical cannabis dispensaries reported a 28 to 35 percent reduction in opioid

¹³ Bradford, Ashley C. and W. David Bradford. “State Medical Marijuana Laws and Prescription Drug Use in Medicaid.” In preparation, 2016.

¹⁴ Fang, Lee. “The Real Reason Pot Is Still Illegal.” *The Nation*, July 2014.

¹⁵ Ingraham, Christopher. “A maker of deadly painkillers is bankrolling the opposition to legal marijuana in Arizona.” *The Washington Post*, 9 Sept. 2016.

¹⁶ Kral, Alex et al. “Is cannabis use associated with less opioid use among people who inject drugs?” *Drug and Alcohol Dependence*, vol. 153, pp. 236-41.

¹⁷ “The Opioid Crisis in America’s Workforce.” Castlight Health, 2016. <http://www.castlighthealth.com/typ/the-opioid-crisis/>

addiction treatment admissions, plus a 16 to 31 percent reduction in opioid overdose deaths.¹⁸

The most striking data, however, comes from a 2014 study of lethal opioid overdoses between 1999 and 2010.

That survey found that the 13 states with medical cannabis laws during that period had 25 percent fewer opioid deaths than other states. What's more, the effect of medical cannabis appeared to strengthen over time – overdose death reductions grew from roughly 20 percent the first year after medical marijuana implementation to nearly 34 percent five years after implementation.¹⁹

“We think that this points towards cause and effect, although you can never say it with 100-percent certainty,” says Marcus Bachhuber, lead author of the study.

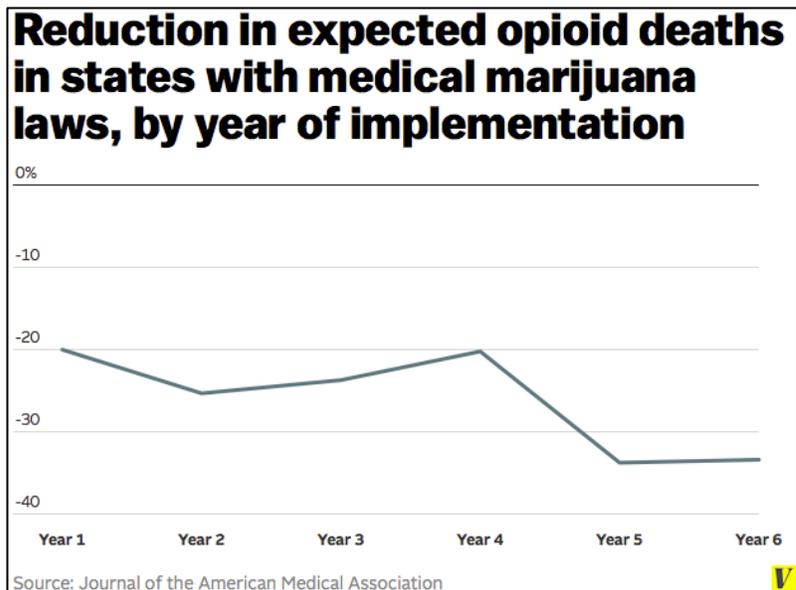


Chart Source: Vox

Bachhuber's findings were recently bolstered by an analysis of federal crash data that found that states with medical cannabis laws have also experienced a reduction in opioid-related fatal car accidents.²⁰

Cannabis might not just help reduce opioid addiction; it might also prove to be a useful treatment for it, since cannabis is often used to treat conditions that are common symptoms of opioid withdrawal, such as nausea, anxiety, and muscle pain.

¹⁸ Powell, David et al. "Do Medical Marijuana Laws Reduce Addiction and Deaths Related to Pain Killers?" RAND Bing Center for Health Economics, 2015.

¹⁹ Bachhuber, Marcus et al. "Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in the United States, 1999-2010." *JAMA Internal Medicine*, vol. 174, no. 10, 2014, pp. 1668-1673.

²⁰ Kim, June et al. "State Medical Marijuana Laws and the Prevalence of Opioids Detected Among Fatally Injured Drivers." *American Journal of Public Health*, 2016.

Police caught Devin Butts with cannabis paraphernalia at age 17, putting him on probation in his home state of Texas.

He started taking hydrocodone pills he received from his neighbor, because the prescription opioids were easier than cannabis to clear from his system before his court-mandated drug tests.

When the hydrocodone became too expensive, he moved on to meth, then crack cocaine.

He spent time in and out of jail and lived on and off the street.

He doesn't blame cannabis for what happened to him; he blames harsh cannabis laws.

It's why Devin, now 25, moved to Colorado, to use legal cannabis as he worked his way off his drug habits.

"I'm going to get clean, man," he says. "That's what the marijuana industry is for."

A 2013 Thomas Jefferson University study of 91 patients receiving methadone treatments discovered that those patients who also used cannabis experienced the fewest withdrawal symptoms.²¹

A 2009 study of rats that were taught to self-administer heroin found that once the rats were taken off the drug for two weeks, animals that were treated with cannabidiol were markedly less likely to seek out heroin again.²²

Opioid addiction treatment, in fact, could become a new opportunity for the growing medical cannabis market.

"Treatment for opioid addiction is an industry in itself," says Reiman at the Drug Policy Alliance. "If we as an industry can embrace this kind of natural, low-cost treatment for people who are looking for a way off of opioids, that is a whole part of the industry we haven't really seen yet."

WHY IS CANNABIS BEING BLAMED FOR THE OPIOID CRISIS?

Anti-marijuana advocates often use the opioid crisis as an argument against legalization.

In Vermont, concerns about opioids helped derail the state legislature's efforts to create a legal, regulated adult-use cannabis program there in early 2016.

"The shadow of the heroin epidemic is something that people think about when they think about the legalization, and they ask themselves, 'Are we sending the right message about legalization?'" Shap Smith, Vermont's speaker of the House, told the *New York Times* in April. "I think in the public's mind, it's making passage of this bill more difficult."²³

In an op-ed announcing their opposition to the cannabis legalization measure on Massachusetts' 2016 ballot, Governor Charlie Baker, Attorney General Maura Healey and Boston Mayor Martin Walsh explicitly noted their state's opioid epidemic as a reason for their objections.

"For the past year, our teams have worked tirelessly, together and with our partners across Massachusetts, to combat the heroin and prescription-drug epidemic that is ravaging our

²¹ Scavone, Jillian L. et al. "Impact of Cannabis Use during Stabilization on Methadone Maintenance Treatment." *The American Journal of Addictions*, vol. 22, no.4, 2013, pp. 344-351.

²² Ren, Yanhua et al. "Cannabidiol, a Nonpsychotropic Component of Cannabis, Inhibits Cue-Induced Heroin Seeking and Normalizes Discrete Mesolimbic Neuronal Disturbances." *The Journal of Neuroscience*, vol. 29, no. 47, 2009, pp. 14764-14769.

²³ Bidgood, Jess. "Marijuana Legalization in New England Is Stalled by Opiate Crisis," *New York Times*, 19 April 2016, p. A11.



state...We should not be expanding access to a drug that will further drain our health and safety resources.”²⁴

But the concept of marijuana as a “gateway drug,” leading to increased use of opioids or other narcotics, has been largely debunked.

A 1999 report from the Institute of Medicine, for example, noted “[marijuana] does not appear to be a gateway drug to the extent that it is the cause or even that it is the most significant predictor of serious drug abuse.”²⁵

A 2010 Rand Drug Policy Research Center working paper on cannabis coffee shops in the Netherlands concluded that legalized cannabis appeared to create a “weakened gateway” to other drugs, since Dutch cannabis users were less likely to have tried cocaine and amphetamines than other European countries.²⁶

One reason for this phenomenon could be that Dutch cannabis users had less contact with drug dealers and addicts; another reason could be that it’s not cannabis that functions as a gateway to hard drugs, but cannabis prohibition. Thanks to the illegality of cannabis, some people might turn to opioids and other hard drugs because traces of these substances aren’t as likely to show up on mandatory drug tests.

In comparing the two, it’s also important to understand that the biological mechanisms behind the effects of cannabis and opioids are very different.

Cannabinoids and other chemical components of cannabis function by targeting cannabinoid receptors throughout the body that are involved in regulating physiological processes such as appetite, pain perception, mood, and memory.

Opioids, however, reduce pain by targeting opioid receptors, a process that rapidly increases opioid tolerance levels and can become highly addictive.²⁷

²⁴ Baker, Charlie. “Mass. should not legalize marijuana.” *The Boston Globe*, 4 March 2016.

²⁵ Joy, Janet. *Marijuana and Medicine: Assessing the Science Base*. The National Academies Press, 1999.

²⁶ MacCoun, Robert J. “What Can We Learn from the Dutch Cannabis Coffeeshop Experience?” *Addiction*, vol. 106, no. 11, 2011, pp. 1899-1910.

²⁷ “How do opioids affect the brain and body?” National Institute of Drug Abuse, 3 Oct. 2016, <https://www.drugabuse.gov/publications/research-reports/prescription-drugs/opioids/how-do-opioids-affect-brain-body>

WHAT NEEDS TO BE DONE?

Cannabis could become a powerful tool in the fight against the opioid crisis, but much work on the matter remains. Policy-makers tackling the crisis should take steps on several levels.

WORK FOR FEDERAL CANNABIS REFORMS

- *Deschedule marijuana.* Marijuana should be removed from the Controlled Substances Act, so that researchers will be able to thoroughly conduct the necessary research into the potential of cannabis as an analgesic, opioid replacement, and addiction treatment. Descheduling marijuana, which would allow states to set and enforce their cannabis policies without federal interference, would also protect patient access to cannabis for pain management and other treatments.
- *Allow V.A. doctors to discuss medical cannabis.* Veterans Affairs physicians are currently forbidden to discuss medical marijuana with their patients, even in states where medical cannabis access is legal. Veterans frequently struggle with chronic pain, injuries, PTSD and other psychological disorders, and heavy prescription opioid use or abuse – all conditions for which medical marijuana can be beneficial. V.A. doctors should be able to converse candidly with their patients about all their treatment options.
- *Allow cannabis banking to create safer conditions for access.* Due to federal regulation of financial institutions, most cannabis providers are denied access to basic banking services, forcing them to operate entirely in cash. Banks should be allowed to serve state-compliant cannabis businesses in order to alleviate the significant public safety challenges an all-cash business creates for providers, their patients, and the regulators overseeing them.

SUPPORT STATE-LEVEL EFFORTS TO OPEN UP AND REGULATE ACCESS TO CANNABIS

Marijuana policy reform is currently happening primarily at the state level, through both ballot initiatives and legislative action. There are many legitimate and beneficial reasons that states choose to create regulated programs for cannabis access.

For policy-makers focused on addressing and reducing the opioid crisis in their states, there is now powerful evidence that they should support increased cannabis access for that reason.

For Donna Schwier, taking medical cannabis changed everything.

Her debilitating pain was kept at bay, and the nausea and disorientation from her pain pills became manageable.

She had a life again, and she decided in exchange she would become an active member of Compassionate Care NY, advocating for the rights and needs of other patients in New York.

“I grabbed myself and said, ‘You have to live,’” she says.

“So I chose to live.”



INCLUDE CHRONIC PAIN AS A QUALIFYING CONDITION IN ALL STATE MEDICAL CANNABIS LAWS

Lawmakers such as Senator Elizabeth Warren²⁸ and Congressman Earl Blumenauer²⁹ support using medical cannabis as a pain treatment to combat the opioid epidemic.

In June 2016, Vermont Governor Pat Shumlin added chronic pain to his state's list of qualifying conditions, noting, "At a time when opioid addiction is ravaging our state and drug companies continue to urge our doctors to pass out painkillers like candy, we need to find a more practical solution to pain management."³⁰

But of the 26 full medical cannabis programs nationwide, only three-quarters currently include chronic pain as a qualifying condition, and several place restrictions on what sort of chronic pain can qualify.³¹

REJECT FALSE "GATEWAY THEORY" ANTI-MARIJUANA RHETORIC

Those who oppose increasing legal cannabis access because of the opioid epidemic are not just advancing a false theory; they're standing in the way of a highly promising alternative for people struggling with opioid use and abuse.

Scientific research, as well as personal stories of those who've used cannabis to decrease or stop opioid use, rejects the "gateway theory," and policy-makers should do so as well.

LOWER THE COST AND EXPAND ACCESS TO CANNABIS FOR THOSE WHO NEED IT

Insurance companies need to recognize cannabis as a promising and safe alternative to opioid painkillers, and addiction treatment programs should include cannabis in their arsenal of substance abuse treatment options.

Doing so is not just a social good; it could equal millions in health care cost savings.

²⁸ Warren, Elizabeth. Letter to CDC re Opioid Epidemic Research, 8 February 2016, www.warren.senate.gov/files/documents/2016-2-8_Letter_to_CDC_re_opioid_epidemic%20research.pdf

²⁹ "Blumenauer on Opioid Abuse Epidemic," C-Span, 24 February 2016, www.c-span.org/video/?c4582196/blumenauer-opioid-abuse-epidemic

³⁰ "Gov. Shumlin Signs Law Expanding Vermont's Successful Medical Marijuana Program," Office of Governor Peter Shumlin, 7 June 2016, www.governor.vermont.gov/press-release/gov-shumlin-signs-law-expanding-vermonts-successful-medical-marijuana-program

³¹ "Marijuana and Opiates," Drug Policy Alliance, August 2016, http://www.drugpolicy.org/sites/default/files/DPA_Fact%20Sheet_Marijuana_and_Opiates_August_2016.pdf



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