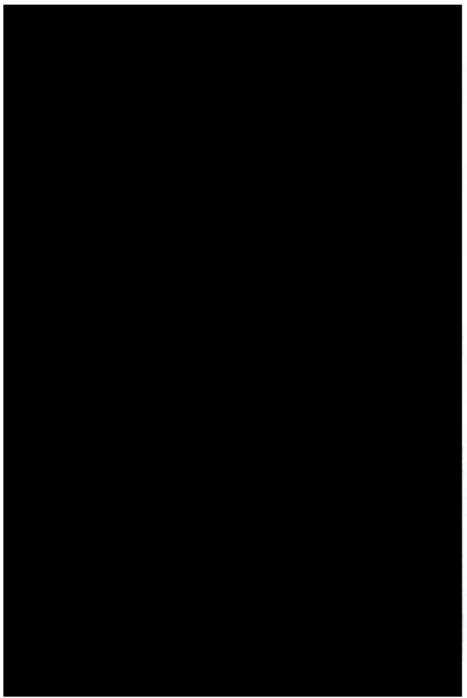

PETITION TO THE NM MEDICAL ADVISORY BOARD TO THE NEW MEXICO MEDICAL CANNABIS PROGRAM TO ADD OPIATE DEPENDENCE AS A QUALIFYING CONDITION

[redacted]

1/18/19

I am resubmitting a petition previously submitted by [redacted] requesting that Opioid Dependence be added to the list of qualifying conditions for New Mexico's Medical Cannabis Program. Although this indication was previously recommended by the Medical Advisory Board, Secretary Lynn Gallagher denied the petition. Secretary Gallagher chose to blindly support Governor Martinez' deranged fear of Cannabis, and their criminally negligent behavior and dereliction of duty to protect the safety and welfare of the citizens of New Mexico has exacerbated the opioid overdose epidemic. Below is Anita's petition, with which I fully support and concur. Adding opioid dependence as an indication clearly complies with the intent of the Lynn and Erin Compassionate Use Act.

Thank you for your consideration,

[redacted]

"Over this past year I have observed that about 25% of my patients have stated *independently* that they were able to kick opiates with cannabis. They state it calms down their cravings, relaxes their craving anxiety and is helping them to stay off of opiates. if they are in pain, cannabis is helping relieve their pain, often to the point that they don't need opiates any more. I began researching the medical literature more deeply to determine what it is about cannabis that's helping.

I also started counting, and asking my cannabis-prescribing colleagues if they're observing the same thing, and they too are stating that their patients have been able to kick opiates with cannabis. Together we have approximately 400 patients who have been successful quitting opiates, using cannabis.

I am here today to petition you to add opioid dependence to the list of qualifying conditions for medical cannabis.

Attached is the research I did, each citation has a brief description by myself of the studies that have been done both in the United States, and internationally. Articles from prestigious peer-reviewed medical journals and popular media included:

Six articles from Journal of the American Medical Association

American Journal of Public Health

physician prescribe Suboxone to my patient from Espanola, he was murdered for his Suboxone.

Patients are very motivated to get off of heroin, but getting into medication assisted treatment is very difficult. One of my patients from Clovis has to drive to Albuquerque every week to get her Suboxone. There is a shortage of medication assisted treatment providers. I wish to stress that I am aware that medication assisted treatment (methadone and Suboxone) is the standard of care, and I am not looking to replace it with cannabis. But the research shows that cannabis works well as a complimentary treatment. Having access to cannabis would be a great help to our patients. Also, referring for cannabis is a harm reduction intervention that can help to link people with medication assisted treatment, harm reduction (syringe exchange and naloxone especially), mental health care services and medical care (such as treatment for hepatitis C).

This move would also be a rich opportunity to begin doing research in New Mexico, particularly prospective studies on opiate use, overdose and death reduction.

Why add opiate dependence as a qualifying condition? Here are some answers.

It has been proven by medical research to work.

The patients are using cannabis to treat their dependence anyway.

Arresting and imprisoning them for using cannabis to stop using opiates is expensive for NM.

Medication assisted treatment is difficult to get into, sometimes with very long waiting periods to get into the program, as well as having to drive long distances.

We owe this to our patients. A treatment modality that is within close reach is unattainable because it's illegal.

Research views medical cannabis as legitimate harm reduction. Using this model, cannabis is much less dangerous to the patient and his/her community than the heroin and Fentanyl that is now on the streets and is often more readily accessible and affordable.

Our state's program has often been a model that other states are following as they legalize medical cannabis. We are a leader in this effort! Let's continue to lead and be innovative, and use solutions that work.

While developing this petition, some questions came to mind that you might ask:

How do we know it's not just a pothead lying about opiate abuse so they can get a card to use cannabis for purely recreational use?

How are providers that refer going to monitor their patients and track their opiate use?

The answer to the first question is for providers to strictly adhere to the DSM 5 criteria for diagnosis of opiate abuse.

As far as monitoring the patients, I would build into the program the requirement that the provider must follow up by phone or face to face with the patient to track their opiate use, as well as educate the client about using cannabis to cut down on withdrawal symptoms. We would also have the patient keep a journal of their opiate use as their treatment cannabis is progressing, and report back to us. We would endeavor to help our patient get into medication assisted treatment, if needed.

You may be aware that Maine attempted to add opiate dependence to their list of qualifying conditions this summer, and failed, due to "lack of evidence". I am here to tell you that the bibliography I have developed shows beyond a shadow of a doubt that there is an abundance of robust research on the topic. New Mexico can and should lead the way in taking advantage of this opportunity to give opiate dependent patients access to medical marijuana.

I encourage the Medical Advisory Board to review this petition for inclusion of opiate addiction into the current list of qualifying conditions for the Medical Cannabis Program. The risks would surely be outweighed by the possibility improving lives or even saving just one life. We have an opportunity to explore and lead the nation in researching what could be a compassionate, and revolutionary treatment for addiction.

In concluding, I ask that you as the Medical Advisory Board consider adding opiate dependence as a qualifying condition. I know there are forces out there such as the pharma industry, with what they're doing in Arizona (lobbying to keep cannabis illegal), the private prison lobby, as well as other strong anti-cannabis forces in this state that want to hold back progress for treatment. My colleagues, myself, and all our patients ask that you DO NOT buckle under these forces and do the right thing by allowing opiate dependence to be on the list of qualifying conditions for use of medical cannabis.

Thank you very much, "

[redacted]

BIBLIOGRAPHY

USING CANNABIS FOR OPIATE DEPENDENCE TREATMENT: WITHDRAWAL AND MAINTENENCE

Can Marijuana Treat Heroin Addiction?
Caregivers in Maine want to give medical marijuana a try.
https://www.merryjane.com/health/can-marijuana-treat-heroin-addic

Maine is the first state whose government is seriously considering opening up the medical marijuana program to opioid addicts, which would add to the dozen or so current qualifying medical conditions. The support is mounting as more recovering addicts turn to cannabis and share their stories online

Note: Maine rejected the petition due to "lack of evidence."

Study: Long term cannabis use mitigates pain, reduces opioid use
Martinelli, A
NORML http://thejointblog.com

Study of 176 patients resulted in improved pain, sleep, quality of life, as well as reduced opioid use.

Amygdala activity contributes to the dissociative effect of cannabis on pain perception
Lee MC, Ploner M, Wiech K, Bingel U, Wanigasekera V, Brooks J, Menon DK, Tracey I.Pain. 2013 Jan;154(1):124-34. doi: 10.1016/j.pain.2012.09.017.PMID: 23273106 [PubMed - indexed for MEDLINE]

THC reduced functional connectivity between the amygdala and primary sensorimotor areas during the ongoing-pain state. Critically, the reduction in sensory-limbic functional connectivity was positively correlated with the difference in drug effects on the unpleasantness and the intensity of ongoing pain. Peripheral mechanisms alone cannot account for the dissociative effects of THC on the pain that was observed. Instead, the data reveal that amygdala activity contributes to individual response to cannabinoid analgesia, and suggest that dissociative effects of THC in the brain are relevant to pain relief in humans.

America's Opiate Crisis: How Medical Cannabis Can Help By Dr. Dustin Sulak on July 25, 2016
Dr. Dustin Sulak on a neglected treatment for opioid addiction: medical cannabis
https://www.projectcbd.org/article/americas-opiate-crisis-how-medical-cannabis-can-help

Forty-four people die every day from prescription opioid overdose in America. Almost 7,000 people are treated in emergency rooms in the United States every day for misuse of a prescription opioid.
States with medical cannabis laws on average reduced opioid overdose deaths by 24.8 percent. And each year after the medical cannabis law was passed, the rate of opioid overdose deaths continued to decrease, according to a report in the Journal of the American Medical Association. Prescription opioid abuse is actually worse than heroin abuse. In 2014, there were around 19,000 overdose deaths from opioid prescriptions and around 11,000 overdose deaths from

heroin. Nearly 80 percent of heroin users in the United States reported using prescription opioids before initiating heroin use.
Extensive scientific, randomized controlled trials have shown that a cannabis oil extract can be an effective treatment for chronic neuropathic pain.

- *Cannabis improves the pain relief that opioids provide. Medical scientists have found that administering opioids and cannabis together results in a greater-than-additive anti-pain effect, a synergistic reduction of pain.*
- *Cannabis makes opioid therapy safer by widening the therapeutic index so that a patient needs less opioids to get a strong analgesic effect.*
- *Cannabis can prevent opioid tolerance building and the need for dose escalation.*
- *Cannabis can treat the symptoms of opioid withdrawal—nausea, vomiting, spasms, cramping, insomnia. Cannabis users experience decreased opioid withdrawal severity.*
- *Cannabis can replace and reduce the use of opioids and other substances. Many patients use cannabis as a substitute for prescription drugs, illicit drugs, or alcohol.*
- *Cannabis therapy is safer than the other harm reduction options.*

Medical Cannabis Use Is Associated with Decreased Opiate Medication Use in a Retrospective Cross-sectional Survey of Patients with Chronic Pain
Boehnke, KF
J Pain, March 2016 http:///www.jpain.org/article/

Cannabis use was associated with: 64% lower opioid use, better quality of life and fewer medication side effects and medications used in chronic pain patients.

Acute and short-term effects of CBD on cue-induced craving in drug-abstinent heroin-dependent humans
Hurd, Y et al
https://clinicaltrials.gov August, 2016

This study is currently recruiting participants. This research project focuses on the development of a novel compound, Cannabidiol to modulate opioid craving.

Endocannabinoid signaling system and brain reward: emphasis on dopamine
Gardner, EL
Pharmacol Biochem Behav, June, 2005

Cannabinoids activate brain reward processes and reward-related behaviors in similar fashion to other reward-enhancing drugs.

Anxiolyitc effect of Cannabidiol derivatives in the elevated plus-maze
Guimaraes,FS, Mechoulam, R et al
Gen Pharmacol, Jan, 1994
Results of this study confirm previous findings with CBD and indicate that its derivative HU-219 may possess a similar anxiolytic-like profile.

Cannabidiol is an allosteric modulator at mu- and delta-opioid receptors
Naunyn Schmiedebergs Arch Pharmacol, Feb, 2006
Kathmann M, et al

This study shows that Cannabidiol is an allosteric modulator at the mu and delta opioid receptors. This property is shared by THC

Cannabidiol inhibits the reward-facilitating effect of morphine: involvement of 5-HT1A receptors in the dorsal raphe nucleus
Katsidone, V, et al
Addict Biol, March 2013

Cannabidiol inhibited the reward-facilitating effect of morphine. Cannabidiol interferes with brain reward mechanisms responsible for the expression of the acute reinforcing properties of opioids, thus indicating that Cannabidiol may be clinically useful in attenuating the rewarding effects of opioids.

Differential effect of cannabinol and Cannabidiol on THC-induced responses during abstinence in morphine-dependent rats
Hine, B et al
Res Comun Chem Pathol Pharmacol, 1975

This study illustrates differences between psychoinactive cannabinoids in their interaction with delta 9 THC that might be relevant to possible clinical use of cannabis in narcotic detoxification

Effect of some cannabinoids on naloxone-precipitated abstinence in morphine-dependent mice
Bhargava, HN
Psychopharmacology (Berl) Sep, 1976

Signs of morphine abstinence were suppressed by cannabinoids. These data suggest that cannabinoids may be useful in facilitating narcotic detoxification

Cannabidiol, a nonpsychotropic component of cannabis, inhibits cue-induced heroin seeking and normalizes discrete mesolimbic neuronal disturbances
Ren, Y et al
J Neurosci, Nov, 2009

The findings of this study highlight the unique contributions of distinct cannabis constituents to addiction vulnerability and suggest that CBD may be a potential treatment for heroin craving and relapse

Cannabidiol for the treatment of cannabis withdrawal syndrome: a case report
Crippa, JA et al
J Clin Pharm Ther, Apr 2013

CBD can be effective for the treatment of cannabis withdrawal syndrome.

Adolescent exposure to chronic delta 9 THC blocks opiate dependence in maternally deprived rats
Morel, L et al
Neuropsychopharmacology, 2009

Results indicate that THC acts as a homeostatic modifier that would worsen the reward effects of morphine on naïve animals.

Impact of cannabis use during stabilization on methadone maintenance treatment
Scavone, JL et al
Am J Addict, Jul 2013
The findings point to novel interventions to be employed during treatment for opiate dependence that specifically target cannabinoid-opioid system interactions.

New study finds cannabis reduces the symptoms of opiate withdrawal
http://thejointblog.com July, 2013

Results suggest a potential role for cannabis in the reduction of withdrawal severity during methadone induction

Cannabidiol as an intervention for addictive behaviors: a systematic review of the evidence
Prud'homme, M et al
Subst Abuse May, 2015

* *CBD has anxiolytic, antipsychotic, antidepressant and neuroprotective properties.*
* *CBD modulates allosterically mu and delta opioid receptors.*
* *CBD inhibits conditioned cue-induced heroin seeking behavior for up to 2 weeks.*
* *CBD appears to have an impact on the intoxication phase of opioid addiction in animals by reducing the reward-facilitating effect of morphine.*
* *CBD may be worth further investigation to prevent relapse*

Science recognizes cannabis reduces withdrawal symptoms, but state laws still don't
http://theweedblog June, 2012

Recent clinical studies have revealed the value of medical cannabis as a supplement for stronger opiate painkillers. An increase in supplementary marijuana prescriptions could reduce people's chances of developing opiate addictions.

Opioid addiction being treated with medical marijuana in Massachusetts
http://www.drugfree.org/news-service Jul, 2015

Dr. Gary Witman treated 80 patients who were addicted to opioids with cannabis through a one-month tapering program. More than three-quarters of the patients stopped taking harder drugs.

Weed can alleviate withdrawal symptoms with opiate addicts
http://www.thefix.com Sep, 2014

Access to states with medical marijuana is linked with significantly lower opioid overdose mortality rates.

Top three benefits of cannabis for opiate dependence
https://sensiseeds.com Jul, 2015

Use of cannabinoids can have effects on the dopaminergic system. The dopaminergic and endocannabinoid systems are fundamentally linked. Cannabinoids can help to activate the same receptors activated by opiate use, and that by doing so, the need to use opiates is reduced.

Advocates push to let patients use marijuana to treat opiate addiction
The Portland Press Herald Apr, 2016

Dr. Dustin Sulak states that cannabinoids prevent people from building up a tolerance to opioids, so they can take fewer strong painkillers. Marijuana is also an excellent treatment for opiate withdrawal, which causes symptoms like nausea, diarrhea, muscle spasms, insomnia, and anxiety.

Early phase in the development of Cannabidiol as a treatment for addiction: opioid relapse takes initial center stage
Hurd, Y
Neurotherapeutics Oct, 2015

CBD appears to have low reinforcing properties with limited abuse potential and to inhibit drug-seeking behavior.

Is weed the secret to beating opiate addiction?
Mitchell, T et al
The Daily Beast Sep, 2014
http://www.thedailybeast.com/articles/2014

The Substance Abuse and Mental Health Services Administration (SAMSHA) describes the side effects of marijuana as sleepiness, trouble concentrating, and decreased social inhibitions. These seem mild in comparison to the harsh side effects of replacement medications.

SAFETY AND HARM REDUCTION

A safer alternative: Cannabis substitution as harm reduction Lau N, Sales P, Averill S, Murphy F, Sato SO, Murphy S.Drug Alcohol Rev. 2015 Nov;34(6):654-9. doi: 10.1111/dar.12275. Epub 2015 Apr 28.PMID: 25919477 [PubMed - indexed for MEDLINE]

Study participants described using cannabis as a safer alternative for alcohol, illicit drugs and pharmaceuticals based on their perceptions of less adverse side effects, low-risk for addiction and greater effectiveness at relieving symptoms, such as chronic pain.

Is cannabis use associated with less opioid use among people who inject drugs?Kral AH, Wenger L, Novak SP, Chu D, Corsi KF, Coffa D, Shapiro B, Bluthenthal RN.Drug Alcohol Depend. 2015 Aug 1;153:236-41. doi: 10.1016/j.drugalcdep.2015.05.014. Epub 2015 May 22. PMID: 26051162 [PubMed - indexed for MEDLINE]

There is a statistical association between recent cannabis use and lower frequency of nonmedical opioid use among PWID. This may suggest that PWID use cannabis to reduce their pain and/or nonmedical use of opioids.

Medical cannabis laws and opioid analgesic overdose mortality in the United States, 1999-2010 Bachhuber MA, Saloner B, Cunningham CO, Barry CL.JAMA Intern Med. 2014 Oct; 174(10):1668-73. doi: 10.1001/jamainternmed.2014.4005. Erratum in: JAMA Intern Med. 2014 Nov;174(11):1875.PMID: 25154332 [PubMed - indexed for MEDLINE

Medical cannabis laws are associated with significantly lower state-level opioid overdose mortality rates

Medical cannabis laws and opioid analgesic overdose mortality in the United States, 1999-2010 Bachhuber MA, Saloner B, Cunningham CO, Barry CL.JAMA Intern Med. 2014 Oct; 174(10):1668-73. doi: 10.1001/jamainternmed.2014.4005.Nov;174(11):1875.PMID: 25154332 [PubMed - indexed for MEDLINE]

Use of prescription pain medications among medical cannabis patients: comparisons of pain levels, functioning, and patterns of alcohol and other drug use Perron BE, Bohnert K, Perone AK, Bonn-Miller MO, Ilgen M.J Stud Alcohol Drugs. 2015 May;76(3):406-13.PMID: 25978826 [PubMed - indexed for MEDLINE]

PPM users rated the efficacy of cannabis higher than PPM for pain management and indicated a strong desire to reduce PPM usage.

States with medical cannabis laws had a 24.8% lower mean annual opioid overdose mortality rate (95% CI, -37.5% to -9.5%; P=.003) compared with states without medical cannabis laws.

Use of a synthetic cannabinoid in a correctional population for posttraumatic stress disorder-related insomnia and nightmares, chronic pain, harm reduction, and other indications: a retrospective evaluation Cameron C, Watson D, Robinson J.J Clin Psychopharmacol. 2014 Oct;34(5):559-64. doi: 10.1097/JCP.0000000000000180.PMID: 24987795 [PubMed - indexed for MEDLINE]

Subjective improvement in chronic pain

Medical Cannabis Use Is Associated with Decreased Opiate Medication Use in a Retrospective Cross-Sectional Survey of Patients with Chronic Pain Boehnke KF, Litinas E, Clauw DJ.J Pain. 2016 Jun;17(6):739-44. doi: 10.1016/j.jpain.2016.03.002. Epub 2016 Mar 19.PMID: 27001005 [PubMed - in process]

Among study participants, medical cannabis use was associated with a 64% decrease in opioid use (n = 118), decreased number and side effects of medications, and an improved quality of life (45%). This study suggests that many CP patients are essentially substituting medical cannabis for opioids and other medications for CP treatment, and finding the benefit and side effect profile of cannabis to be greater than these other classes of medications

.

Prescribing medical cannabis in Canada: Are we being too cautious?Lake S, Kerr T, Montaner J.Can J Public Health. 2015 Apr 30;106(5):e328-30. doi: 10.17269/cjph.106.4926.PMID: 26451996 [PubMed - indexed for MEDLINE]

"If we prescribed marijuana for our patients, we could help to eradicate the black market and drug dealers."

Cannabis as a substitute for alcohol and other drugs
Reiman, AHarm Reduction Journal Dec, 2009

The substitution of one psychoactive substance for another with the goal of reducing negative outcomes can be included within the framework of harm reduction. Medical cannabis patients have been engaging in substation by using cannabis as an alternative to alcohol, prescription, and illicit drugs. Increasing access to medical cannabis may reduce the personal and social harms associated with addiction, particularly in relation to the use of opiates. Community-based dispensaries have proven successful at supplying patients with a safe source of cannabis within an environment conducive to healing.

Cannabis as a substitute for alcohol and other drugs: A dispensary-based survey of substitution effect in Canadian medical cannabis patients
Lucas, P et al
Addiction Res Theory, 2013

Dr. Sandra Welch has been studying the interaction of opioids and cannabinoids since 1997, with promising results in animal studies showing that the two have a synergistic effect. These findings were confirmed in a study which concluded that vaporized cannabis augments the analgesic effects of opioids without significantly altering plasma opioid levels. The combination may allow for opioid treatment at lower doses with fewer side effects.

Substituting cannabis for prescription drugs, alcohol and other substances among medical cannabis patients: The impact of contextual factors
Lucas, P et al
Drug and Alcohol Review, May, 2016

The finding that cannabis was substituted for all three classes of substances suggests that the medical use of cannabis may play a harm reduction role in the context of use of these substances and may have implications for abstinence-based substance use treatment approaches.

Confirming big pharma fears, study suggests medical marijuana laws decrease opioid use
McCauley, L

A study published in the American Journal of Public Health examined data on traffic fatalities in 18 states and analyzed the cases in which the presence of opioids was detected. In states that medical cannabis laws, Columbia University researchers found a significant reduction in opioid positivity for drivers aged 21 to 40 years.

Study: Medical cannabis access associated with reduced opioid abuse
http://norml.org/news/2015/07/16

Researchers from the RAND Corporation and University of California, Irvine assess the impact of medical marijuana laws on problematic opioid use, as measured by treatment admissions for opioid pain reliever addiction and by state-level opioid overdose deaths. Conclusion: States permitting medical marijuana dispensaries experience a relative decrease in both opioid addictions and opioid overdose deaths compared to states that do not.

Legal marijuana linked to fewer opioid prescriptions
Sifferlin, A
Health Medicine, Jul, 2016

States where medical marijuana is legal, prescriptions for drugs for conditions where pot could serve as an alternative have dropped significantly, according to recent report published in the journal Health Affairs.

Could medical cannabis break the painkiller epidemic?
Hsu, J,
Scientific American, Sep, 2016

States that permitted medical marijuana had an average of almost 25 percent fewer opioid overdose deaths each year than states where cannabis remained illegal.

Opioid addiction being treated with medical marijuana in Massachusetts
Join Together Staff
Partnership for Drug-Free Kids, Aug, 2016

Dr. Witman, who works in a Massachusetts Canna Care clinic, has treated 80 patients who were addicted to opioids, with cannabis through a one-month tapering program. More than three quarters of the patients stopped taking the opiates.

Study: Cannabis improves outcomes in opioid-dependent subjects undergoing treatment
Armentano, P
http://thejointblog.com/ Dec, 2015

Participants who smoked marijuana had less difficulty with sleep and anxiety and were more likely to remain in treatment as compared to those who were not using marijuana.

The great health experiment
Barcott, B et al
TIME MAGAZINE, Aug, 2016

At Yasmin Hurd's Upper East Side lab, the rats have begun to show that given heroin-addicted rats doses of CBD found that it decreased their willingness to work hard for more heroin, suggesting that parts of marijuana could help human drug addicts stay clean.

State medical marijuana laws and the prevalence of opioids detected among fatally injured drivers
Kim, J et al
American Journal of Public Health, Sep, 2016

Operational medical marijuana laws are associated with reductions in opioid positivity among 21-40-year-old fatally injured drivers and may reduce opioid use and overdose.

Do medical marijuana laws reduce addictions and deaths related to pain killers
National Bureau of Economic Research, Jul, 2015
Powell, D et al

Our findings suggest that providing broader access to medical marijuana may have the potential benefit of reducing abuse of highly addictive painkillers.

Lower opioid overdose death rates associated with state medical marijuana laws
JAMA, Aug, 2014

Enactment of laws to allow for use of medical cannabis may be advocated as part of a comprehensive package of policies to reduce the population risk of opioid analgesics.

How cannabis can be used for safe and effective opioid drug withdrawal
Fassa, P
Health Impact News, Aug 2016

Dr. Sulak prefers a gradual withdrawal from opioids by combining daily cannabis adnopioid use, taking each simultaneously. THC can reduce opioid use 50 to 80 percent within weeks among opioid addicted patients who have no history of cannabis use.

Could opiates actually be *causing* chronic pain? [Italics mine]
Granowicz, J
https://www.marijuanatimes.org Jun, 2016

Narcotic painkillers can end up having the opposite of the desired effect in the long run. Morphine and similar painkillers intensified the release of specific immune cells in the spinal cord, which in turn lead to prolonged pain. It created what they called a "cascade of actions", such as spinal cord inflammation.

Study links medical marijuana dispensaries to reduced mortality from opioid overdose
Sarlin, E et al

National Institute on Drug Abuse: Advancing Addiction Science, May, 2016
Legally protected marijuana dispensaries were associated with lower rates of dependence on prescription opioids, and deaths due to overdose.

Is cannabis better for chronic pain than opioids?
https://www.leafly.com/news/health/cannabis-for-chronic-pain-vs-opioids

Dr. Donald Abrams, a professor and Chief of Hematology/Oncology at San Francisco General Hospital, states, "Given the safety profile of cannabis compared to opioids, cannabis appears to be far safer."

ECONOMICS

Medical marijuana laws reduce prescription medication use in Medicare Part D
Bradford, A et al
Health Affairs, Jul, 2016

The use of prescription drugs for which marijuana could serve as a clinical alternative fell significantly, once a medical marijuana law was implemented.

CANNABIS AND PAIN REDUCTION

Medical Use of Cannabinoids Grant I. Comment and response, Igor Grant MD JAMA. 2015 Oct 27;314(16):1750-1. doi: 10.1001/jama.2015.11429PMID: 26505602 [PubMed - indexed for MEDLINE

"The results of these 4 studies reinforce the likely efficacy of cannabis in neuropathic pain, but with an important added observation: benefit was noted at low THC concentrations. This has clinical importance, suggesting therapeutic benefit of cannabis with THC content that is less likely to produce adverse effects."
Clinical perspectives on medical marijuana (cannabis) for neurologic disorders Fife TD, Moawad H, Moschonas C, Shepard K, Hammond N.Neurol Clin Pract. 2015 Aug;5(4): 344-351.PMID: 26336632 [PubMed]

Several cannabinoids showed effectiveness or probable effectiveness for spasticity, central pain, and painful spasms in multiple sclerosis.
Medical Marijuana and Chronic Pain: A Review of Basic Science and Clinical Evidence Jensen B, Chen J, Furnish T, Wallace M.Curr Pain Headache Rep. 2015 Oct;19(10): 50. doi: 10.1007/s11916-015-0524-x. Review.PMID: 26325482 [PubMed - indexed for MEDLINE

*Gold standard clinical trials are limited; however, some studies have thus far shown evidence to support the use of cannabinoids for some cancer, neuropathic, spasticity, acute pain, and chronic pain conditions.***Cannabinoids for Medical Use: A Systematic Review and Meta-analysis**Whiting PF, Wolff RF, Deshpande S, Di Nisio M, Duffy S, Hernandez AV, Keurentjes JC, Lang S, Misso K, Ryder S, Schmidlkofer S, Westwood M, Kleijnen JJAMA. 2015 Jun 23-30;313(24):2456-73. doi: 10.1001/jama.2015.6358. Review

*There was moderate-quality evidence to support the use of cannabinoids for the treatment of chronic pain and spasticity***Veterans Health Administration Policy on Cannabis as an Adjunct to Pain Treatment with Opiates**Krawitz M.AMA J Ethics. 2015 Jun 1;17(6):558-61. doi: 10.1001/journalofethics.2015.17.6.pfor2-1506. No abstract available.

The policy of forcing Veterans off of opiate treatment if they tested positive for THC was eliminated.

Efficacy of Inhaled Cannabis on Painful Diabetic Neuropathy Wallace MS, Marcotte TD, Umlauf A, Gouaux B, Atkinson JH.J Pain. 2015 Jul;16(7):616-27. doi: 10.1016/j.jpain. 2015.03.008. Epub 2015 Apr 3.PMID: 25843054 [PubMed - indexed for MEDLINE]

This small, short-term, placebo-controlled trial of inhaled cannabis demonstrated a dose-dependent reduction in diabetic peripheral neuropathy pain in patients with treatment-refractory pain. This adds preliminary evidence to support further research on the efficacy of the cannabinoids in neuropathic pain.

The effectiveness of cannabinoids in the management of chronic nonmalignant neuropathic pain: a systematic review Boychuk DG, Goddard G, Mauro G, Orellana MF.J Oral Facial Pain Headache. 2015 Winter;29(1):7-14. doi: 10.11607/ofph.1274. Review.PMID: 25635955 [PubMed - indexed for MEDLINE]

*Cannabis-based medicinal extracts used in different populations of chronic nonmalignant neuropathic pain patients may provide effective analgesia in conditions that are refractory to other treatment***Re-branding cannabis: the next generation of chronic pain medicine?** Carter GT, Javaher SP, Nguyen MH, Garret S, Carlini BH.Pain Manag. 2015;5(1):13-21. doi: 10.2217/pmt.14.49.PMID: 25537695 [PubMed - indexed for MEDLINE]

Current literature indicates many chronic pain patients could be treated with cannabis alone or with lower doses of opioids.

Prescribing smoked cannabis for chronic noncancer pain: preliminary recommendations Kahan M, Srivastava A, Spithoff S, Bromley L.Can Fam Physician. 2014 Dec;60(12):1083-90. Review.
Smoked cannabis might be indicated for patients with severe neuropathic pain conditions who have not responded to adequate trials of pharmaceutical cannabinoids and standard analgesics (level II evidence).

The endocannabinoid system as a potential therapeutic target for pain modulation Ulugöl A.Balkan Med J. 2014 Jun;31(2):115-20. doi: 10.5152/balkanmedj.2014.13103. Epub 2014 Jun 1. Review.PMID: 25207181 [PubMed]

"Special emphasis is given on multi-target analgesia compounds, where one of the targets is the endocannabinoid degrading enzyme. In this review, I provide an overview of the current understanding about the processes accounting for the biosynthesis, transport and metabolism of endocannabinoids, and pharmacological approaches and potential therapeutic applications in this area, regarding the use of drugs elevating endocannabinoid levels in pain conditions".

The pharmacokinetics, efficacy, safety, and ease of use of a novel portable metered-dose cannabis inhaler in patients with chronic neuropathic pain: a phase 1a study Eisenberg E, Ogintz M, Almog S.J Pain Palliat Care Pharmacother. 2014 Sep;28(3):216-25. doi: 10.3109/15360288.2014.941130. Epub 2014 Aug 13.PMID: 25118789 [PubMed - indexed for MEDLINE]

A significant 45% reduction in pain intensity was noted 20 minute after inhalation (P = .001), turning back to baseline within 90 minutes.
Clinical endocannabinoid deficiency (CECD) revisited: can this concept explain the therapeutic benefits of cannabis in migraine, fibromyalgia, irritable bowel syndrome and other treatment-resistant conditions?Smith, SC, Wagner MS.Neuro Endocrinol Lett. 2014;35(3):198-201. Review.
Subsequent research has confirmed that underlying endocannabinoid deficiencies indeed play a role in migraine, fibromyalgia, irritable bowel syndrome and a growing list of other medical conditions. Clinical experience is bearing this out. Further research and especially, clinical trials will further demonstrate the usefulness of medical cannabis. As legal barriers fall and scientific bias fades this will become more apparent.

Cannabis for inflammatory bowel disease
Webb CW, Webb SM.
Hawaii J Med Public Health. 2014 Apr;73(4):109-11
PMID: 24765558 [PubMed - indexed for MEDLINE]

Average pain improvement on a 0-10 pain scale was 5.0 (from 7.8 to 2.8), which translates to a 64% relative decrease in average pain. These results suggest that Cannabis is an extremely safe and effective medication for many chronic pain patients. Cannabis appears to alleviate pain, insomnia, and may be helpful in relieving anxiety. Cannabis has shown extreme promise in the treatment of numerous medical problems and deserves to be released from the current Schedule I federal prohibition against research and prescription.

The pharmacologic and clinical effects of medical cannabis
Borgelt LM, Franson KL, Nussbaum AM, Wang GS.Pharmacotherapy. 2013 Feb;33(2):195-209. doi: 10.1002/phar.1187. Review.PMID: 23386598 [PubMed - indexed for MEDLINE]

Studies of medical cannabis show significant improvement in various types of pain and muscle spasticity. Reported adverse effects are typically not serious, with the most common being dizziness

Low-dose vaporized cannabis significantly improves neuropathic pain Wilsey B, Marcotte T, Deutsch R, Gouaux B, Sakai S, Donaghe H.J Pain. 2013 Feb;14(2):136-48. doi: 10.1016/j.jpain.2012.10.009. Epub 2012 Dec 11.PMID: 23237736 [PubMed - indexed for MEDLINE]

As these NNTs are comparable to those of traditional neuropathic pain medications, cannabis has analgesic efficacy with the low dose being as effective a pain reliever as the medium dose. Psychoactive effects were minimal and well tolerated, and neuropsychological effects were of limited duration and readily reversible within 1 to 2 hours. Vaporized cannabis, even at low doses, may present an effective option for patients with treatment-resistant neuropathic pain.

Cannabis as an adjunct to or substitute for opiates in the treatment of chronic pain Lucas P.J Psychoactive Drugs. 2012 Apr-Jun;44(2):125-33. Review.PMID: 22880540 [PubMed - indexed for MEDLINE]

Despite a lack of regulatory oversight by federal governments in North America, community-based medical cannabis dispensaries have proven successful at supplying patients with a safe source of cannabis within an environment conducive to healing, and may be reducing the problematic use of pharmaceutical opiates and other potentially harmful substances in their communities.

An Exploratory Human Laboratory Experiment Evaluating Vaporized Cannabis in the Treatment of Neuropathic Pain From Spinal Cord Injury and Disease Wilsey B, Marcotte TD, Deutsch R, Zhao H, Prasad H, Phan A.J Pain. 2016 Jun 7. pii: S1526-5900(16)30072-4. doi: 10.1016/j.jpain.2016.05.010. [Epub ahead of print]PMID: 27286745 [PubMed - as supplied by publisher]

The lower dose appears to offer the best risk-benefit ratio in patients with neuropathic pain associated with injury or disease of the spinal cord. A crossover, randomized, placebo-controlled human laboratory experiment involving administration of vaporized cannabis was performed in patients with neuropathic pain related to spinal cord injury and disease. This study supports consideration of future research that would include longer duration studies over weeks to months to evaluate the efficacy of medicinal cannabis in patients with central neuropathic pain.

Efficacy, tolerability and safety of cannabinoids in chronic pain associated with rheumatic diseases (fibromyalgia syndrome, back pain, osteoarthritis, rheumatoid arthritis): A systematic review of randomized controlled trials Schmerz. 2016 Feb;30(1):47-61. doi: 10.1007/s00482-015-0084-3.[Article in German]
Fitzcharles MA, Baerwald C, Ablin J, Häuser W. PMID: 26767993 [PubMed - in process]

Outcomes were reduction of pain, sleep problems, fatigue and limitations of quality of life for efficacy, dropout rates due to adverse events for tolerability, and serious adverse events for safety

The Role of the Endocannabinoid System in the Brain-Gut Axis Sharkey KA, Wiley JW.Gastroenterology. 2016 Aug;151(2):252-66. doi: 10.1053/j.gastro.2016.04.015. Epub 2016 Apr 29. Review.PMID: 27133395 [PubMed - in process]

The ECS is also involved centrally in the manifestation of stress, and endocannabinoid signaling reduces the activity of hypothalamic-pituitary-adrenal pathways via actions in specific brain regions, notably the prefrontal cortex, amygdala, and hypothalamus. Agents that modulate the

ECS are in early stages of development for treatment of gastrointestinal diseases. Increasing our understanding of the ECS will greatly advance our knowledge of interactions between the brain and gut and could lead to new treatments for gastrointestinal disorders.
Endocannabinoid System: A Multi-Facet Therapeutic Target Kaur R, Ambwani SR, Singh S.Curr Clin Pharmacol. 2016;11(2):110-7. Review.PMID: 27086601 [PubMed - in process]

*Several diseases like emesis, pain, inflammation, multiple sclerosis, anorexia, epilepsy, glaucoma, schizophrenia, cardiovascular disorders, cancer, obesity, metabolic syndrome related diseases, Parkinson's disease, Huntington's disease, Alzheimer's disease and Tourette's syndrome could possibly be treated by drugs modulating endocannabinoid system***integrating cannabis into clinical cancer care**Abrams DI.Curr Oncol. 2016 Mar;23(2):S8-S14. doi: 10.3747/co.23.3099. Epub 2016 Mar 16.PMID: 27022315 [PubMed]

For the cancer patient, cannabis has a number of potential benefits, especially in the management of symptoms. Cannabis is useful in combatting anorexia, chemotherapy-induced nausea and vomiting, pain, insomnia, and depression.

The Effect of Medicinal Cannabis on Pain and Quality of Life Outcomes in Chronic Pain: A Prospective Open-label Study Haroutounian S, Ratz Y, Ginosar Y, Furmanov K, Saifi F, Meidan R, Davidson E.Clin J Pain. 2016 Feb 17. [Epub ahead of print]PMID: 26889611 [PubMed - as supplied by publisher]

Opioid consumption at follow-up decreased by 44% (P<0.001) The treatment of chronic pain with medicinal cannabis in this open-label, prospective cohort resulted in improved pain and functional outcomes, and significant reduction in opioid use. The results suggest long-term benefit of cannabis treatment in this group of patients The treatment of chronic pain with medicinal cannabis in this open-label, prospective cohort resulted in improved pain and functional outcomes, and significant reduction in opioid use

Medical cannabis: considerations for the anesthesiologist and pain physician Beaulieu P, Boulanger A, Desroches J, Clark AJ.Can J Anaesth. 2016 May;63(5):608-24. doi: 10.1007/s12630-016-0598-x. Epub 2016 Feb 5.PMID: 26850063 [PubMed - in process]

*The recent literature indicates that currently available cannabinoids are modestly effective analgesics that provide a safe, reasonable therapeutic option for managing chronic non-cancer-related pain.***Efficacy, tolerability and safety of cannabinoids for chronic neuropathic pain: A systematic review of randomized controlled studies**
Schmerz. 2016 Feb;30(1):62-88. doi: 10.1007/s00482-015-0089-y. [Article in German]
Petzke F, Enax-Krumova EK, Häuser W.Schmerz. 2016 Feb;30(1):62-88. doi: 10.1007/s00482-015-0089-y. German.PMID: 26830780 [PubMed - in process]

Cannabinoids were marginally superior to placebo in terms of efficacy and inferior in terms of tolerability. Cannabinoids and placebo did not differ in terms of safety during the study period. Short-term and intermediate-term therapy with cannabinoids can be considered in selected patients with chronic neuropathic pain after failure of first-line and second-line therapies.
Cannabis for the Management of Pain: Assessment of Safety Study (COMPASS) Ware MA, Wang T, Shapiro S, Collet JP; COMPASS study team.J Pain. 2015 Dec;16(12):1233-42. doi: 10.1016/j.jpain.2015.07.014. Epub 2015 Sep 16.PMID: 26385201 [PubMed - in process]

Quality-controlled herbal cannabis, when used by patients with experience of cannabis use as part of a monitored treatment program over 1 year, appears to have a reasonable safety profile
Prescribing marijuana for chronic pain Ladouceur R.Can Fam Physician. 2015 Aug;61(8): 658. No abstract available.PMID: 26273072 [PubMed - indexed for MEDLINE]

*Using the example of neuropathic pain, we present and summarize the clinical evidence surrounding smoked or vaporized cannabis, including recent evidence pertaining to the effectiveness of cannabis in comparison to existing standard pharmacotherapies for neuropathy***Comprehensive Review of Medicinal Marijuana, Cannabinoids, and Therapeutic Implications in Medicine and Headache: What a Long Strange Trip It's Been ....**Baron EP.Headache. 2015 Jun;55(6):885-916. doi: 10.1111/head.12570. Epub 2015 May 25. Review.PMID: 26015168 [PubMed - indexed for MEDLINE]

The literature suggests that the medicinal use of cannabis may have a therapeutic role for a multitude of diseases, particularly chronic pain disorders including headache. Supporting literature suggests a role for medicinal cannabis and cannabinoids in several types of headache disorders including migraine and cluster headache, although it is primarily limited to case based, anecdotal, or laboratory-based scientific research.
The role of the endocannabinoid system in pain Woodhams SG, Sagar DR, Burston JJ, Chapman V.Handb Exp Pharmacol. 2015;227:119-43. doi: 10.1007/978-3-662-46450-2_7. Review.PMID: 25846617 [PubMed - indexed for MEDLINE

"In this chapter, we describe the general features of the EC system as related to pain and nociception and discuss the wealth of preclinical and clinical data involving targeting the EC system with focus on two areas of particular promise: modulation of 2-AG signaling via specific enzyme inhibitors and the role of spinal CB2 in chronic pain states."
Cannabis in cancer care Abrams DI, Guzman M.Clin Pharmacol Ther. 2015 Jun;97(6):575-86. doi: 10.1002/cpt.108. Epub 2015 Apr 17. Review.PMID: 25777363 [PubMed - indexed for MEDLINE]

*Cannabinoids may be of benefit in the treatment of cancer-related pain, possibly synergistic with opioid analgesics. Cannabinoids have been shown to be of benefit in the treatment of HIV-related peripheral neuropathy, suggesting that they may be worthy of study in patients with other neuropathic symptoms. Cannabinoids have a favorable drug safety profile, but their medical use is predominantly limited by their psychoactive effects and their limited bioavailability.***Re-branding cannabis: the next generation of chronic pain medicine?**Carter GT, Javaher SP, Nguyen MH, Garret S, Carlini BH.Pain Manag. 2015;5(1):13-21. doi: 10.2217/pmt.14.49.PMID: 25537695 [PubMed - indexed for MEDLINE]

Current literature indicates many chronic pain patients could be treated with cannabis alone or with lower doses of opioids. To make progress, cannabis needs to be re-branded as a legitimate medicine and rescheduled to a more pharmacologically justifiable class of compounds.

Clinical endocannabinoid deficiency (CECD) revisited: can this concept explain the therapeutic benefits of cannabis in migraine, fibromyalgia, irritable bowel syndrome and other treatment-resistant conditions?Smith SC, Wagner MS.Neuro Endocrinol Lett. 2014;35(3):198-201. Review.PMID: 24977967 [PubMed - indexed for MEDLINE]

Investigation at that time suggested that cannabinoids can block spinal, peripheral and gastrointestinal mechanisms that promote pain in headache, fibromyalgia, irritable bowel

*syndrome and muscle spasm.***Patterns of use of medical cannabis among Israeli cancer patients: a single institution experience**Waissengrin B, Urban D, Leshem Y, Garty M, Wolf I.J Pain Symptom Manage. 2015 Feb;49(2):223-30. doi: 10.1016/j.jpainsymman.2014.05.018. Epub 2014 Jun 14.PMID: 24937161 [PubMed - indexed for MEDLINE

*Improvement in pain, general well-being, appetite, and nausea were reported by 70%, 70%, 60%, and 50%, respectively. Side effects were mild and consisted mostly of fatigue and dizziness.***Therapeutic benefits of cannabis: a patient survey**Webb CW, Webb SM.Hawaii J Med Public Health. 2014 Apr;73(4):109-11.PMID: 24765558 [PubMed - indexed for MEDLINE]

Cannabis appears to alleviate pain, insomnia, and may be helpful in relieving anxiety. Cannabis has shown extreme promise in the treatment of numerous medical problems and deserves to be released from the current Schedule I federal prohibition against research and prescription.
Therapeutic satisfaction and subjective effects of different strains of pharmaceutical-grade cannabis Brunt TM, van Genugten M, Höner-Snoeken K, van de Velde MJ, Niesink RJ.J Clin Psychopharmacol. 2014 Jun;34(3):344-9. doi: 10.1097/JCP.0000000000000129.PMID: 24747979 [PubMed - indexed for MEDLIN

Chronic pain (53%; n = 54) was the most common medical indication for using cannabis followed by multiple sclerosis (23%; n = 23), and 86% (n = 88) of patients (almost) always experienced therapeutic satisfaction when using pharmaceutical cannabis.
Management of cancer pain: 1. Wider implications of orthodox analgesics Lee SK, Dawson J, Lee JA, Osman G, Levitin MO, Guzel RM, Djamgoz MB.Int J Gen Med. 2014 Jan 7;7:49-58. doi: 10.2147/IJGM.S42187. eCollection 2014. Review.PMID: 24470767 [PubMed]

It is concluded that analgesics currently prescribed for cancer pain can significantly affect the cancer process itself. More futuristically, several ion channels are being targeted with novel analgesics, but many of these are also involved in primary and/or secondary tumorigenesis.
(Re)introducing medicinal cannabis Mather LE, Rauwendaal ER, Moxham-Hall VL, Wodak AD.Med J Aust. 2013 Dec 16;199(11):759-61.PMID: 24329652 [PubMed - indexed for MEDLINE

The evidence indicates that cannabis has genuine medicinal utility in patients with certain neuropathic conditions, with acceptable levels of risk from mostly mild side effects.

Medical Marijuana for Treatment of Chronic Pain and Other Medical and Psychiatric Problems: A Clinical Review
Hill, KP. JAMA 2015 June 23-30 http://www.ncbi.nlm.nih.gov/pubmed

Use of marijuana for chronic pain, neuropathic pain, and spasticity due to multiple sclerosis is supported by high quality evidence. Several trials had positive results, suggesting that marijuana or cannabinoids may be efficacious

Patterns of use of medical cannabis among Israeli cancer patients: a single institution experience
Waissengrin B
J Pain Symptom Management Feb, 2015 http://www.ncbi.nlm.nih.gov/pubmed

Cannabis use is perceived as highly effective by some patients with advanced cancer and its administration can be regulated.

Therapeutic satisfaction and subjective effects of different strains of pharmaceutical-grade cannabis
Brunt, TM J Clin Psychopharmacol, Jun, 2014 http://www.ncbi.nlm.nih.gov/pubmed

Results show that patients report therapeutic satisfaction with pharmaceutical cannabis, mainly pain alleviation.

Comparison of the analgesic effects of Dronabinol and smoked marijuana in daily marijuana smokers
Cooper, ZD et al
Neuropsychopharmacology 2013 http://www.cannabis-med.org/studies

THC (Dronabinalol) and smoked cannabis caused similar effects on pain sensitivity and tolerance

Cannabinoid-opioid interaction in chronic pain
Abrams, DI et al
Clin Pharmacol Ther, 2011 http://www.cannabis-med.org/studies

Pain was significantly decreased (95% confidence interval) after addition of vaporized cannabis

Smoked cannabis for chronic neuropathic pain: a randomized controlled trial
Ware, MA et al
CMAJ, Oct 2010 http://www.cannabis-med.org/studies

Cannabis significantly improved pain and sleep quality

Smoked medicinal cannabis for neuropathic pain in HIV: a randomized, crossover clinical trial
Ellis RJ et al
Neuropsychopharmacology 2009http://www.cannabis-med.org/studies

Significant pain relief with cannabis

Cannabinoid-induced effects on the nociceptive system: a neurophysiological study in patients with secondary progressive multiple sclerosis
Eur J Pain, May, 2009 http://www.cannabis-med.org/studies

The study provides objective neurophysiological evidence that cannabinoids modulate the nociceptive system

The subjective psychoactive effects of oral Dronabinol studied in a randomized, controlled crossover clinical trial for pain
Issa, MA et al
Clin J Pain, Jun, 2014 http://www.cannabis-med.org/studies

Oral THC had similar psychoactive effects to smoked marijuana

Note: the cost of Dronabinol is $2,929.47 for 60 X 10 mg

Oromucosal delta9-tetrahydrocannabinol/Cannabidiol for neuropathic pain associated with multiple sclerosis: an uncontrolled, open-label, 2-year extension trial
Rog DJ et al
Clin Ther Sep 2007 http://www.ncbi.nim.nih.gov/pubmed

THC/CBD was effective, with no evidence of tolerance, in patients with CNP and MS who completed approximately 2 years of treatment.

Multicenter, double-blind, randomized, placebo-controlled, parallel-group study of the efficacy, safety, and tolerability of THD:CBD extract and THC extract in patients with intractable cancer-related pain
Johnson, JR et al

J Pain Symptom Manage, Feb, 2010 http://www.cannabis-med.org/studies
This study shows that THD:CBD extract is efficacious for relief of pain in patients with advanced cancer pain not fully relieved by strong opioids.

Is cannabis better for chronic pain than opioids?
http://leafly.com
A Harvard-led systematic review of 28 studies examining the efficacy of exo-cannabinoids concluded, "Use of marijuana for chronic pain, neuropathic pain, and spasticity due to multiple sclerosis is supported by high quality evidence."

Study: 100% of those with migraines, fibromyalgia and IBS find reduction of pain with marijuana
Martinelli, A
The National Pain Report http://thejointblog.com

A Petition
To Make a
Senior of 65+ years
a medical cannabis condition

Senior 65+

Index

By age 65 most people are considered old; our bodies are breaking down, we are mostly on the down side of life. Medical problems happen, we become less able to achieve our desires, and so frustrated by the restrictions, and so less happy, and so less energetic, which may bring on more medical problems, and the downward cycle of life begins and increases.

I'm almost 70 years old now but have thought the paragraph above for many years. A few months ago I received a Medical Cannabis Card for a painful cervical spine conditions. Cannabis has significantly relaxed my neck spasms and *more*! Symptoms of my prostate cancer and BPH seem to be shrinking, I sleep much better, and more regular. I was so concerned of my growing prostate cancer and since taking cannabis products it has serendipitously begun to shrink! So I ponder 'What other conditions at their beginning/minor stage could be eliminated or retarded with cannabis?' I don't know but I suggest a way to research it.

My hypotheses is that medical cannabis can interrupt and perhaps reverse not only various medical conditions but also improve energy, increasing happiness and improve both mentally and physical health. A rather grand description for something we know so little about, not only the studied medically aspects but also the mostly unstudied energy of life. But that is the 2nd point, not only to help elders be more comfortable to enjoy the end of life but to be able study how and why these understudied cannabinoids behave within the elderly. Perhaps even more needed because it is the elderly making the most demands for medical assistance.

Seniors tend to gather in known locations: senior centers, assisted living, special classes, etc. What are seniors likely to talk about at senior gatherings? Their latest health issues: afflictions and cures. Introduce cannabis and induce a virtual caldron of symptoms, thoughts, and opinions ready to be studied.

Cannabises is known to help alleviate common elderly problems:

- Arthritis
- Back pain
- Diabetes and obesity
- Epilepsy
- Hearing and Tinnitus,
- Lung & respiratory diseases
- Migraines
- Nausea
- Parkinson's Disease
- Prostate: Cancer and BPH
- Opioid addiction

Cannabises is suspected to help alleviate:

- Bladder, Incontinence
- Decrease brain activity
- Dementia, Cognitive impairment
- Cancers (Anti-Tumor), stomach, pancreatic, bladder, prostate, head, neck, lymph
- Constipation
- Lack of Energy
- Frailty syndrome
- Hypertension (High blood pressure)
- NSAIDS use
- Obesity
- Osteoporosis, Bone density
- Tobacco use

Then there are many conditions present in the elderly where cannabis effects are mostly unstudied, and some that are declared detrimental (in parenthesis).

Balance
Decreased brain activity and memory loss
(Depression)
(Dizziness)
(Dental: Gingivitis, periodontitis, loss of teeth)
Fatigue
Frailty
GERD
Heart and circulatory diseases
Immunity
(Impotency)
Slower healing
Parkinson's disease
(Organ failure)
Dry loose skin, spots, and cancer,
Taste and smell
(Vision: Cataracts, Close vision, Retinal disorders, vision loss)
Walking

Seniors typically have multiple problems, some of which cannabis will help. But, any one of which rarely, singularly, reaching the level to qualify for a declared medical cannabis condition. I believe cannabis would improve many conditions of many elderly persons. This is the reason I am proposing an all covering classification of 'senior 65 +'.

I don't think this condition, 'senior 65 +' would need to be renewed every year since a cure for increased age is not yet discovered, in the testing phase, nor approved by the FDA. But there are other ways to solve the renewal problem and produce even larger senior pools that could be studied. Open a research to study cannabis use in the elderly, supplying the elderly medical or recreational cannabis. Or, also, make 'recreational cannabis' legal for seniors 65 yrs or older.

HB0356
SECTION 4. [NEW MATERIAL] DEPARTMENT OF HEALTH--DUTIES--
PUBLIC HEALTH AND SAFETY ADVISORY COMMITTEE.--
B. The department of health shall monitor emerging scientific and medical information relevant to the health effects associated with cannabis use and shall monitor changes in cannabis use patterns for children and adults within the state, ...

Safe Access New Mexico
[redacted]

Monday, February 25th 2019

New Mexico State Department of Health
Medical Cannabis Advisory Board
Medical Cannabis Program
PO Box 26110
Santa Fe, NM, 87502-6110

Petition: Requesting The Inclusion Of A New Medical Condition: Substance Abuse Disorder

(To Include: Alcohol Use Disorder (AUD), Tobacco Use Disorder, Stimulant Use Disorder, Hallucinogen Use Disorder, and Opioid Use Disorder)

Table of Contents

Petition Can Be Viewed in Original Format Online At:
http://lecuanmmcpmcabpetitions.blogspot.com/

Petition Purpose and Background

Petition Requesting The Inclusion Of A New Medical Condition: Substance Abuse Disorder (To Include: Alcohol Use Disorder (AUD), Tobacco Use Disorder, Stimulant Use Disorder, Hallucinogen Use Disorder, and Opioid Use Disorder)

Mosby's Medical Dictionary states that "medical treatment" means; the management and care of a patient to combat disease or disorder. Medical treatment includes: Using prescription medications, or use of a non-prescription drug at prescription strength; and or treatment of disease by hygienic and pharmacologic remedies, as distinguished from invasive surgical procedures. Treatment may be pharmacologic, using drugs; surgical, involving operative procedures; or supportive, building the patient's strength. It may be specific for the disorder, or symptomatic to relieve symptoms without effecting a cure.(Mosby's Medical Dictionary, 9th edition.)

What is a chronic medical condition?
A chronic disease is one lasting 3 months or more, by the definition of the U.S. National Center for Health Statistics. Chronic diseases generally cannot be prevented by vaccines or cured by medication, nor do they just disappear. Harvard Medical Dictionary defines chronic as: Any condition that lasts a long time or recurs over time; chronic pain as: Pain that persists after an injury has healed or a disease is over; and chronic pain syndrome as : Long-term, severe pain that doesn't spring from an injury or illness, that interferes with daily life, and is often accompanied by other problems, such as depression, irritability, and anxiety.

What is the meaning of debilitating?
Something that's debilitating seriously affects someone or something's strength or ability to carry on with regular activities, like a debilitating illness. Debilitating comes from the Latin word debilis, meaning "weak." That's why you'll often see the adjective used to describe illness, despite the negative reference.

The purpose of this Petition Requesting The Inclusion of a New Medical Condition: Substance Abuse Disorder; To Include: Alcohol Use Disorder (AUD), Tobacco Use Disorder, Stimulant Use Disorder, Hallucinogen Use Disorder, and Opioid Use Disorder (substance use disorder, for which the applicant or qualified patient is currently undergoing treatment for the applicant's or qualified patient's condition).

The purpose of this Petition Requesting The Inclusion of a New Medical Condition: Substance Abuse Disorder; To Include: Alcohol Use Disorder (AUD), Tobacco Use Disorder, Stimulant Use Disorder, Hallucinogen Use Disorder, and Opioid Use Disorder, is being provided to the state Department of Health Medical Cannabis Program so the advisory board can review and recommend to the department for approval additional debilitating medical conditions that would benefit from the medical use of cannabis with the Lynn and Erin Compassionate Use Act.

Who Should Qualify for Medical Cannabis Use?
According to Americans For Safe Access Policy Studies & Research:
(Americans For Safe Access is the largest national member-based organization of patients, medical professionals, scientists and concerned citizens promoting safe and legal access to cannabis for therapeutic use and research.)

Background: The most fundamental aspect of medical cannabis laws is the relationship between a patient and their physician. It is often only the physician and the patient that possess information about a patient's health condition. However, many public officials and others who oppose medical cannabis laws often make assumptions about people's health. The media have even fomented such inappropriate assumptions by naming a category of patients "Young Able Bodied Males," condemning certain patients by visual assessment alone.

Findings: The health care information discussed between a patient and physician is considered private and protected under federal HIPAA laws. It is typically the purview of state medical boards to assess whether a physician has inappropriately recommended cannabis to someone who should not be qualified. Studies have shown in some medical cannabis states that the majority of patients suffer from chronic pain, an ailment that is not obviously detectable by another person. Nevertheless, police will often harass and arrest patients based on the assumption that someone is faking their illness.

Position: Medical professionals should have an unrestricted ability to recommend cannabis therapeutics and that should not be impacted by law enforcement's perceptions.

Americans For Safe Access policy further states:
"Qualifying medical condition" shall mean any condition for which treatment with medical cannabis would be beneficial, *as determined by a patient's qualified medical*

professional, including but not limited to cancer, glaucoma, positive status for human immunodeficiency virus, acquired immune deficiency syndrome (AIDS), hepatitis C, amyotrophic lateral sclerosis (ALS), Crohn's disease, Parkinson's disease, post-traumatic stress disorder, arthritis, chronic pain, neuropathic and other intractable chronic pain, and multiple sclerosis.
"Qualifying patient" shall mean a person who has a written recommendation from a qualified medical professional for the medical use of cannabis.
Link(s): http://www.safeaccessnow.org/asa_policy_statements
http://www.safeaccessnow.org/model_legislation

Petition Background Information: ***"Hemp Derived CBD vs. Cannabis Derived CBD - Where's the Difference?"***

Due to the heavy discussion in the Petition and research about CBD, here is a beneficial article summary about the scientific and medical differences of Hemp CBD and Cannabis CBD.

"Hemp Derived CBD vs. Cannabis Derived CBD - Where's the Difference?"
"In terms of its molecular structure CBD is CBD is CBD—it's the same molecule whether the CBD comes from hemp, cannabis or a test tube."
"Whether the CBD comes from hemp or cannabis flowers is not the ultimate factor. The key factor is the process by which the CBD is extracted, concentrated and formulated. Cannabis strains such as Charlotte's Web, Avidekel and ACDC are low in THC but high in CBD with up to a 20 percent CBD concentration level. By comparison, hemp's typical 3.5 percent CBD concentration level is rather paltry."
"Since the concentration of CBD is low in hemp, it requires large amounts of hemp to produce a small amount of CBD oil. The most efficient and least expensive way to extract the CBD oil is to use solvents, but dangerous solvent residues can remain in the CBD oil. In 2014, Project CBD, a California-based nonprofit dedicated to promoting and publicizing research into the medical uses of CBD, tested several CBD hemp oil products available to the public over the Internet and found significant levels of toxic solvent residues in random samples."
"Even if it is possible to produce solvent-free CBD oil from hemp, there is another problem in that industrial hemp is a bio-accumulator that naturally absorbs toxic substances from the soil. Hemp is such an efficient bio-accumulator that it was used at

the Chernobyl Nuclear power plant after the meltdown because it is excellent at sucking up heavy metals and radiation, according to McGraw Hill Education."
"For many reasons, CBD-rich cannabis is a better source of CBD than industrial hemp. The only reason CBD derived from hemp is gaining any notoriety is as an attempted end-run around federal law. When cannabis prohibition is ended and cannabis is treated like any other agricultural product, CBD will be extracted from the best source of cannabidiol—CBD-rich cannabis. The need to derive CBD from industrial hemp will end."
Complete Scientific Article Link:
http://www.cannabisnewsjournal.co/p/hemp-derived-cbd-vs-cannabis-derived-cbd.html

Petition Background Information: Substance Abuse in New Mexico

Consequences of Substance Abuse Disorder

Introduction

All of the ten leading causes of death in New Mexico are, at least partially, attributable to the use of alcohol, tobacco, or other drugs. In 2016, the ten leading causes of death in New Mexico were diseases of the heart, malignant neoplasms, unintentional injuries, chronic lower respiratory diseases, cerebrovascular diseases, diabetes, Alzheimer's disease, chronic liver disease and cirrhosis, suicide, and influenza and pneumonia. Of these, chronic liver disease, unintentional injuries, and suicide are associated with alcohol use; chronic lower respiratory diseases and influenza and pneumonia are associated with tobacco use; heart disease, malignant neoplasms, and cerebrovascular diseases are associated with both alcohol and tobacco use; and unintentional injuries and suicide are associated with the use of other drugs.

Alcohol-Related Deaths and Hospitalizations

Over the past 30 years, New Mexico has consistently had among the highest alcohol-related death rates in the United States, and it has had the highest alcohol-related death rate since 1997. The negative consequences of excessive alcohol use in NM are not limited to death but also include domestic violence, crime, poverty, and unemployment, as well as chronic liver disease, motor vehicle crash and other injuries, mental illness, and a variety of other medical problems. In 2010, the economic cost of excessive alcohol consumption in New Mexico was $2.2 billion ($2.77 per drink or an average of $1,084 per person) (Sacks, Jeffrey J., et al. "2010 national and state

costs of excessive alcohol consumption." American Journal of Preventive Medicine 49.5 (2015): e73-e79).

Smoking-Related Death

Historically, New Mexico has had one of the lowest smoking-related death rates in the nation. Nonetheless, New Mexico's burden of death associated with smoking is considerably greater than the burden associated with alcohol and other drugs. Among all racial/ethnic groups, males have higher smoking-related death rates than females. Among both males and females, Whites have the highest rates, followed by Blacks. The counties with the highest rates and relatively heavy burdens of smoking related death (i.e., 20 or more deaths a year) were Sierra, De Baca, Luna, Quay, Torrance, Eddy, and Lea. The high rates in most of these counties, and in the state overall, were driven by high rates among Whites.

Drug Overdose Death

In 2017, New Mexico had the seventeenth highest drug overdose death rate in the nation. The consequences of drug use continue to burden New Mexico communities. Drug overdose death rates remained higher for males than for females. The highest drug overdose death rate was among Hispanic males. Rio Arriba County had the highest drug overdose death rate in the state. Bernalillo County continued to bear the highest burden of drug overdose death in terms of total numbers of deaths. Unintentional drug overdoses account for 88% of drug overdose deaths. The most common drugs causing unintentional overdose death for the period covered in this report were prescription opioids (i.e., methadone, oxycodone, morphine; 57%), heroin (40%), benzodiazepines (24%), cocaine (13%), and methamphetamine (26%) (not mutually exclusive). In New Mexico and nationally, overdose death from opioids has become an issue of enormous concern as these potent drugs are widely available.

Link: New Mexico Substance Abuse State Epidemiology Profile 2018 (December)
https://nmhealth.org/data/view/substance/2201/

Please See: Appendix A: Alcohol Use in New Mexico Infographic, Appendix B: Prescription Monitoring Infographic, and Appendix C: Drug Overdose in New Mexico Infographic

University of New Mexico Medical Cannabis Research

What are UNM Researchers Accomplishing in the World of Medical Cannabis Research?

Advancements in Science

- Diviant, J. P., Vigil,J. M. Stith, S. S (2018). The role of cannabis within an emerging perspective on schizophrenia. Medicines, 5, 86.
- Stith, S. S., Vigil, J. M., Brockelman, F., Keenan, K., & Hall, B. (2018). Patient-reported symptom relief following medical cannabis consumption. Frontiers in Pharmacology, 9, 96.
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Introductory Narrative From Petitioner

Using the medical benefits of cannabis to treat Substance Abuse is not a new concept and is a concept that is over 20 years old in the making of this reality.

Suggested Reading That First Brought This Treatment Forward:

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- Raby WN, Carpenter KM, Rothenberg J, Brooks AC, Jiang H, Sullivan M, Bisaga A, Comer S & Nunes EV. (2009). Intermittent marijuana use is associated with improved retention in naltrexone treatment for opiate-dependence. American Journal of Addictions, 18(4): 301-8

Medical Cannabis vs Prescriptions Drugs

Prescription drug abuse is a serious and growing problem in the United States. The 2016 National Study on Drug Use and Health reported that an estimated 28.6 million Americans age 12 and over used illicit drugs during the month prior to the study. That means roughly 1 in 10 people struggle with some level of substance use, including addiction to prescription drugs.

When a person takes a prescription drug for a nonmedical reason, it can quickly lead to addiction and the need for drug treatment. In fact, 25 percent of people who misused prescription drugs by age 13 ended up with an addiction at some point in their life. (National Institute on Drug Abuse)

"More than 30 percent of overdoses involving opioids also involve benzodiazepines, a type of prescription sedative commonly prescribed for anxiety or to help with insomnia. Benzodiazepines (sometimes called "benzos") work to calm or sedate a person, by raising the level of the inhibitory neurotransmitter GABA in the brain. Common benzodiazepines include diazepam (Valium), alprazolam (Xanax), and clonazepam

(Klonopin), among others." March 2018 | NIDA | Link:
https://www.drugabuse.gov/drugs-abuse/opioids/benzodiazepines-opioids

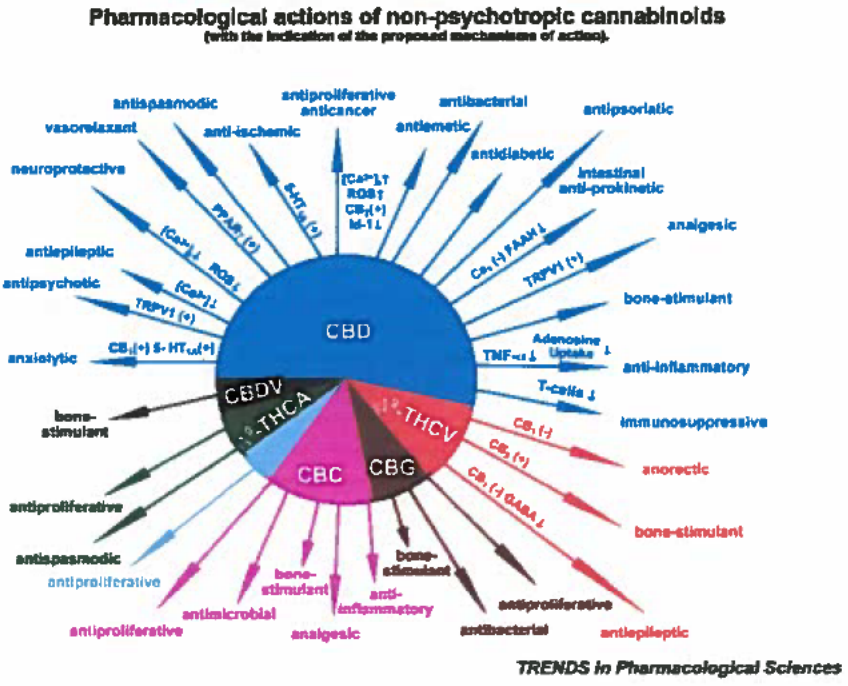
Article: 'The Other Prescription Drug Problem: 'Benzos' Like Valium and Xanax'
"We've heard plenty about the opioid epidemic.
But there's another less recognized prescription drug problem: benzodiazepines like Ativan, Xanax, Valium, and Klonopin.
While doctors are prescribing fewer painkillers, prescriptions for these anti-anxiety drugs are still going up.
Besides anxiety, the Food and Drug Administration (FDA) has approved benzodiazepines for insomnia and other uses. They're often prescribed alongside antidepressants.
The quantity Americans consume has more than tripled since the mid-1990s.
Benzos are involved in about a third of all deaths from prescription drug overdoses, typically combined with a painkiller.
Both drugs may have been prescribed, since 17 percent of Americans with an opioid prescription also used a benzodiazepine in 2013.
People also die when they take a benzo along with alcohol."

Link:
https://www.healthline.com/health-news/the-other-prescription-drug-problem-benzos#1

Prescription Pills: Each year, about 4.5 million Americans visit their doctor's office or the emergency room because of adverse prescription drug side effects. A startling 2 million other patients who are already hospitalized suffer the ill effects of prescription medications annually, and this when they should be under the watchful eye of medical professionals. The most common non-severe or mild side effects from taking drugs include (there are many more, these are the most common): Constipation, Dermatitis, Diarrhea, Dizziness, Drowsiness, Dry mouth, Headache, and Insomnia.
What are the short and long term effects of prescription drugs? Short-term effects: Alertness, focus, sleeplessness, loss of appetite, increased blood pressure and heart rate, high body temperature.
Long-term effects: Addiction, paranoia and long-term insomnia, extreme weight change.

What are the effects of prescription drugs? Physical symptoms: Increased or decreased need for sleep, Appearing unusually energetic, or overly fatigued, Increased or decreased appetite.

These drugs come with side effects that range from birth defects and liver damage to suicidal behavior, blood clots, bladder cancer, Crohn's disease, heart attacks, strokes, uncontrollable bleeding, heart failure and death: Chronic Pain Treatment drug Fentanyl (opioid). Type 2 diabetes drugs Avandia and Actos. Antidepressants Paxil, Prozac, Effexor, Zoloft and Lexapro. Mood stabilizer Depakote. Birth control pills Yaz and Yasmin. Acne medication Accutane. Blood thinners Pradaxa and Xarelto Osteoporosis treatment Fosamax. GranuFlo and NaturaLyte, which are used in dialysis.
Hair loss pill Propecia. Stop smoking cigarettes drug Chantix.
Link: https://www.drugwatch.com/dangerous-drugs.php



TRENDS in Pharmacological Sciences

In article in American-Statesman staff writer Jeremy Schwartz in 2012 noted that in 2011, "the Pentagon spent more on pills, injections and vaccines than it did on Black Hawk helicopters, Abrams tanks, Hercules C-130 cargo planes and Patriot missiles — combined." The military spent at least $2.7 billion on antidepressants and more than $1.6 billion on opioid painkillers such as Oxycontin and hydrocodone over the past

decade. More than $507 million was spent on the sleeping pill Ambien and its generic equivalents." the pharmaceutical industry spent about $1.7 million for more than 1,400 trips for Defense Department doctors and pharmacists to places such as Paris, Las Vegas and New Orleans between 1998 and 2007. All those Pills have sadly killed a lot of our Veterans, Cannabis has a 5000 year history *with zero deaths associated with it.*
Link:
https://www.livescience.com/48337-marijuana-history-how-cannabis-travelled-world.html

"Its margin of safety is immense and underscores the lack of any meaningful danger in using not only daily doses in the 3.5 – 9 gram range, but also considerably higher doses."
— David Bearman, M.D.
(Physician, researcher, court-qualified cannabis expert)
Link: http://www.davidbearmanmd.com/

Cannabis Is Safe & The Federal Government Has A Patent For It.
The U.S. Patent Office issued patent #6630507 to the U.S.Health and Human Services filed on 2/2/2001. The patent lists the use of cannabinoids found within the plant cannabis sativa plant as useful in certain neurodegenerative diseases such as Alzheimer's, Parkinson's, and HIV dementia. Since cannabis sativa (marijuana) contains compounds recognized and endorsed by an agency of the U.S. government- Why is it that cannabis remains on the Federal Schedule One list of drugs? *The issuance of patent #6630507 is a direct contradiction of the Government's own definition for classification of a Schedule 1 drug.* The U.S. government's own National Institutes of Health researchers even concluded: "Based on evidence currently available the Schedule I classification is not tenable; it is not accurate that cannabis has no medical value, or that Information on safety is lacking."
Link:
http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=6630507.PN.&OS=PN/6630507&RS=PN/6630507

"The American Medical Association has no objection to any reasonable regulation of the medicinal use of cannabis and its preparations and derivatives. It does pretest, however, against being called upon to pay a special tax, to use special order forms in order to

procure the drug, to keep special records concerning its professional use and to make special returns to the Treasury Department officials, as a condition precedent to the use of cannabis in the practice of medicine."
(AMA Position Statement/Attempt To Prevent Prohibition)
~Wm. C. Woodward, Legislative Counsel - 11:37 AM Monday, July 12, 1937

Report: Medical Cannabis Research History. What the Science Says | Americans For Safe Access

It can be difficult to locate information about the safety and therapeutic value of cannabis. An unfortunate result of the federal prohibition of cannabis has been limited clinical research to investigate the safety and efficacy of cannabis to control symptoms of serious and chronic illness. Many scientists have noted research is "hindered by a complicated federal approval process, limited availability of research grade marijuana, and the debate over legalization."

Nonetheless, the documented use of cannabis as a safe and effective therapeutic botanical dates to 2700 BC. Between 1840 and 1900, European and American journals of medicine published more than 100 articles on the therapeutic use of cannabis. In fact, cannabis was part of the American pharmacopoeia until 1942, and is currently available by prescription in Canada, the Netherlands, Israel, and Germany.

For over 5000 years, various strains of Cannabis have been among the most widely used of medicinal plants. This includes civilizations in China, India, Europe, Africa and the Middle East. Cannabis was used in the US from 1800's to 1937 to treat more than 100 distinct diseases or conditions.

Cannabis is a NON-TOXIC substance. No one has ever died from taking cannabis. One hundred per cent of the scores of studies by American universities and research facilities show that toxicity does not exist in cannabis. (U.C.L.A, Harvard, Temple, etc.) All the in-depth medico-scientific clinical studies conducted (for example, US-Jamaican, US-Costa Rican, LaGuardia Report, etc) have revealed that cannabis contains no addictive properties in any part of the plant or its smoke, so, unlike and in contrast to tobacco, alcohol, and all the legal or illegal 'recreational' substances cannabis is both non-habit-forming and non-toxic.

Therefore cannabis is uniquely safe when compared to modern FDA approved prescriptions.

Cannabis stimulate CB1 and CB2 endocannabinoid receptors on the brain and other tissues that affect body systems, triggering a chain of temporary psychological and physiological effects. Initially it has a stimulant effect, followed by relaxation and overall reduction in stress. Analgesic effect. Blocks migraine or seizures. Helps mitigate or control symptoms of multiple sclerosis (MS), spinal injury, epilepsy. Lifts mood and enhances sense of well-being. Relieves chronic and neuropathic pain. Has synergistic effects with opiates and other drugs. Not all cannabis has the same potency or effect. May cause drowsiness, distraction, paranoia or anxiety (due to type of cannabis strain) and dry mouth - that's it.

Link:
https://www.safeaccessnow.org/medical_cannabis_research_what_does_the_evidence_say

Article: "Medical Cannabis A Viable Strategy to Address the Opioid Crisis" | August 09, 2016 | By Melissa Wilcox with Americans For Safe Access
http://www.safeaccessnow.org/medical_cannabis_a_viable_strategy_to_address_the_opioid_crisis

Americans for Safe Access (ASA) released the Medical Cannabis Access for Pain Treatment: A Viable Strategy to Address the Opioid Crisis report to educate legislators and health practitioners on the benefits of medical cannabis as a treatment option for the millions of patients suffering from chronic pain. Prescription opioid use has increased dramatically over the last two decades, and in the same period the number of deaths attributed to opioid overdose have quadrupled, creating a national crisis.

In a briefing released earlier this year, President Obama proposed $1.1B in new funding for a multi-pronged approach to address the opioid overdose epidemic. In July, Obama signed the Comprehensive Addiction and Recovery Act (CARA) into law. Many of the provisions in CARA focus on post-addiction strategies for treating drug abuse, heroin use, and overdose prevention strategies. Provisions that focus upstream, including addiction prevention strategies and ways to reduce the amount of opioids prescribed while still ensuring patients receive effective treatment, are underrepresented in the

plan. While increasing funding for treatment programs is critical, it is equally important to utilize less harmful, treatment options.

ASA's report outlines research and data supporting cannabis as an effective treatment option and provides three recommendations:

- Pass the Compassionate Access, Research Expansion, and Respect States (CARERS) Act (S.683),
- Include Chronic Pain as a Qualifying Condition in State Medical Cannabis Laws
- Promote Medical Cannabis Education through State Medical Boards

"We know that patients across the US are successfully utilizing cannabis to treat pain" said ASA's Executive Director Steph Sherer. " It is not a coincidence that opiate deaths are down nearly 25% in the states that allow medical professionals and their patients to utilize cannabis therapies as a treatment option. The Medical Cannabis Access for Pain Treatment: A Viable Strategy to Address the Opioid Crisis report shows that access to medical cannabis for pain treatment would help address two major components of the opiate crisis; accidental overdoses and addiction."

Link: http://www.safeaccessnow.org/medical_cannabis_access_for_pain_treatment

About Substance Use Disorder:
(To Include: Alcohol Use Disorder (AUD), Tobacco Use Disorder, Stimulant Use Disorder, Hallucinogen Use Disorder, and Opioid Use Disorder.)

Substance Use Disorder is a complex brain disease and includes such diseases as alcoholism and drug addiction. Substance Use Disorders occur when a person has a dependence on alcohol and or drugs that is accompanied by intense and sometimes uncontrollable cravings and compulsive behaviors to obtain the substance.

The DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, 5th Edition: DSM-5) establishes these types of Substance-Related Disorders: Alcohol, Caffeine, Hallucinogens, Inhalant, Opioid (e.g., heroin), Sedatives, Hypnotics, or Anxiolytics (e.g., valium, "quaaludes"), Stimulants (cocaine, methamphetamine), Tobacco
*Substance use disorder does not apply to caffeine. Regardless of the particular substance, the diagnosis of a substance use disorder is based upon a pathological set of behaviors related to the use of that substance.
(http://dsm.psychiatryonline.org/doi/full/10.1176/appi.books.9780890425596.dsm16)

These behaviors fall into four main categories: 1. Impaired control 2. Social impairment 3. Risky use 4. Pharmacological indicators (tolerance and withdrawal)

Criteria for Substance Use Disorders

Substance use disorders span a wide variety of problems arising from substance use, and cover 11 different criteria:

1. Taking the substance in larger amounts or for longer than you're meant to
2. Wanting to cut down or stop using the substance but not managing to
3. Spending a lot of time getting, using, or recovering from use of the substance
4. Cravings and urges to use the substance
5. Not managing to do what you should at work, home, or school because of substance use
6. Continuing to use, even when it causes problems in relationships
7. Giving up important social, occupational, or recreational activities because of substance use
8. Using substances again and again, even when it puts you in danger
9. Continuing to use, even when you know you have a physical or psychological problem that could have been caused or made worse by the substance
10. Needing more of the substance to get the effect you want (tolerance)
11. Development of withdrawal symptoms, which can be relieved by taking more of the substance

Background and Types of Substance Use Disorders

The following is a list with descriptions of the most common substance use disorders in the United States.

Alcohol Use Disorder (AUD)

Excessive alcohol use can increase a person's risk of developing serious health problems in addition to those issues associated with intoxication behaviors and alcohol withdrawal symptoms. According to the Centers for Disease Control and Prevention (CDC), excessive alcohol use causes 88,000 deaths a year.

Data from the National Survey on Drug Use and Health (NSDUH) — 2014 (PDF | 3.4 MB) show that in 2014, slightly more than half (52.7%) of Americans ages 12 and up

reported being current drinkers of alcohol. Most people drink alcohol in moderation. However, of those 176.6 million alcohol users, an estimated 17 million have an AUD.

Many Americans begin drinking at an early age. In 2012, about 24% of eighth graders and 64% of twelfth graders used alcohol in the past year.

The definitions for the different levels of drinking include the following:

- Moderate Drinking—According to the Dietary Guidelines for Americans, moderate drinking is up to 1 drink per day for women and up to 2 drinks per day for men.
- Binge Drinking—SAMHSA defines binge drinking as drinking 5 or more alcoholic drinks on the same occasion on at least 1 day in the past 30 days. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) defines binge drinking as a pattern of drinking that produces blood alcohol concentrations (BAC) of greater than 0.08 g/dL. This usually occurs after 4 drinks for women and 5 drinks for men over a 2 hour period.
- Heavy Drinking—SAMHSA defines heavy drinking as drinking 5 or more drinks on the same occasion on each of 5 or more days in the past 30 days.

Excessive drinking can put you at risk of developing an alcohol use disorder in addition to other health and safety problems. Genetics have also been shown to be a risk factor for the development of an AUD.

To be diagnosed with an AUD, individuals must meet certain diagnostic criteria. Some of these criteria include problems controlling intake of alcohol, continued use of alcohol despite problems resulting from drinking, development of a tolerance, drinking that leads to risky situations, or the development of withdrawal symptoms. The severity of an AUD—mild, moderate, or severe—is based on the number of criteria met.

Tobacco Use Disorder

According to the CDC, more than 480,000 deaths each year are caused by cigarette smoking. Tobacco use and smoking do damage to nearly every organ in the human body, often leading to lung cancer, respiratory disorders, heart disease, stroke, and other illnesses.

In 2014, an estimated 66.9 million Americans aged 12 or older were current users of a tobacco product (25.2%). Young adults aged 18 to 25 had the highest rate of current use

of a tobacco product (35%), followed by adults aged 26 or older (25.8%), and by youths aged 12 to 17 (7%).

In 2014, the prevalence of current use of a tobacco product was 37.8% for American Indians or Alaska Natives, 27.6% for whites, 26.6% for blacks, 30.6% for Native Hawaiians or other Pacific Islanders, 18.8% for Hispanics, and 10.2% for Asians.

Stimulant Use Disorder

Stimulants increase alertness, attention, and energy, as well as elevate blood pressure, heart rate, and respiration. They include a wide range of drugs that have historically been used to treat conditions, such as obesity, attention deficit hyperactivity disorder and, occasionally, depression. Like other prescription medications, stimulants can be diverted for illegal use. The most commonly abused stimulants are amphetamines, methamphetamine, and cocaine. Stimulants can be synthetic (such as amphetamines) or can be plant-derived (such as cocaine). They are usually taken orally, snorted, or intravenously.

In 2014, an estimated 913,000 people ages 12 and older had a stimulant use disorder because of cocaine use, and an estimated 476,000 people had a stimulant use disorder as a result of using other stimulants besides methamphetamines. In 2014, almost 569,000 people in the United States ages 12 and up reported using methamphetamines in the past month.

Symptoms of stimulant use disorders include craving for stimulants, failure to control use when attempted, continued use despite interference with major obligations or social functioning, use of larger amounts over time, development of tolerance, spending a great deal of time to obtain and use stimulants, and withdrawal symptoms that occur after stopping or reducing use, including fatigue, vivid and unpleasant dreams, sleep problems, increased appetite, or irregular problems in controlling movement.

Hallucinogen Use Disorder

Hallucinogens can be chemically synthesized (as with lysergic acid diethylamide or LSD) or may occur naturally (as with psilocybin mushrooms, peyote). These drugs can produce visual and auditory hallucinations, feelings of detachment from one's environment and oneself, and distortions in time and perception.

In 2014, approximately 246,000 Americans had a hallucinogen use disorder. Symptoms of hallucinogen use disorder include craving for hallucinogens, failure to control use when attempted, continued use despite interference with major obligations or social functioning, use of larger amounts over time, use in risky situations like driving, development of tolerance, and spending a great deal of time to obtain and use hallucinogens.

Opioid Use Disorder

Opioids reduce the perception of pain but can also produce drowsiness, mental confusion, euphoria, nausea, constipation, and, depending upon the amount of drug taken, can depress respiration. Illegal opioid drugs, such as heroin and legally available pain relievers such as oxycodone and hydrocodone can cause serious health effects in those who misuse them. Some people experience a euphoric response to opioid medications, and it is common that people misusing opioids try to intensify their experience by snorting or injecting them. These methods increase their risk for serious medical complications, including overdose. Other users have switched from prescription opiates to heroin as a result of availability and lower price. Because of variable purity and other chemicals and drugs mixed with heroin on the black market, this also increases risk of overdose. Overdoses with opioid pharmaceuticals led to almost 17,000 deaths in 2011. Since 1999, opiate overdose deaths have increased 265% among men and 400% among women.

In 2014, an estimated 1.9 million people had an opioid use disorder related to prescription pain relievers and an estimated 586,000 had an opioid use disorder related to heroin use.

Symptoms of opioid use disorders include strong desire for opioids, inability to control or reduce use, continued use despite interference with major obligations or social functioning, use of larger amounts over time, development of tolerance, spending a great deal of time to obtain and use opioids, and withdrawal symptoms that occur after stopping or reducing use, such as negative mood, nausea or vomiting, muscle aches, diarrhea, fever, and insomnia.

Link: https://www.samhsa.gov/find-help/disorders

Supporting Articles Citing Research:

Article 1: 'New potential for marijuana: Treating drug addiction'
By Susan Scutti, CNN | Updated 7:21 PM ET, Wed May 17, 2017

(CNN) Harm reduction is a strategy for treating addiction that begins with acceptance. A friendlier, less disciplined sister of abstinence, this philosophy aims to reduce the overall level of drug use among people who are unable or simply unwilling to stop. What should naturally follow is a decrease in the many negative consequences of drug use.

In other words: progress, not perfection, as advocates of Alcoholics Anonymous often say.

Most European countries and Canada have embraced the idea of harm reduction, designing policies that help people with drug problems to live better, healthier lives rather than to punish them.

On the front lines of addiction in the United States, some addiction specialists have also begun to work toward this end.

Joe Schrank, program director and founder of High Sobriety, is one of them. He says his Los Angeles-based treatment center uses medicinal cannabis as a detox and maintenance protocol for people who have more severe addictions, although it's effectiveness is not scientifically proven.

"So it's a harm-reduction theory," he said. "With cannabis, there is no known lethal dose; it can be helpful for certain conditions."

Still, harm reduction is gaining acceptance in the wider field of addiction specialists in the U.S.

"In principle, what we have aimed for many years is to find interventions that would lead to complete abstinence," said Dr. Nora Volkow, director of the National Institute on Drug Abuse. Practically, though, that has been very difficult to achieve with relapsing addictions.

"One of the things is, we don't have any evidence-based medication that has proven to be efficacious for the treatment of cocaine addiction," Volkow said. "So we currently

have no medicine to intervene, and it can be a very severe addiction and actually quite dangerous."

Dangerous because it gives users a high that literally alters the brain. Medical consequences of cocaine addiction include seizure, stroke and bleeding within the brain.

"We have started to explore the extent to which interventions that can decrease the amount of drug consumed can have benefits to the individual," Volkow said, adding that she'd make this same argument for opioids and heroin. "It would be valuable to decrease the amount of drug consumed."

Schrank is clear on the value of simply reducing drug use.

"We think of addiction as this light switch you can turn on and off," he said. "What we're learning is that for some people, it's similar to scuba diving: You can only come up 20 feet so often or you get very, very sick. When people stop immediately and that abruptly, it really makes them vulnerable."

Schrank, who readily concedes there are possible health and addiction risks with marijuana, says he offers his cannabis detox and maintenance protocol to people addicted to crack cocaine as well as those trying to kick opioids. Through the years, he says, he's treated about 50 people with this technique and expects to see "more people wanting to try to have a voice in their recovery rather than just plug into systems telling them what to do."

Marijuana "can really help people with pain management and other health issues, or it can help them be safer," Schrank said.

Reversing heroin's damage

Yasmin Hurd, director of the Addiction Institute at Mount Sinai School of Medicine, says generally, cannabidiol is the more important compound when it comes to marijuana as a treatment for addiction. It is one of the two primary cannabinoids, along with Δ9-tetrahydrocannabinol (THC), found in the cannabis plant. In terms of the wider scope of medical marijuana research, this is the "same cannabidiol being looked at for the kids with epilepsy," Hurd said.

THC, she says, binds to cannabinoid receptors in our brains (as do the natural cannabinoids our bodies produce), and it is the stimulation of those receptors that

brings a "high." By comparison, cannabidiol has very weak effects in this regard and negatively modulates that receptor, instead.

Yet cannabidiol reverses some of the brain changes that occur with heroin use, Hurd says, based on her own studies of the compound.

For instance, heroin harms the glutamate transmitter system, which is important for decision-making, cognition and even reward, explains Hurd.

"We found that (cannabidiol) reversed the impairments caused by heroin, for example, on the glutamatergic receptors," Hurd said. Similarly, cannabidiol reversed damage to the cannabinoid receptors themselves caused by heroin, while activating the serotonin system: the neurotransmitter system believed to affect mood and a common target for makers of anti-anxiety and antidepressant medications.

More generally, cannabidiol positively influences our biological systems that are linked to the negative components of addiction, such as anxiety and inhibitory control, Hurd suggests.

"We still haven't figured out how it works," Hurd said. She notes that although cannabidiol is believed to be a "treatment to consider for opioid addiction and other drugs," there aren't a lot of data, especially with regard to its potential effects for cocaine addiction.

Adding to the data is a recent study, funded in part by a company applying to the Canadian government for a license to produce medical cannabis, exploring one possible harm reduction plan: swapping crack cocaine for marijuana.

Link:
http://www.cnn.com/2017/05/17/health/addiction-cannabis-harm-reduction/index.html

Article 2: 'High Sobriety: A Path Toward Life and Choice.'

(From the California Program Currently Treating Addiction with Medical Cannabis)

"High Sobriety supports a spectrum of recovery alternatives for individuals who have been previously unable to stop using alcohol and/or other drugs after attending traditional abstinence-based settings. The sheer number of people that fall into this category is astounding. For example, if you examine statistics from SAMHSA (Substance Abuse & Mental Health Services Administration), approximately 25% of individuals who undergo abstinence-based treatment, do not relapse. Although any measure of success is encouraging, we at High Sobriety are committed to supporting the remaining 75%, who incidentally, rank in the millions.

Tradition Vs. Change

The majority of other recovery programs are staffed with "recovering" addicts and alcoholics. Most of these individuals participate (hopefully) in a 12-Step Program, which they believe, is the one path that helped them get clean and sober. Therefore, when a client questions the concept of total abstinence, the staff member will shut it down, citing no real data, except for their own personal experience in 12-Step Meetings.

Herein lies the crux of the problem; individuals that don't adhere to the concept of total abstinence, but have improved their lives, do not attend 12-Step Meetings. They are not welcome there, unless of course, they want to stop doing what has worked for them, and adhere to a confusing set of internally known but publicly unsung standards about which types of drugs are acceptable in the 12-Step Program and when they can be used. For example, a benzodiazepine prescribed by a Psychiatrist for the treatment of anxiety is probably reasonable, but cannabis prescribed for Crohn's Disease or a Sleep Disorder is definitely not!

Although these standards may make sense to most traditional practitioners working in traditional treatment settings, they don't make a lot of sense when considering the needs of the 75% who don't understand the concept of abstinence, and more importantly, have probably demonstrated an inherent inability to abide by that philosophy in the past.

We support our residents' cannabis replacement approach, where it is in full compliance with law and under medical supervision. Cannabis is used for a variety of medical conditions for treating and aiding symptomatic care. Cannabis can aid in the cleansing process, helping with discomfort, insomnia, and flu-like symptoms associated with the withdrawal process, reducing or eliminating the need for other drugs. After the initial cleansing process, a doctor of the residents' choice provides a comprehensive and

collaborative evaluation to determine an individual's goals for recovery. The determination of how cannabis is used is ultimately made by the doctor, like any other medication.

Post cleansing, cannabis continues to be an option under medical supervision. When someone has been using for a prolonged period of time, moving into total abstinence within 30 days may not be a realistic undertaking, it may not even be the best strategy. It certainly raises the question: if total abstinence is the best course of action, why are the results so poor?"

Link: https://highsobrietytreatment.com

Article 3: 'How Cannabis Can Combat the Opioid Epidemic: An Interview With Philippe Lucas' | Leafly

Philippe Lucas has deep roots in Canada's cannabis culture. After co-founding the Vancouver Island Compassion Society medical dispensary in 1999, Lucas applied himself to cannabis science, working as a graduate researcher with the Center for Addictions Research of British Columbia and serving as founding board member of both the Multidisciplinary Association of Psychedelic Studies Canada and the Canadian Drug Policy Coalition. In 2013, he received the Queen Elizabeth II Diamond Jubilee Medal for his research on medical cannabis.
(Full disclosure/fun fact: He's also Vice President of Patient Advocacy at Tilray, the cannabis production company owned by Privateer Holdings, which also owns Leafly.)
Most recently, Lucas is the author of a new study: "Rationale for cannabis-based interventions in the opioid overdose crisis," published last month in the Harm Reduction Journal. In the study, Lucas lays out a variety of roles that cannabis might play in combating the opioid epidemic, which currently kills 38,000 people in the U.S. and Canada each year and ranks as the leading cause of death among Americans under 50.
His study added an important perspective to the growing body of evidence supporting the notion of cannabis as healing tool in the opioid crisis. That idea is quickly moving into mainstream thought, as we've seen recently with the public pronouncements of Utah Sen. Orrin Hatch and, just this week, Dr. Oz.

Over the phone from his office in Nanaimo, Lucas let me interrogate him about specifics of the study.

Dave Schmader: What inspired you to undertake this study?

Philippe Lucas: Whether it's medical use or recreational use, cannabis appears to be having an impact on the rates of opioid abuse. This study is a summation of the evidence, and I've taken that summation to suggest three opportunities for cannabis to intervene in the opioid crisis.

And those are...?

First is introduction—if physicians start recommending the use of medical cannabis prior to introducing patients to opioids, those patients that find cannabis to be a successful treatment for their chronic pain might never have to walk down the very tricky path of opioid use that all too often leads to abuse or using to much or overdose.

"Patients that find cannabis to be a successful treatment for their chronic pain might never have to walk down the very tricky path of opioid use."

The second opportunity is reduction, for those patients who are successfully using opioids in the treatment of their chronic pain or other conditions but are worried about increasing their use of opioids over time. The evidence suggests you can introduce cannabis as an adjunct treatment and reduce the cravings for opioids, therefore potentially steering people away and reducing the risk of opioid overdose and opioid dependence.

The third part is cessation. Once individuals have become dependent on opioids and they recognize that dependence and are seeking treatment for it through opioid replacement therapy like methadone and suboxone, you can potentially introduce cannabis as an adjunct treatment to increase the success rate of the methadone or suboxone treatment. The reason this point is so important is that when people with an opioid dependence fail out of treatment, that's the period where they become the most vulnerable to potential overdose. Replacement therapy has failed, they're at their most vulnerable, and they go back to the illicit drug market, potentially risking overdose.

A key concept in the study is the "substitution effect."

Yes. The substitution effect is an economic concept that suggests that the use of one substance never stands alone. In fact, the use of one substance can affect the use of another. When it comes to psychoactive substances, the use of a substance can be affected by changes in price, changes in legality or regulatory access, or changes in the product itself in terms of potency. And that can really affect the use of another drug.

"In medical cannabis states, there was a 25 percent reduction in opioid overdose deaths."

A 2014 study showed that in medical cannabis states, there was a 25 percent reduction in opioid overdose deaths compared to neighboring states that didn't have medical cannabis programs. There's a growing body of research showing that simply making medical cannabis available in a number of US states and in Canada has reduced rates of not just opioid use, but also the use of alcohol, tobacco, and illicit substances, often leading to total abstinence of those substances. So we're looking at cannabis as a potential therapeutic agent, but also as a harm reduction agent when it comes to problematic substance use. This evidence suggests cannabis could be an exit drug to problematic substance use and addiction.

In the study you write, "Cannabis augments the pain-relieving potential of opioids and can re-potentiate their effects." Tell me about re-potentiation.

Research suggests that when you use cannabis alongside opioids in the treatment of chronic pain, you seem to get a synergistic effect—a greater effect than you might have if each was taken individually. People who have been using opioids for some time sometimes have to increase their dose, and cannabis presents another option for physicians, so instead of increasing the dose of opioids they can instead prescribe medical cannabis as an adjunct treatment in order to keep the patient at a lower dose of opioids, thereby reducing the risk of overdose.

Another study quote: "It would seem logical to seek to develop policies and associated education strategies to increase physician support for cannabis for therapeutic purposes in the treatment of chronic pain." This does seem logical. What are the chances of it happening?

Right now we're facing this tremendous public-health threat around the opioid overdose crisis. Opioid overdose is the most common cause of accidental death in Canada and the US right now. The over-prescription of opioids seems to be leading the way, in that four out of five people currently injecting opioids say that they started by using prescription opioids. There's an oversaturation of the market and an over-availability on the black market.

I think that if we can shift prescription patterns by physicians—so that instead of first prescribing opioids and then, if those opioids fail, moving on to medical cannabis—we can modernize those policies and instead focus on introducing medical cannabis first. That's based on all the available evidence, which indicates that it's far less harmful than prescription opioids in terms of dependence and risk of overdose.

Right now in Canada and in US states with medical marijuana, physicians are encouraged to prescribe opioids first and if those don't work, cannabis is considered as a third- or fourth-line treatment option. We need to flip that around and make cannabis

the second-line treatment option and move opioids to third or fourth options if indeed cannabinoids are not successful.

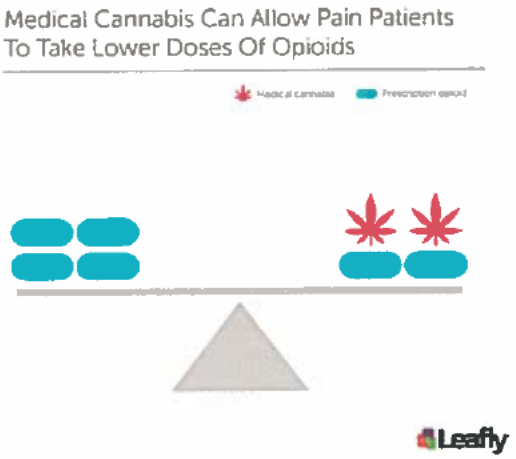


Figure 1: When THC and prescription opioids are co-administered, the same level of pain relief is achieved with lower opioid dosage. This can prevent some of the negative side effects of opioid treatment and allow patients to reduce opioid use. (Photo credit: Amy Phung/Leafly)

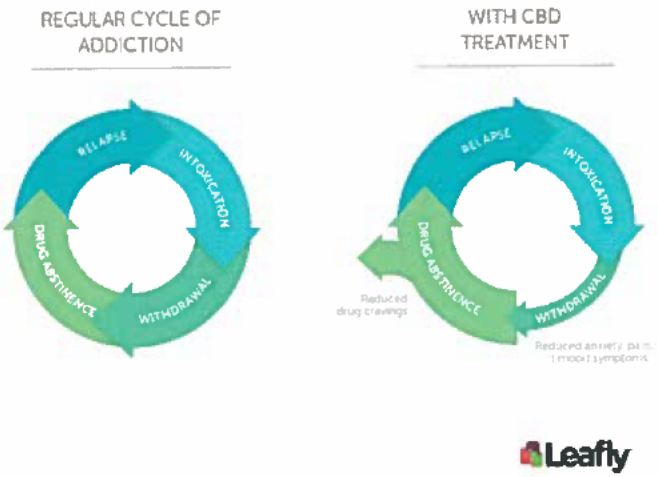


Figure 2: CBD treatment can reduce the chance of relapse for those struggling with drug addiction by altering the withdrawal and drug abstinence phases. Symptoms of withdrawal will be treated, decreasing pain, anxiety, and mood symptoms. CBD can promote drug abstinence by reducing drug craving through suppression of the reward system of the brain. (Photo credit: Amy Phung/Leafly) Source:

https://www.leafly.com/news/health/how-cannabis-can-combat-the-opioid-epidemic-an-interview-with-philippe-lucas

Article/Video 4: "How Medical Cannabis Can Cure the Opioid Epidemic with Dr. Jacob Vigil"

Drs. Jacob Vigil, Anthony Reeve, and Sarah Stith talk about how medical cannabis can treat chronic pain and stop the opioid epidemic (Youtube Video).
Visit the University of New Mexico Medical Cannabis Research Fund at: mcrf.unm.edu
https://www.youtube.com/watch?v=u368htFsZOo

Article 5: "Study Finds Medical Cannabis May Reduce Use Of Dangerous Prescription Drugs"

The United States is in the midst of a major drug epidemic. Stories continue to roll in daily about the lives claimed by prescription and non-prescription drug overdoses. The numbers are staggering. Opioids alone (including prescription painkillers and street heroin) killed more than 33,000 people in 2015, 90+ Americans every single day, and more than any year on record according to the Center for Disease Control (CDC). From 2000 to 2015, half a million people died from prescription drug overdoses.

The opioid epidemic is the leading preventable form of death in the United States.

"The potential for addiction and health risks associated with using multiple scheduled drugs places additional direct monetary and health costs on patients and healthcare systems due to an increased number of side effects, risky drug interactions, dependency, and overdose" stated University of New Mexico researchers Jacob Miguel Vigil and Sarah See Stith, of a new study titled, Effects of Legal Access to Cannabis on Scheduled II-V Drug Prescriptions, which will be soon released in an upcoming issue of the Journal of American Medical Directors Association.

The study resulted from insights provided by co-investigator Dr. Anthony Reeve, a pain specialist from the Industrial Rehabilitation Pain Clinics, Albuquerque, N.M. and also

one of the first physicians to authorize the use of cannabis for patients with chronic pain in the state of New Mexico.

Reeve observed a number of his patients coming back to see him, not only less frequently after enrolling in the New Mexico Medical Cannabis Program (MCP), but anecdotally, they would often claim that they were not only reducing their pain medications, but other types of prescription medications as well.

In their historical cohort study the researchers compared individuals that enrolled in the medical cannabis program to individuals with a similar diagnosis that chose not to enroll in the medical cannabis program but were offered the same authorization, to measure the effect of enrollment in a state-authorized United States' MCP on Scheduled II-V drug prescription patterns.

They compared 83 chronic pain patients, who enrolled in the New Mexico Medical Cannabis Program during a five+ year period from April 2010 to October 2015, to 42 non-enrolled patients over a 24 month period (starting 6 months prior to enrollment for the MCP patients) using the Prescription Monitoring Program.

Using outcome variables including baseline levels and pre- and post-enrollment monthly trends in the numbers of drug prescriptions, distinct drug classes, dates prescription drugs were filled, and prescribing providers, the researchers found that 28 cannabis program enrollees (34 percent) and one comparison group patient (2 percent) ceased the use of all scheduled prescription medications by the last six months of the observation period.

Age and gender-adjusted regressions show that, although no statistically significant differences existed in pre-enrollment levels and trends, the post-enrollment trend among MCP patients is statistically significantly negative for all four measures of scheduled drug medication usage, while the post-enrollment trend is zero among the comparison group. The cannabis program enrollees showed statistically significantly lower levels across all four measures in comparison to the non-enrollees by 10 months post-enrollment. The researchers hypothesize that legal access to cannabis may reduce

the use of multiple classes of dangerous prescription medications in certain patient populations.

"Our current opioid epidemic is the leading preventable form of death in the United States, killing more people than car accidents and gun violence," said Vigil, the senior author and Associate Professor in the Department of Psychology. "No one has ever died from smoking too much cannabis. Therefore, the relative safety and efficacy of using cannabis in comparison to that of the other scheduled medications should be taken by the health providers and legislators, and may very well to have been considered by the patients in our study."

The authors state that increased patient access to MCPs could impact prescription drug activity in numerous ways. "Potentially, MCPs might drive increased prescribing of medications as a result of side effects of cannabis use, including agitation or somnolence. Alternatively, access to cannabis could lead to a reduction in scheduled prescription drug use, if it treats patients' underlying condition(s) more effectively than scheduled drugs requiring a prescription."

The researchers are currently employing naturalistic studies to identify how older patients use and are affected by opioids, benzodiazepines, and medical cannabis for treating significant and societally expensive health conditions.

Link:
http://www.cannabisnewsjournal.co/2017/09/study-finds-medical-cannabis-may-reduce.html

Article 6: 'Dr. Mehmet Oz said medical cannabis could be an "exit drug" that helps reduce opioid addiction.' | Forbes Magazine

"Medical Marijuana... it may be the exit drug to get us out of the narcotic epidemic."

"The real story is the hypocrisy around medical marijuana," Mehmet Oz -- better known as Dr. Oz -- said in an appearance on Fox News.

Link:
https://www.forbes.com/sites/tomangell/2017/09/19/dr-oz-says-medical-marijuana-could-help-solve-opioid-addiction/

Article 7. End Pain, Not Lives

Americans for Safe Access and the U.S. Pain Foundation launched the End Pain Not Lives campaign on November 1, 2017, to address the root of the opioid epidemic in the United States.

The epidemic is claiming over 130 lives a day.

Current public health policies focus solely on downstream strategies and criminalizing patients and medical professionals. Yet the research shows a nearly 25% decrease of opioid overdose deaths in states with medical cannabis laws. However, medical cannabis is not option for all patients due to the federal-state legal conflict, inadequacies in state laws, and lack of medical professional and patient education.

Link: https://www.safeaccessnow.org/end_pain_not_lives

Supporting Medical and Scientific Research Studies

1. 'Cannabidiol as a Novel Candidate Alcohol Use Disorder Pharmacotherapy: A Systematic Review' Published: 30 January 2019 | https://doi.org/10.1111/acer.13964

Abstract
There is substantial interest in the therapeutic potential of cannabidiol (CBD), a nonpsychoactive cannabinoid found in plants of the genus Cannabis. The goal of the current systematic review was to characterize the existing literature on this topic and to evaluate the credibility of CBD as a candidate pharmacotherapy for alcohol use disorder (AUD). Using a comprehensive search strategy, 303 unique potential articles were identified and 12 ultimately met criteria for inclusion (8 using rodent models, 3 using healthy adult volunteers, and 1 using cell culture). In both rodent and cell culture models, CBD was found to exert a neuroprotective effect against adverse alcohol

consequences on the hippocampus. In rodent models, CBD was found to attenuate alcohol-induced hepatotoxicity, specifically, alcohol-induced steatosis. Finally, findings from preclinical rodent models also indicate that CBD attenuates cue-elicited and stress-elicited alcohol seeking, alcohol self-administration, withdrawal-induced convulsions, and impulsive discounting of delayed rewards. In human studies, CBD was well tolerated and did not interact with the subjective effects of alcohol. Collectively, given its favorable effects on alcohol-related harms and addiction phenotypes in preclinical models, CBD appears to have promise as a candidate AUD pharmacotherapy. This is further bolstered by the absence of abuse liability and its general tolerability. A clear limitation to the literature is the paucity of human investigations. Human preclinical and clinical studies are needed to determine whether these positive effects in model systems substantively translate into clinically relevant outcomes.

Link: https://onlinelibrary.wiley.com/doi/abs/10.1111/acer.13964

2. 'Pills to Pot: Observational Analyses of Cannabis Substitution Among Medical Cannabis Users With Chronic Pain' |Published 011019 | DOI: https://doi.org/10.1016/j.jpain.2019.01.010

Highlights

•Medical cannabis users reported substituting cannabis for pain medications.
•User rationale for substitution was fewer side effects and better pain management.
•Most users reported improved pain and health since using cannabis.
•Intentions behind and duration of cannabis use affected substitution behavior.
•Unlike previous studies, >50% of participants were women and adults >50 years old.

Abstract

Chronic pain is common, costly, and challenging to treat. Many individuals with chronic pain have turned to cannabis as an alternative form of pain management. We report results from an ongoing, online survey of medical cannabis users with chronic pain nationwide about how cannabis affects pain management, health, and pain medication use. We also examined whether and how these parameters were affected by concomitant recreational use, and duration of use (novice: <1 year vs experienced: ≥1 year). There were 1,321 participants (59% female, 54% ≥50 years old) who completed the survey. Consistent with other observational studies, approximately 80% reported substituting cannabis for traditional pain medications (53% for opioids, 22% for benzodiazepines),

citing fewer side effects and better symptom management as their rationale for doing so. Medical-only users were older (52 vs 47 years old; P < .0001), less likely to drink alcohol (66% vs 79%, P < .0001), and more likely to be currently taking opioids (21% vs 11%, P < .0001) than users with a combined recreational and medical history. Compared with novice users, experienced users were more likely to be male (64% vs 58%; P < .0001), take no concomitant pain medications (43% vs 30%), and report improved health (74% vs 67%; P = .004) with use. Given that chronic pain is the most common reason for obtaining a medical cannabis license, these results highlight clinically important differences among the changing population of medical cannabis users. More research is needed to better understand effective pain management regimens for medical cannabis users.

Perspective: This article presents results that confirm previous clinical studies suggesting that cannabis may be an effective analgesic and potential opioid substitute. Participants reported improved pain, health, and fewer side effects as rationale for substituting. This article highlights how use duration and intentions for use affect reported treatment and substitution effects.

Link: https://www.jpain.org/article/S1526-5900(18)30735-1/fulltext

3. 'Medical cannabis patterns of use and substitution for opioids & other pharmaceutical drugs, alcohol, tobacco, and illicit substances; results from a cross-sectional survey of authorized patients' | Harm Reduction Journal 2019 | https://doi.org/10.1186/s12954-019-0278-6

Abstract
Background: A 239-question cross-sectional survey was sent out via email in January 2017 to gather comprehensive information on cannabis use from Canadian medical cannabis patients registered with a federally authorized licensed cannabis producer, resulting in 2032 complete surveys.
Methods: The survey gathered detailed demographic data and comprehensive information on patient patterns of medical cannabis use, including questions assessing the self-reported impact of cannabis on the use of prescription drugs, illicit substances, alcohol, and tobacco.
Results: Participants were 62.6% male (n = 1271) and 91% Caucasian (n = 1839). The

mean age was 40 years old, and pain and mental health conditions accounted for 83.7% of all respondents (n = 1700). Then, 74.6% of respondents reported daily cannabis use (n = 1515) and mean amount used per day was 1.5 g. The most commonly cited substitution was for prescription drugs (69.1%, n = 953), followed by alcohol (44.5%, n = 515), tobacco (31.1%, n = 406), and illicit substances (26.6%, n = 136). Opioid medications accounted for 35.3% of all prescription drug substitution (n = 610), followed by antidepressants (21.5%, n = 371). Of the 610 mentions of specific opioid medications, patients report total cessation of use of 59.3% (n = 362).
Conclusions :This study offers a unique perspective by focusing on the use of a standardized, government-regulated source of medical cannabis by patients registered in Canada's federal medical cannabis program. The findings provide a granular view of patient patterns of medical cannabis use, and the subsequent self-reported impacts on the use of opioids, alcohol, and other substances, adding to a growing body of academic research suggesting that increased regulated access to medical and recreational cannabis can result in a reduction in the use of and subsequent harms associated with opioids, alcohol, tobacco, and other substances.
Link:
https://harmreductionjournal.biomedcentral.com/articles/10.1186/s12954-019-0278-6

4. 'Opioid dose reduction and pain control with medical cannabis.' | Journal of Clinical Oncology | November 28, 2018 |DOI: 10.1200/JCO.2018.36.34_suppl.189 Journal of Clinical Oncology 36, no. 34_suppl (December 1 2018) 189-189.

Abstract:

Background: The use of medical cannabis (MC) for palliation of symptoms is on the rise in cancer and rheumatological patients. Whether there is a potential for opioid dose reduction (ODR) and or quality of life improvements (QOL) is unclear. Methods: A retrospective cohort was evaluated to understand the pattern of care and QOL outcomes with MC use across rural multidisciplinary practices in New Mexico. MC use (> 1 mo.), EMR interrogation, urine toxicology screening were used to identify patients. QOL questionnaire included a graded pain scale. Morphine equivalent (ME) dose was used to estimate changes in opioid dose. ODR was defined as any reduction of baseline opioid dose. A chi-square was performed to evaluate associations.

Results: A total of 133 patients were identified between Jan 2017- May 2017. (M/F) 65/68; median age of 53 (range 20 - 84). Nineteen percent (25/133) had a cancer diagnosis. Pain score improved in 80 % of patients with cancer and in 75% (64/89) of non-cancer patients (x2 0.24 p = 0.62). ODR was achieved in 41% (54/133) of all patients on MC. Of these, 63% (34/54) had a 25% ODR and 37% (20/54) had 26% or more ODR (x2 12.8 p = 0.002). In cancer patients, a 25% ODR was achieved in 73% (x2 0.51 p = 0.771). All patients (15/15) using MC and high dose opioid (morphine equivalent ≥ 50 mg/day) had some ODR. Co-adjuvant NSAIDs with MC improved pain score in 67% of all cases vs 33% among non-NSAID cohort (x2 10.7 p = 0.001). ODR was achieved in 32% of patients with active depression vs 68% of patients without (x2 0.044 p = 0.83).

Conclusions: In this rural cohort, MC use led to ODR in 41% of all patients. Depression was a negative predictor of ODR. NSAID use facilitated ODR. It will be important to assess MC toxicity before considering this intervention. This study did not include toxicity data due to the retrospective nature of this study and its inherent limitations. Prospective data are needed to confirm these findings.

Link: http://ascopubs.org/doi/abs/10.1200/JCO.2018.36.34_suppl.189

5. 'Translational Investigation of the Therapeutic Potential of Cannabidiol (CBD): Toward a New Age' | Front. Immunol., 21 September 2018 | https://doi.org/10.3389/fimmu.2018.02009

"Likewise, the lack of effective medicines to treat crack cocaine dependence is a clear indication of the need for further research in this field. In a collaborative animal study, we found that CBD protects against cocaine-induced seizures, possibly through activation of the mTOR pathway, with the concomitant reduction in glutamate release."

Background: Among the many cannabinoids in the cannabis plant, cannabidiol (CBD) is a compound that does not produce the typical subjective effects of marijuana.

Objectives: The aim of the present review is to describe the main advances in the development of the experimental and clinical use of cannabidiol CBD in neuropsychiatry.

Methods: A non-systematic search was performed for studies dealing with therapeutic applications of CBD, especially performed by Brazilian researchers.

Results: CBD was shown to have anxiolytic, antipsychotic and neuroprotective properties. In addition, basic and clinical investigations on the effects of CBD have been carried out in the context of many other health conditions, including its potential use in epilepsy, **substance abuse and dependence**, schizophrenia, social phobia, post-traumatic stress, depression, bipolar disorder, sleep disorders, and Parkinson.

Discussion: CBD is an useful and promising molecule that may help patients with a number of clinical conditions. Controlled clinical trials with different neuropsychiatric populations that are currently under investigation should bring important answers in the near future and support the translation of research findings to clinical settings.

Link: https://www.frontiersin.org/articles/10.3389/fimmu.2018.02009/full

6. 'Medicinal Properties of Cannabinoids, Terpenes, and Flavonoids in Cannabis, and Benefits in Migraine, Headache, and Pain: An Update on Current Evidence and Cannabis Science' | First published: 27 August 2018 https://doi.org/10.1111/head.13345

A review found "accumulating evidence for various therapeutic benefits of cannabis/cannabinoids, especially in the treatment of pain, which may also apply to the treatment of migraine and headache" and that "there is also supporting evidence that cannabis may assist in opioid detoxification and weaning, thus making it a potential weapon in battling the opioid epidemic."

Abstract
Background
Comprehensive literature reviews of historical perspectives and evidence supporting cannabis/cannabinoids in the treatment of pain, including migraine and headache, with associated neurobiological mechanisms of pain modulation have been well described. Most of the existing literature reports on the cannabinoids Δ9-tetrahydrocannabinol (THC) and cannabidiol (CBD), or cannabis in general. There are many cannabis strains that vary widely in the composition of cannabinoids, terpenes, flavonoids, and other

compounds. These components work synergistically to produce wide variations in benefits, side effects, and strain characteristics. Knowledge of the individual medicinal properties of the cannabinoids, terpenes, and flavonoids is necessary to cross-breed strains to obtain optimal standardized synergistic compositions. This will enable targeting individual symptoms and/or diseases, including migraine, headache, and pain.

Objective
Review the medical literature for the use of cannabis/cannabinoids in the treatment of migraine, headache, facial pain, and other chronic pain syndromes, and for supporting evidence of a potential role in combating the opioid epidemic. Review the medical literature involving major and minor cannabinoids, primary and secondary terpenes, and flavonoids that underlie the synergistic entourage effects of cannabis. Summarize the individual medicinal benefits of these substances, including analgesic and anti-inflammatory properties.

Conclusion
There is accumulating evidence for various therapeutic benefits of cannabis/cannabinoids, especially in the treatment of pain, which may also apply to the treatment of migraine and headache. There is also supporting evidence that cannabis may assist in opioid detoxification and weaning, thus making it a potential weapon in battling the opioid epidemic. Cannabis science is a rapidly evolving medical sector and industry with increasingly regulated production standards. Further research is anticipated to optimize breeding of strain-specific synergistic ratios of cannabinoids, terpenes, and other phytochemicals for predictable user effects, characteristics, and improved symptom and disease-targeted therapies.

Link: https://onlinelibrary.wiley.com/doi/pdf/10.1111/head.13345

7. 'Time Trends Matter: The Case of Medical Cannabis Laws and Opioid Overdose Mortality' | 16 Jun 2018 | https://mpra.ub.uni-muenchen.de/87237/

A study concluded that the "substantial reduction in opioid-related mortality associated with the implementation of medical cannabis laws can be explained by selection bias" because "states that legalized medical cannabis exhibit lower pre-existing mortality trends."

Abstract
Mortality due to opioid overdoses has been growing rapidly in the U.S., with some states experiencing much steeper increases than others. Legalizing medical cannabis could reduce opioid-related mortality if potential opioid users substitute towards cannabis as a safer alternative. I show, however, that a substantial reduction in opioid-related mortality associated with the implementation of medical cannabis laws can be explained by selection bias. States that legalized medical cannabis exhibit lower pre-existing mortality trends. Accordingly, the mitigating effect of medical cannabis laws on opioid-related mortality vanishes when I include state-specific time trends in state-year-level difference-in-differences regressions.

Link: https://mpra.ub.uni-muenchen.de/87237/1/MPRA_paper_87237.pdf

8. 'The Grass Might Be Greener: Medical Marijuana Patients Exhibit Altered Brain Activity and Improved Executive Function after 3 Months of Treatment' | Front. Pharmacol., 17 January 2018 | https://doi.org/10.3389/fphar.2017.00983

Patients in a study of medical cannabis use "reported improvements in clinical state and health-related measures as well as notable decreases in prescription medication use, particularly opioids and benzodiazepines after 3 months of treatment."

Conclusion
To our knowledge, this study represents the first neuroimaging investigation of patients using marijuana for medical purposes. Following 3 months of MMJ treatment, brain activation patterns appear more similar to those exhibited by healthy controls from previous studies than at pre-treatment. This finding provides strong evidence that MMJ treatment may normalize brain activity. Importantly, these changes were accompanied by improved task performance as well as positive changes in ratings of clinical state, impulsivity, sleep, and quality of life. Further, patients reported notable decreases in their use of conventional medications, including opioids. In light of the national opioid epidemic, these data clearly underscore the need to expand and extend this study to determine if a reduction in opioid use persists with continued MMJ treatment. Results from the current study raise the possibility that the observed improvements in cognition and related changes in functional activation patterns may be related to direct and/or indirect effects of cannabinoids, specifically within an adult population beyond the stages of critical neuromaturation. Patients utilizing MMJ appear to use products with different cannabinoid profiles (i.e., high CBD) relative to recreational users, which is

also likely to impact cognitive function. Observed changes may also be related to secondary or more indirect effects, including the reduction of clinical symptoms, improved sleep, and decreased use of conventional medications. Additional studies using both observational and clinical trial models to examine the impact of actual MMJ products used by patients are needed to clarify the underlying neural mechanisms associated with clinical and behavioral changes that accompany MMJ treatment.

Link: https://www.frontiersin.org/articles/10.3389/fphar.2017.00983/full

9. 'Association Between US State Medical Cannabis Laws and Opioid Prescribing in the Medicare Part D Population' | May 2018 | JAMA Intern Med. 2018;178(5):667-672. doi:10.1001/jamainternmed.2018.0266

Key Points
Question: What is the association between US state implementation of medical cannabis laws and opioid prescribing under Medicare Part D?

Findings: This longitudinal analysis of Medicare Part D found that prescriptions filled for all opioids decreased by 2.11 million daily doses per year from an average of 23.08 million daily doses per year when a state instituted any medical cannabis law. Prescriptions for all opioids decreased by 3.742 million daily doses per year when medical cannabis dispensaries opened.

Meaning: Medical cannabis policies may be one mechanism that can encourage lower prescription opioid use and serve as a harm abatement tool in the opioid crisis.

Abstract
Importance: Opioid-related mortality increased by 15.6% from 2014 to 2015 and increased almost 320% between 2000 and 2015. Recent research finds that the use of all pain medications (opioid and nonopioid collectively) decreases in Medicare Part D and Medicaid populations when states approve medical cannabis laws (MCLs). The association between MCLs and opioid prescriptions is not well understood.

Objective: To examine the association between prescribing patterns for opioids in Medicare Part D and the implementation of state MCLs.

Design, Setting, and Participants: Longitudinal analysis of the daily doses of opioids filled in Medicare Part D for all opioids as a group and for categories of opioids by state and state-level MCLs from 2010 through 2015. Separate models were estimated first for whether the state had implemented any MCL and second for whether a state had implemented either a dispensary-based or a home cultivation only–based MCL.

Main Outcomes and Measures: The primary outcome measure was the total number of daily opioid doses prescribed (in millions) in each US state for all opioids. The secondary analysis examined the association between MCLs separately by opioid class.

Results: From 2010 to 2015 there were 23.08 million daily doses of any opioid dispensed per year in the average state under Medicare Part D. Multiple regression analysis results found that patients filled fewer daily doses of any opioid in states with an MCL. The associations between MCLs and any opioid prescribing were statistically significant when we took the type of MCL into account: states with active dispensaries saw 3.742 million fewer daily doses filled (95% CI, −6.289 to −1.194); states with home cultivation only MCLs saw 1.792 million fewer filled daily doses (95% CI, −3.532 to −0.052). Results varied by type of opioid, with statistically significant estimated negative associations observed for hydrocodone and morphine. Hydrocodone use decreased by 2.320 million daily doses (or 17.4%) filled with dispensary-based MCLs (95% CI, −3.782 to −0.859; P = .002) and decreased by 1.256 million daily doses (or 9.4%) filled with home-cultivation–only-based MCLs (95% CI, −2.319 to −0.193; P = .02). Morphine use decreased by 0.361 million daily doses (or 20.7%) filled with dispensary-based MCLs (95% CI, −0.718 to −0.005; P = .047).

Conclusions and Relevance: Medical cannabis laws are associated with significant reductions in opioid prescribing in the Medicare Part D population. This finding was particularly strong in states that permit dispensaries, and for reductions in hydrocodone and morphine prescriptions.

Link:
https://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2676999

10. 'Cannabis as a Substitute for Opioid-Based Pain Medication: Patient Self-Report' | By Amanda Reiman,1,* Mark Welty,2 and Perry Solomon 3 | http://highsobriety.com/wp-content/uploads/2017/06/CAN-2017-0012-Reiman_2P.pdf

INTRODUCTION:
Prescription drug overdoses are the leading cause of accidental death in the United States. Alternatives to opioids for the treatment of pain are necessary to address the issue. Cannabis can be an effective treatment of pain, greatly reduces the chance of dependence, and eliminates the risk of fatal overdose compared to opioid-based medications. Medical cannabis patients report that cannabis is just as effective, if not more, than opioid-based medications for pain.
MATERIALS AND METHODS:
The current study examined the use of cannabis as a substitute for opioid-based pain medication by collecting survey data from 2897 medical cannabis patients.
CONCLUSION:
Future research should track clinical outcomes where cannabis is offered as a viable substitute for pain treatment examine the outcomes of using cannabis as a medication assisted treatment for opioid dependence.

Volume 2.1, 2017 DOI: 10.1089/can.2017.0012
Author information : https://www.ncbi.nlm.nih.gov/pubmed/23095052

Research For Cannabinoid Therapies for the Substance Abuse Disorder

1. 'Alcohol Abuse, Dependence, Tolerance, and Withdrawal'

Alcoholism is an addiction one has to the consumption of alcoholic liquor or the mental illness and compulsive behavior resulting from alcohol dependency.

Alcohol dependence (i.e. alcoholism) may result from alcohol abuse (i.e. use of alcohol in a way that negatively impacts one's actions/life), and is characterized by a feeling that one needs to consume alcohol in order to function normally, with a decreased ability to stop drinking even if the desire to do so exists. Those with alcohol dependence develop tolerance to alcohol, meaning that they need to consume more and more over time in order to feel the same effect they experienced the first time they drank. If alcohol

consumption then stops, especially abruptly, individuals with alcohol dependence will experience symptoms of alcohol withdrawal.

Mild alcohol withdrawal is characterized by signs and symptoms including anxiety, development of tremors/shakiness, depression, irritability, fatigue, palpitations, etc., while severe alcohol withdrawal is characterized by more serious events, such as the onset of seizures and delirium tremens (with symptoms including a confused state, fever, tremors/shakiness, seizures, changes in mental functioning, irritability, hallucinations), which can lead to death in 1-5% of cases.

Even if a person who is alcohol-dependent wants to stop drinking, the negative impact of withdrawal will often prevent them from doing so (i.e. they may continue to drink to avoid the associated undesirable feelings).

Of the 38 million adults in the United states who drink too much, approximately 17 million of them have alcohol abuse disorders. Alcohol abuse is the 3rd leading cause of preventable death and results in costs totaling over $200 billion each year. Due to the huge impact alcohol abuse has on people, their families, and society, and to the fact that alcohol withdrawal is a major impediment to stopping alcohol abuse/overuse, its management is paramount to helping people overcome alcohol dependence.

Study Results

Using PET scans (which help us to visualize the functioning of organs and tissues) to measure activity/availability of CB1 receptors (a cannabinoid receptor found most commonly in the brain and spinal cord), authors of a study published in *The Journal of Neuroscience* in February 2014 found that cannabinoid signaling varies in the brains of alcohol non-users, non-dependent alcohol users, and dependent alcohol users.

Researchers found that in the brains of social, non-dependent drinkers (i.e. "non-alcoholic" drinkers, n=20), activity/availability of CB1 receptors was significantly increased after administration of ethanol (i.e. alcohol) into the bloodstream.

On the other hand, activity/availability of CB1 receptors was significantly decreased in dependent users (i.e. "alcoholics", n=26) after long-term, heavy use of alcohol, even after 1 month of abstinence (no alcohol use). After long-term, heavy use, activity/availability was especially decreased in the areas of the cerebellum (part of the

brain involved in coordinating movements, producing fine movements, maintaining posture and balance, etc.) and the parieto-occipital cortex (area of the brain which may be involved in planning processes). After abstinence, additional areas of decreased activity/availability of CB1 receptors were the ventral striatum (a part of the brain activated when a reward/pleasurable feeling is perceived) and the mesial temporal lobe (an area whose damage is sometimes associated with epileptic seizures).

Conclusion

CB1 receptor stimulation is involved with subjectively feeling reward/pleasure. However, if the receptors are overstimulated, as by long-term, heavy use of alcohol, their activity/availability will decrease. During a period of abstinence from alcohol, this decreased stimulation may lead to an increased craving for alcohol, in order to re-establish the positive feelings associated with its use. Additionally, during the early phases of abstinence, neurons become hyperexcitable (i.e. overactivated), which can lead to their damage and death.

Therefore, for alcohol-dependent individuals attempting to reduce or eliminate their alcohol use, treatments aimed at increasing signaling of cannabinoid receptors in the brain [e.g. (1) cannabinoid therapies (such as targeted, isolated/synthetic CB1 receptor "stimulators", or potentially whole-plant use if deemed appropriate by and closely monitored by a healthcare provider) or (2) therapies that upregulate CB1 receptors], may be useful for the following reasons:

- Since cannabinoids may act as neuroprotective agents (with the potential to reduce hyperexcitability and prevent brain cell damage), cannabinoid therapies may directly prevent harm to the brain caused by withdrawal.
- Cannabinoid therapy use, in combination with alcohol abstinence, may be helpful in the treatment of alcohol dependence and withdrawal by assisting in the prevention of alcohol cravings.

Link: http://www.jneurosci.org/content/34/8/2822.long

2. 'Cannabis as a Substitute for Alcohol: A Harm-Reduction Approach' by Tod H. Mikuriya

ABSTRACT. Ninety-two Northern Californians who use cannabis as an alternative to alcohol obtained letters of approval from the author. Their records were reviewed to determine characteristics of the cohort and efficacy of the treatment, which was defined

as reduced harm to the patient. All patients reported benefit, indicating that for at least a subset of alcoholics, cannabis use is associated with reduced drinking. The cost of alcoholism to individual patients and society at large warrants testing of the cannabis-substitution approach and study of the drug-of-choice phenomenon.
Link:
http://www.cannabiscure.info/wp-content/uploads/2016/07/marijuana-and-alcohol.pdf

3. 'Study: Cannabidiol (CBD) Helps Prevent Alcohol-Induced Liver Damage'

It is no secret that alcohol consumption can negatively affect one's liver. This is because it can cause an excess of fats and lipids and additional oxidative stress (i.e. damage caused by free radicals).

With that said, a recent study published in Free Radical Biology and Medicine offers an interesting preventive measure. Funded by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Institutes of Health (NIH), it suggests that cannabidiol (CBD) could help protect the liver from alcohol-induced damage.

Researchers Prevent Alcohol-Induced Liver Damage With CBD.
As we know, cannabidiol (CBD) may have antioxidant effects. Couple that with the constituent's lack of psychoactivity, and it makes sense why the team of researchers from China and Mount Sinai School of Medicine in New York chose to investigate its ability to counter alcohol-induced oxidative stress in the liver.

In doing so, they injected mice with ethanol twice a day for five days. This was intended to model the impact of binge drinking on one's liver. Prior to this, a group of the mice were administered cannabidiol (CBD) as a preventive measure.

> "The study's results seem to confirm that cannabidiol (CBD) protects the liver from steatosis – the accumulation of fats and lipids."

Sure enough, the study's results showed that cannabidiol (CBD) may protect the liver from steatosis – the accumulation of fats and lipids. The researchers suggested that this was potentially the result of cannabidiol inhibition of oxidative stress and activation of pathways associated with fat accumulation.

The accumulation of fat in the liver can lead to much more serious problems like cirrhosis of the liver (i.e. scarring of the liver that may lead to liver failure) if it gets out of hand. With that said, there is no easy way to go about "curing" the disease once it occurs, so taking a preventive approach is best. Although increased research may strengthen the theory that cannabidiol (CBD) administration helps to prevent alcohol-induced liver damage, cannabidiol is not an approved or definitively effective preventive treatment at the present time.

Link: https://www.sciencedirect.com/science/article/pii/S0891584913015670

4. 'Study: CBD-Based Topicals May Aid In Alcoholism Treatment
What Is CBD's Effect On Brain Degradation?'

According to the National Institute of Alcohol Abuse and Alcoholism (NIAAA), alcohol can be linked to neurodegradation (i.e. breakdown of neurons, which are brain cells that communicate with each other to transmit signals) among other effects. Due to the fact that cannabidiol (CBD) has been found to potentially have neuroprotectiveeffects, a study published last week in *Pharmocology Biochemisty & Behavior* aimed to explore the effect of cannabidiol topicals on alcohol-induced brain degradation.

It is important to understand the causes of, and ways to prevent, degradation associated with excessive alcohol use, because some believe that the behavioral and cognitive deficits it causes may be linked to alcoholisms high relapse rate (i.e. many people with alcohol dependence who stop drinking eventually start drinking again). The researchers, who were from the University of Kentucky, AllTranz Inc., and the University of Maryland, hoped to compare cannabidiol topicals with a direct injection of CBD.

5. 'Medical Cannabis as a Recovery Treatment'

Since cannabis has earned an undeserved negative reputation in many quarters, it is often difficult to determine what is fact and what is politics when talking about medical marijuana. However, the following three studies pointed to definite possibilities of using cannabis to overcome dependence on more harmful drugs and alcoholism:

- A 2009 study performed by the Laboratory for Physiopathology of Diseases of the Central Nervous System found that injections of THC, the primary active chemical in cannabis, helped eliminate dependence on opiates such as morphine and heroin in test animals.
- A survey compiling self-reported addiction treatment and relapse rates among substance users, "Cannabis as a Substitute for Alcohol and Other Drugs" that was published in the *Harm Reduction Journal*, found that respondents used cannabis to curb their alcohol cravings, as an alternative to previous use of prescription drugs, and even as a substitute for more potent drugs such as cocaine. Tellingly, 57.4% of respondents chose to use cannabis because it provided better symptom management as well.
- Another study published in the *Harm Reduction Journal*, "Long term cannabis users seeking medical cannabis in California," found that medical cannabis users were much less likely to use more potent drugs, and even reported less tobacco use than non-cannabis users.

Why Use Cannabis as a Recovery Treatment?

It's clear that more effective addiction recovery treatment is needed in our country. According to the National Institute on Drug Abuse, depending on the addiction, up to half of individuals who begin an addiction treatment program relapse within six months. As more states move to legalize medical marijuana, it is becoming easier for scientists, doctors, and researchers to point to the benefits of cannabis as a treatment for pain relief and symptom management for many diseases. Benefits now known to the scientific community include:

- Medical cannabis patients are able to function more fully in daily activities and work, unlike with many prescription opiates for symptom relief.
- Medical cannabis patients report fewer unpleasant side effects with marijuana than with many traditional and stronger drug treatments.
- Medical cannabis patients achieve more effective symptom relief using marijuana than with other alternatives.

Since withdrawal from alcohol and serious drug use often prompts the same symptoms as other medical conditions that cannabis is used to treat (anxiety, depression, pain, nausea, and sleeplessness,) it is logical that responsible use of marijuana could also help with addiction recovery.

Link:
http://unitedpatientsgroup.com/resources/marijuana-pain-relief-and-management

6. 'Cannabis Shown To Ease Symptoms During Opiate Withdrawal'

According to a recent study, cannabis use may help relieve withdrawal symptoms during Methadone treatment. The study that was performed at Thomas Jefferson University and recently published online shows the cannabinoid system may have a place in future substance abuse treatment. This Pennsylvania-based university was the home for observing 91 patients undergoing Methadone treatment.

> Methadone is common form of treatment for opiate dependence. It can be effective, but it has a number of negative side effects.

There are quite a few reported side effects of Methadone treatment, such as: anxiety, insomnia, nausea, loss of appetite, and even psychological dependence.

These are only a few of the reported side effects and there are likely more that go unreported. Perhaps the scariest side effect is the psychological dependence. An opiate-dependent patient is putting their trust into a treat to break their vicious dependence. Sadly, instead of curing the patient of their dependence they start to need the treatment as much as they did the original opiates.

Cannabis Use Reduced Opiate Withdrawal Symptoms

According to the Thomas Jefferson University study, cannabis use before and during treatment decreased the patients score on the Clinical Opiate Withdrawal Scale (COWS). This is a scale used to objectively determine withdrawal symptoms in opiate-dependent patients. The lower scores indicate that cannabis plays a role in reducing the symptoms of opiate withdrawal.

> "The present findings may point to novel interventions to be employed during treatment for opiate dependence that specifically target cannabinoid-opioid system interactions" – Thomas Jefferson University, Philadelphia.

This study suggests that cannabis may play a role in increasing the success of Methadone treatment. The reason for this is that is lowers the amount of withdrawal symptoms patients experience.

As discussed earlier, common symptoms of opiate withdrawal include anxiety, muscle aches, insomnia, abdominal cramps, and nausea. Medical cannabis is already being used to successfully treat each of these symptoms with little to no known side effects. "Cannabis does not have the physical addictive components that opiates do," says Shelley Stormo, a clinical psychologist at Gosnold. "It does not have the propensity, as opiates do, for overdoses. There's no documented death by overdose of cannabis." Link: https://www.ncbi.nlm.nih.gov/pubmed/23795873

7. 'Cannabis and Opioids'
We are in the throes of an opioid abuse crisis and are desperately searching for an answer. It's time we acknowledge the solution that's right in front of us and make this life-saving treatment available for those dependent on opioids. Cannabis has been proven to relieve chronic pain while reducing and replacing the use of opioids. It also relieves the symptoms of opioid withdrawal and decreases opioid craving. There is no toxic or lethal overdose of cannabis, and thousands of patients are already effectively using cannabis to replace opioids and other addictive substances.

Source/Link: http://healer.com/category/cannabis-and-opioids/

8. 'Medical Cannabis As An Exit Drug for Addiction'
"Research suggests that people are using cannabis as an exit drug to reduce the use of substances that are potentially more harmful, such as opioid pain medication." Says a lead investigator on addiction, Zach Walsh, a professor of psychology at University of British Columbia.
Medical cannabis is legal in 28 states and the District of Columbia. Still, the DEA classifies cannabis as a Schedule I controlled substance, the same category as heroin. US Patent No. 6630507, is held by the United States Department of Health and Human Services. The Patent covers the use of cannabinoids for treating a wide range of diseases. Yet under U.S. federal law, cannabis is defined as having no medical use. So it might come as a surprise to hear that the government owns a patent on cannabis as a medicine. The patent (US6630507) is titled "Cannabinoids as antioxidants and

neuroprotectants". It was awarded to the Department of Health and Human Services (HHS) in October 2003. It was filed in 1999, by a group of scientists from the National Institute of Mental Health (NIMH), also part of the National Institutes of Health.
Link:
https://www.news-medical.net/news/20161116/Medical-cannabis-may-help-treat-mental-health-problems-and-opioid-addiction.aspx

9. 'Cannabidiol inhibits the reward-facilitating effect of morphine: involvement of 5-HT1A receptors in the dorsal raphe nucleus'
Unlike hospice, long-term drug safety is an important issue in palliative medicine. Opioids may produce significant morbidity. Cannabis is a safer alternative with broad applicability for palliative care. Yet the Drug Enforcement Agency (DEA) classifies cannabis as Schedule I (dangerous, without medical uses). Dronabinol, a Schedule III prescription drug, is 100% tetrahydrocannabinol (THC), the most psychoactive ingredient in cannabis. Cannabis contains 20% THC or less but has other therapeutic cannabinoids, all working together to produce therapeutic effects. As palliative medicine grows, so does the need to reclassify cannabis. This article provides an evidence-based overview and comparison of cannabis and opioids. Using this foundation, an argument is made for reclassifying cannabis in the context of improving palliative care and reducing opioid-related morbidity.
Am J Hosp Palliat Care. 2011 Aug;28(5):297-303. doi: 10.1177/1049909111402318. Epub 2011 Mar 28.
Link: https://www.ncbi.nlm.nih.gov/pubmed/21444324

10. 'Cannabidiol as an Intervention for Addictive Behaviors: A Systematic Review of the Evidence' | Prud'homme et al. Cannabidiol as an Intervention for Addictive Behaviors: A Systematic Review of the Evidence. Substance Abuse: Research and Treatment 2015:9 33–38 doi: 10.4137/SART.S25081. |
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4444130/pdf/sart-9-2015-033.pdf

Abstract: Drug addiction is a chronically relapsing disorder characterized by the compulsive desire to use drugs and a loss of control over consumption. Cannabidiol (CBD), the second most abundant component of cannabis, is thought to modulate various neuronal circuits involved in drug addiction. The goal of this systematic review is to summarize the available preclinical and clinical data on the impact of CBD on addictive behaviors. MEDLINE and PubMed were searched for

English and French language articles published before 2015. In all, 14 studies were found, 9 of which were conducted on animals and the remaining 5 on humans. A limited number of preclinical studies suggest that CBD may have therapeutic properties on opioid, cocaine, and psychostimulant addiction, and some preliminary data suggest that it may be beneficial in cannabis and tobacco addiction in humans. Further studies are clearly necessary to fully evaluate the potential of CBD as an intervention for addictive disorders.

Link:
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4444130/pdf/sart-9-2015-033.pdf

11. 'Cannabidiol reduces cigarette consumption in tobacco smokers: preliminary findings.' | Addict Behav. 2013 Sep;38(9):2433-6. doi: 10.1016/j.addbeh.2013.03.011. Epub 2013 Apr 1.

Abstract
The role of the endocannabinoid system in nicotine addiction is being increasingly acknowledged. We conducted a pilot, randomised double blind placebo controlled study set out to assess the impact of the ad-hoc use of cannabidiol (CBD) in smokers who wished to stop smoking. 24 smokers were randomised to receive an inhaler of CBD (n=12) or placebo (n=12) for one week, they were instructed to use the inhaler when they felt the urge to smoke. Over the treatment week, placebo treated smokers showed no differences in number of cigarettes smoked. In contrast, those treated with CBD significantly reduced the number of cigarettes smoked by ~40% during treatment. Results also indicated some maintenance of this effect at follow-up. These preliminary data, combined with the strong preclinical rationale for use of this compound, suggest CBD to be a potential treatment for nicotine addiction that warrants further exploration.

Link: https://www.ncbi.nlm.nih.gov/pubmed/23685330

12. 'Inhibition of monoacylglycerol lipase reduces nicotine withdrawal.' | Br J Pharmacol. 2015 Feb;172(3):869-82. doi: 10.1111/bph.12948.

Abstract
BACKGROUND AND PURPOSE:
Abrupt discontinuation of nicotine, the main psychoactive component in tobacco,

induces a withdrawal syndrome in nicotine-dependent animals, consisting of somatic and affective signs, avoidance of which contributes to drug maintenance. While blockade of fatty acid amide hydrolase, the primary catabolic enzyme of the endocannabinoid arachidonoylethanolamine (anandamide), exacerbates withdrawal responses in nicotine-dependent mice, the role of monoacylglycerol lipase (MAGL), the main hydrolytic enzyme of a second endocannabinoid 2-arachidonylglycerol (2-AG), in nicotine withdrawal remains unexplored.
EXPERIMENTAL APPROACH:
To evaluate the role of MAGL enzyme inhibition in nicotine withdrawal, we initially performed a genetic correlation approach using the BXD recombinant inbred mouse panel. We then assessed nicotine withdrawal intensity in the mouse after treatment with the selective MAGL inhibitor, JZL184, and after genetic deletion of the enzyme. Lastly, we assessed the association between genotypes and smoking withdrawal phenotypes in two human data sets.
KEY RESULTS:
BXD mice displayed significant positive correlations between basal MAGL mRNA expression and nicotine withdrawal responses, consistent with the idea that increased 2-AG brain levels may attenuate withdrawal responses. Strikingly, the MAGL inhibitor, JZL184, dose-dependently reduced somatic and aversive withdrawal signs, which was blocked by rimonabant, indicating a CB1 receptor-dependent mechanism.
MAGL-knockout mice also showed attenuated nicotine withdrawal. Lastly, genetic analyses in humans revealed associations of the MAGL gene with smoking withdrawal in humans.
CONCLUSIONS AND IMPLICATIONS:
Overall, our findings suggest that MAGL inhibition maybe a promising target for treatment of nicotine dependence.

Link: https://www.ncbi.nlm.nih.gov/pubmed/25258021

Conclusion: Cannabis Is A Exit Drug For Substance Abuse

Cannabis therapy has been used in addiction recovery for more than 100 years.

From "Marijuana in Medicine" by Tod H. Mikuriya M.D. (1969):

"Because cannabis did not lead to physical dependence, it was found to be superior to the opiates for a number of therapeutic purposes. Birch, in 1889, reported success in

treating opiate and chloral addiction with cannabis, and Mattison in 1891 recommended its use to the young physician, comparing it favorably with the opiates."

Mikuriya found Cannabis to be ***non habit forming*** *as well...*

*"... **there is positively no evidence to indicate the abuse of cannabis as a medicinal agent or to show that its medicinal use is leading to the development of cannabis addiction**. Cannabis at the present time is slightly used for medicinal purposes, but it would seem worthwhile to maintain its status as a medicinal agent for such purposes as it now has. There is a possibility that a re-study of the drug by modern means may show other advantages to be derived from its medicinal use."(Source: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1503422/pdf/califmed00019-0036.pdf)*

From TIME magazine – 1931:

"...in spite of the legends, no case of physical, mental or moral degeneration has ever been traced exclusively to marijuana... Because of its ***non-habit-forming*** *character, doctors have recently been experimenting with the drug as an aid in curing opium addiction."*
(Link:http://content.time.com/time/magazine/article/0,9171,777874-2,00.html)

Go to any responsible detox facility for alcohol and you will immediately be put on highly addictive benzodiazepines. Go to detox for heroin or oxycontin and your opiate of choice will be replaced by an opioid like suboxone. Most of our treatment involves putting people on different drugs but we just call them medications instead to soften the idea. Using marijuana to treat addiction may be the first step in shifting the treatment landscape towards the use of natural plant medicines to promote recovery.

Yes, using plant medicines within an integrated treatment model is using a substance to treat substance use. But, that's what we already do, and right now we do it with drugs that are far more damaging and addictive. The risk of addiction to plant medicines is minimal. Yet, the go-to drugs in alcohol detox (benzodiazepines) and opioid replacement therapy (methadone, suboxone) are powerfully addictive and withdrawal from them can be highly uncomfortable or even fatal in the case of benzodiazepines.

Using ibogaine or psilocybin to interrupt addiction and cannabis as a bridge to a new lifestyle may sound like the ravings of madmen now, but it may just be the norm in 50 years.

While we would like to imagine that everyone who's addicted to any substance could successfully get off substances all together, we recognize that that's not practical. Abstinence just doesn't work for everyone. So instead of focusing on abstinence, we take a safer substance and use it to replace a more harmful substance. This is the practice of harm reduction.

Rules, Regulations, & Policy Solution for this Petition: Requesting The Inclusion Of A New Medical Condition: Substance Abuse Disorder; To Include: Alcohol Use Disorder (AUD), Tobacco Use Disorder, Stimulant Use Disorder, Hallucinogen Use Disorder, and Opioid Use Disorder

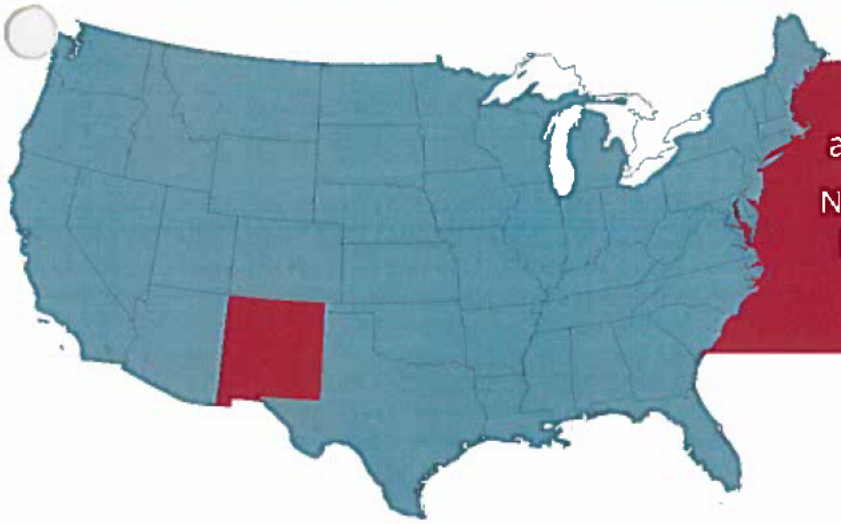
Approval of this Petition will Save Many Lives in New Mexico...

The approval of this Petition: Requesting The Inclusion Of A New Medical Condition: Substance Abuse Disorder; To Include: Alcohol Use Disorder (AUD), Tobacco Use Disorder, Stimulant Use Disorder, Hallucinogen Use Disorder, and Opioid Use Disorder- that is being provided to the state Department of Health Medical Cannabis Program so the advisory board can review and recommend to the department for approval additional debilitating medical conditions that would benefit from the medical use of cannabis with the Lynn and Erin Compassionate Use Act.

The approval of this petition will fulfill the intent of the law and uphold the integrity and spirit of the Lynn and Erin Compassionate Use Act, 2007.
Fulfilling both;" Section 2. PURPOSE OF ACT.--The purpose of the Lynn and Erin Compassionate Use Act is to allow the beneficial use of medical cannabis in a regulated system for alleviating symptoms caused by debilitating medical conditions and their medical treatments"
And of section 6. ADVISORY BOARD CREATED--DUTIES: The advisory board shall:

A. review and recommend to the department for approval additional debilitating medical conditions that would benefit from the medical use of cannabis." New Mexico's medical cannabis history started in 1978. After public hearings the legislature enacted H.B. 329, the nation's first law recognizing the medical value of cannabis...the first law.

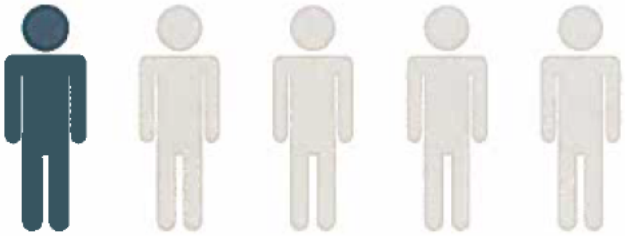
ALCOHOL USE IN NEW MEXICO



New Mexico has the **HIGHEST** alcohol-related death rate **IN THE NATION**

New Mexico's death rate (**66.8** deaths per 100,000 population) in 2017 was **TWICE** the national rate (**32.2** deaths per 100,000) in 2015 (most recent national data).

-NMDOH



1 in 5 deaths among working age adults (20-64) in New Mexico is attributable to alcohol versus 1 in 10 deaths among working age adults in the U.S.

-CDC Alcohol Fact Sheets

In 2017, there were

1,461

deaths due to alcohol in New Mexico.

To put that into context, an average of **FOUR** people **DIED EVERY DAY** of alcohol-related causes.

-NMDOH

EXCESSIVE ALCOHOL IS ASSOCIATED WITH:

- Sleep disturbances & fatigue
- Difficulty maintaining a healthy weight
- Abdominal pain
- Diarrhea & nausea

AND MORE SERIOUS OUTCOMES:

- Domestic violence & crime
- Motor vehicle accidents & other injuries
- **DEATH**

- CDC Alcohol Fact Sheets
NIH - NIAAA Beyond Hangovers, 2010

The most common cause of alcohol related death in New Mexico is **alcohol-related chronic liver disease.**

From 2013-2017 alcohol-related chronic liver disease **increased by 35.3%** in New Mexico.

-NMDOH

Only **1 in 10** excessive drinkers has alcohol dependency disorder

Excessive alcohol use cost NM **$2.2 billion** in 2010.

-CDC Alcohol Fact Sheets

WHAT IS EXCESSIVE DRINKING?

HEAVY DRINKING

WOMEN: Consuming **8** or more drinks per week

MEN: Consuming **15** or more drinks per week

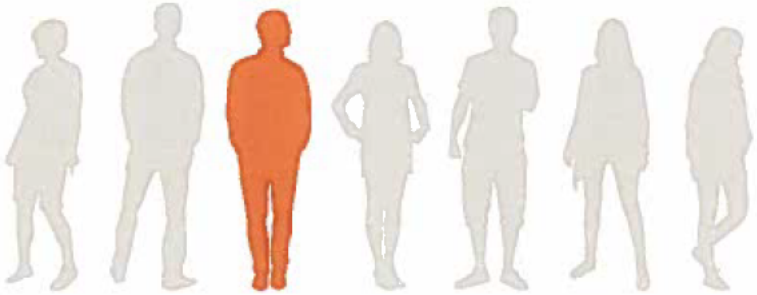
About 6% of NM adults self reported as heavy drinkers in 2017

BINGE DRINKING

WOMEN: Consuming **4** or more drinks on an occasion

MEN: Consuming **5** or more drinks on an occasion

RISK OF INJURY INCREASES WITH MORE DRINKS



In New Mexico, **1** in **7** adults binge drink.

On average, binge drinkers binge **5 times per month.**

- NM 2017 BRFSS

5%

of **pregnant women** reported drinking alcohol **during** 3rd trimester of **pregnancy**

- 2015 NM PRAMS

NO SAFE AMOUNT!

MIDDLE SCHOOL

10% CURRENT of whom **49%** BINGE

HIGH SCHOOL

26% CURRENT of whom **54%** BINGE

In a 2017 survey of New Mexico students, 10% of middle school students were current drinkers, and 26% of high school students were current drinkers. 49% of middle school drinkers are binge drinkers, and 54% of high school drinkers are binge drinkers.

- 2017 NM YRRS

THINGS THAT CAN BE DONE TO DECREASE ALCOHOL-RELATED HARM

Support Dram Shop Liability - Owners and servers can be held liable for any injury caused by customers who were recently drinking alcohol at the establishment.

Regulate Alcohol Outlet Density - Limiting the number of businesses selling and distributing alcohol in neighborhoods is one of the most effective strategies for reducing alcohol-related harm.

Increase Alcohol Screening and Brief Intervention - Screen every adult for excessive drinking using validated questions, have a brief conversation with those that screen positive.

Increase Alcohol Excise Tax - Increasing alcohol excise tax has been shown to decrease drinking (particularly in underage drinkers), and decrease many alcohol-related harms.

Limit the days and hours alcohol sales occur - Maintain or decrease days and hours that alcohol is sold.

For more information please contact Annaliese Mayette at Annaliese.Mayette@state.nm.us
and see The Community Guide at www.thecommunityguide.org/alcohol/index.html

NEW MEXICO DEPARTMENT OF HEALTH

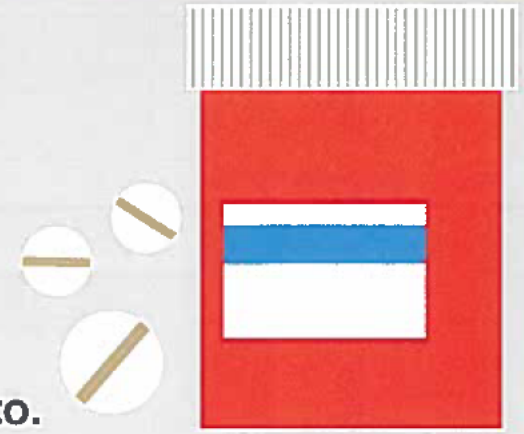
PRESCRIPTION MONITORING PROGRAM

PRESCRIPTION DRUGS were involved in

75%

of **DRUG OVERDOSE DEATHS** in New Mexico.

- Source: NMDOH. Substance Abuse Epi Profile 2010-2014



2 out of 3

providers in New Mexico **DO NOT CHECK** the PMP before prescribing controlled substances.

- Source: NMDOH, PDMP

MANDATING PMP CHECKS

Several states, including New Mexico, have required PMP checks. Below are some results of this action.

75%
NEW YORK

Reduction in the number of individuals seeing multiple providers for the same drugs

90%
KENTUCKY

Increase in prescriptions for opioid dependence treatment medication

36%
TENNESSEE

Reduction in the number of individuals seeing multiple providers for the same drugs

Source: CDC Vital Signs, "Opioid Painkiller Prescribing: Where you live makes a difference," July 2014 www.cdc.gov/vitasigns
Source: PDMP Center for Excellence at Brandeis University, "Mandating PDMP participation by medical providers," February 2014

PRESCRIPTION MONITORING PROGRAM

FREQUENTLY ASKED QUESTIONS

WHAT IS THE PRESCRIPTION DRUG MONITORING PROGRAM (PMP)?

The Prescription Drug Monitoring Program (PMP) is a state-wide electronic database administered by the New Mexico Board of Pharmacy that tracks the dispensing and prescribing of controlled substances.

WHO REPORTS PRESCRIPTION INFORMATION TO THE NEW MEXICO PMP?

Pharmacies who fill prescriptions for controlled substances report to the PMP within 24 hours of filling a prescription.

WHO CAN ACCESS DATA ENTERED INTO THE NEW MEXICO PMP?

All licensed New Mexico providers who prescribe and/or dispense controlled substances have access to information about their patients in the PMP. Health care providers can also arrange for delegates to have access so that the delegate can check a patient's record in busy health care settings. Health care providers and their delegates have access 24 hours a day, seven days a week.

All data entered in the PMP is subject to the Health Insurance Portability and Accountability Act (HIPAA) which protects patients' medical records and personal health information.

WHAT IS A CONTROLLED SUBSTANCE?

A controlled substance is any drug or chemical that is regulated by the government. Most controlled substances have useful and legitimate medical purposes, such as treating pain. However, they can also have dangerous side effects, such as a high risk of misuse and abuse.

Prescription opioids such as OxyContin, Percocet, and Vicodin are examples of controlled substances.

ADDITIONAL RESOURCES AND INFORMATION ABOUT PMPs

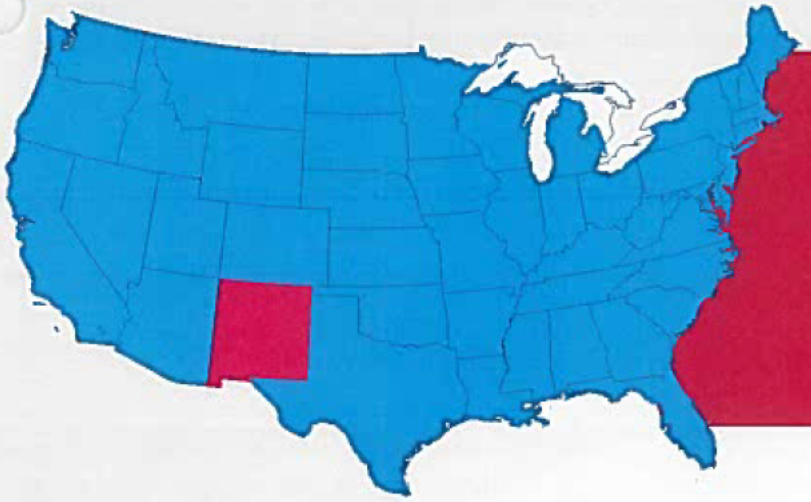
The Centers for Disease Control and Prevention: Prescription Drug Monitoring Programs (PDMPs)
www.cdc.gov/drugoverdose/pdmp/

Drug Enforcement Agency: State Prescription Drug Monitoring Programs Questions and Answers
www.deadiversion.usdoj.gov/faq/rx_monitor.htm

New Mexico Prescription Drug Monitoring Program
www.nmpmp.org

NEW MEXICO DEPARTMENT OF HEALTH
March 2016

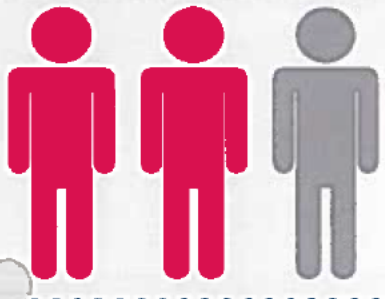
DRUG OVERDOSE IN NEW MEXICO



New Mexico had the
17th HIGHEST DRUG OVERDOSE DEATH RATE IN THE US in 2017.

New Mexico's drug overdose death rate (24.6 deaths per 100,000 population) in 2017 was about **13% HIGHER THAN THE US RATE** (21.7 deaths per 100,000) in 2017.

-NMDOH



2 of 3

Drug overdose deaths in NM in 2017 involved **an opioid** (prescription opioids, heroin, or fentanyl).

- NMDOH

The methamphetamine death rate in NM **MORE THAN DOUBLED** from 2013-2017.

- NMDOH

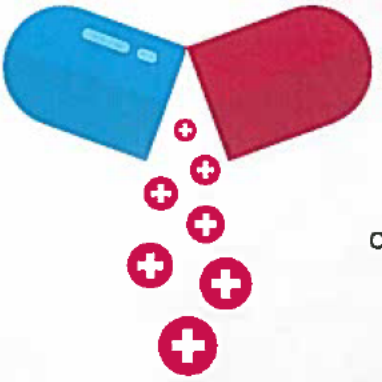
In 2017, there were

491

deaths due to drug overdose in New Mexico.

To put that in context,
ONE NEW MEXICAN DIED from drug overdose about **EVERY 18 HOURS.**

-NMDOH



In 2017 in NM, about

90%

of drug overdose deaths that involved benzodiazepines (drugs like valium) also involved opioids.

-NMDOH

The amount of prescription opioids sold in NM **DECREASED** by

36%

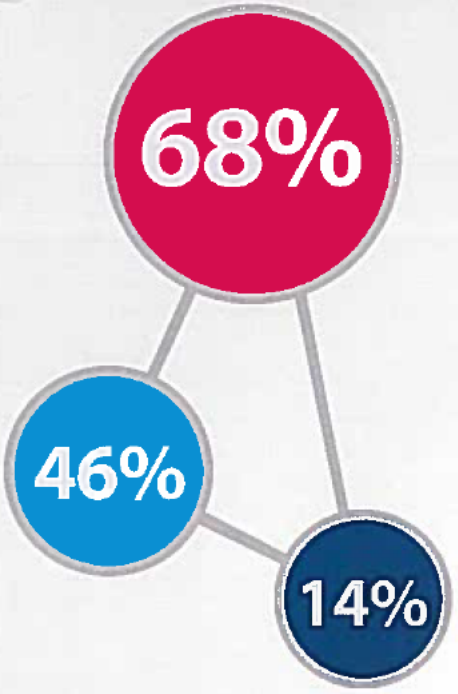
between 2011 and 2017.

- DEA sales data

PEOPLE WITH PRESCRIPTIONS ARE AT RISK OF OVERDOSE, NOT JUST NONMEDICAL USERS.

- Kolodny et al., 2015

OF OVERDOSE DEATHS INVOLVING HEROIN OR PRESCRIPTION OPIOIDS IN 2017:



68% involved **prescription opioids**

46% involved **heroin**

14% involved **both** prescription opioids and heroin

MOST NONMEDICAL USERS OF PRESCRIPTION OPIOIDS REPORT OBTAINING DRUGS:

- From a friend or relative for free
- Bought from a friend or relative
- Taken without asking from a friend or relative

TAKEN WITHOUT ASKING IS MORE COMMON AMONG THE YOUNGEST USERS, EMPHASIZING THE NEED FOR APPROPRIATE STORAGE OF THESE DRUGS.

- National Survey on Drug Use and Health

RESPIRATORY DEPRESSION IS ONE EFFECT OF HEROIN OR OPIOIDS

The victim fails to breathe enough to keep the brain and other organs supplied with oxygen

Naloxone reverses the effects of opiates, including respiratory depression and can save lives

PREVENTION STRATEGIES

IMPROVE PRESCRIBING PRACTICES

- Increased use of Prescription Monitoring Programs (PMP) has been shown to reduce some dangerous combinations and prescriptions from multiple prescribers.
- Prescribing guidelines have been shown to reduce excessive prescribing.

INCREASE ACCESS TO NALOXONE

- Naloxone can reverse opioid overdose and prevent deaths if administered in time and followed up appropriately.

INCREASE ACCESS TO TREATMENT FOR DRUG DEPENDENCE AND ABUSE

Medication assisted treatment (MAT), such as methadone or suboxone therapy, has been shown to be effective in treating opioid dependence and abuse.

- Cognitive Behavioral Therapy (CBT) has been successfully used for substance use disorders.

For more information please contact Annaliese Mayette at Annaliese.Mayette@state.nm.us

NEW MEXICO DEPARTMENT OF HEALTH

FEBRUARY 2019

HEALER

Medical Cannabis Opioid Guide

How to Use Cannabis to Reduce and Replace Opioid Medications

By Dr. Dustin Sulak, Co-founder Healer

www.Healer.com

Thousands of people have used cannabis to help them reduce and replace opioid medications, as demonstrated in numerous recent scientific papers[1-4] and strongly supported by animal research.[5] If you or your loved one is considering this, congratulations!

I conducted a survey of my patients in 2016. Of the 542 opioid users who added cannabis, 39% were able to completely stop opioid use, and 39% used cannabis to reduce their opioid dosage. Adding cannabis reduced pain by more than 40% in nearly half the patients and improved function in 80%. In 87% of patients, it improved quality of life!

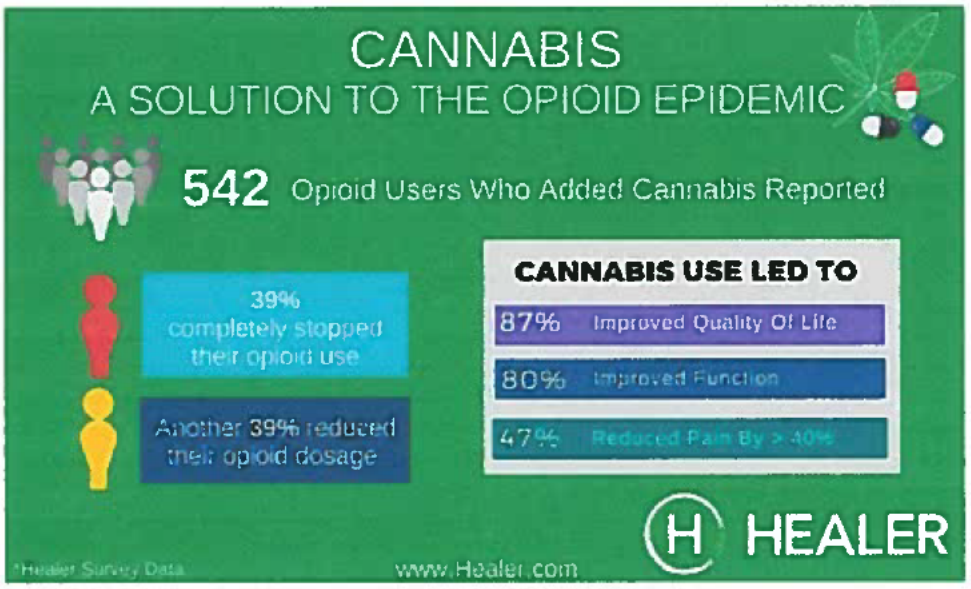


Chart 1: Healer Survey Data 2016

The following guidelines are based on my experience treating chronic pain with cannabis in 8 years of clinical practice, conferring with my colleagues, and closely following the scientific literature. These guidelines apply to patients from any walk of life, including those with chronic pain, PTSD (post-traumatic stress disorder), addiction, non-medical use of opioids, etc.

Advantages of Adding Cannabis

- Cannabis enhances pain relief and other medical effects of opioids.[5]
- Taking cannabis with opioids can make the opioids safer by widening their therapeutic window (the window between the effective dose and the lethal dose). An ineffective dose of an opioid drug can become effective when it's combined with cannabis.[6]
- In addition to reducing pain, cannabis conveys holistic benefits, such as improving sleep,[7] reducing anxiety,[8] relaxing muscles, giving perspective on life's challenges, etc.
- Cannabis relieves the symptoms of opioid withdrawal.[9]
- In dealing with opioid addiction, cannabis can be safer than other harm reduction options like methadone and Suboxone. It does not have the risk of a fatal overdose and has a lower risk of dependence and problematic use than other psychoactive substances.[10] Cannabis can be used in combination with methadone or Suboxone to enhance the benefits and support a taper of these drugs.
- Some studies have shown that cannabis users are more successful adhering to other forms of opioid addiction treatment, such as long-acting naltrexone.[9]

Basic Principles of Use

1. Take a low dose of cannabis with every dose of opioids.
    a. Even at low doses that do not cause impairment or adverse effects, cannabis can enhance the effects of opioid medications.
    b. Always use the lowest effective dose of cannabis to avoid building tolerance. (To find your optimum dose, new and experienced cannabis users can follow the Healer.com dosage programs.)
2. For longer acting effects, oral delivery, such as a tincture or oil absorbed through the blood vessel in the mouth or a capsule swallowed and absorbed in the intestine, is optimal. Both methods allow for a measurable dose in milligrams of THC (tetrahydrocannabinol) and CBD (cannabidiol).
3. Only use inhaled cannabis to reduce cravings and for breakthrough symptoms (severe pain, flashbacks, panic attacks, withdrawal symptoms, etc.).
4. Use cannabis to promote restorative sleep.
5. Use cannabis to enhance the enjoyment and benefits of therapeutic activities (exercise, meditation, prayer, journaling, counseling, etc.). (See Healer.com/Wellness for some simple but powerful wellness practices.)

Specific Dosing Information

- I recommend my patients start with a liquid cannabis preparation (tincture or oil) that's administered under the tongue. This allows for intermediate onset of benefits and easy dosage adjustments. The oral preparation should give a specific milligram (amount of drug) per milliliter (amount of liquid) potency (mg/ml), allowing you to accurately dose using drops or an oral syringe.
- The cannabis tincture should be taken 3 to 4 times daily or with every administration of an opioid drug.
- The content of CBD and THC is important. For most of my patients, a CBD:THC ratio of approximately 1:1 is broadly effective and well tolerated.
    - People who are very sensitive to THC can reduce potential unwanted effects by using a CBD:THC ratio of 4:1 or higher.
    - If you don't have access to cannabis preparations containing CBD, you can still succeed using THC-dominant preparations.

- **Recommended starting dose: CBD 1 mg + THC 1 mg.**
  - This dose is too low to have a noticeable effect in many patients, but some do report benefits.
  - Every day, increase your individual THC dose by 1 to 2 mg (and the appropriate corresponding amount of CBD depending on your selected CBD:THC ratio). If your Day 1 dose is CBD 1 mg + THC 1 mg (with no discernible effect), on Day 2 increase the dose to CBD 2 mg + THC 2 mg.
  - Most patients achieve good results at 2 to 15 mg of THC per dose.

- **How will I know when I reach my optimal dose?**
  - Use Healer's Inner Inventory, located in Healer.com/programs to identify the dose that creates a therapeutic effect (reduced pain, reduced anxiety, etc.).
  - If you find that cannabis makes the effects of the opioid feel stronger or last longer, or if you are able to take less of the opioid drugs, you've reached an effective dose.
  - You can maintain consistent benefits without building tolerance for years or decades if you stay at your optimal dose of cannabis. If you've developed tolerance by regularly exceeding your optimal dose, complete Healer's Sensitization Protocol as soon as possible to recover the full benefits of cannabis.
  - You've likely exceeded your optimal dose if you experience:
    - A reduction in the effects (it was working, but now it's not)
    - An increase in unwanted side effects (such as confusion, lightheadedness, fatigue).
  - Many patients find that they are able to decrease their opioid dosage by 50% to 80% in the first 2 weeks after adding cannabis at the optimal dose, and then they continue to reduce opioids more slowly thereafter. I encourage you to take advantage of this 2-week window of opportunity. Other people do not experience this rapid reduction at first but find they are able to taper their opioid medications slowly and consistently.

- **When using inhaled cannabis for cravings and breakthrough symptoms:**
  - Use a vaporizer or pipe with cannabis flowers, if possible.
  - Take 1 inhalation, wait 5 to 10 minutes, then repeat if necessary.
  - Avoid concentrates (hash, dabs, shatter, etc.) and high potency vape pens unless 3 to 5 inhalations of herbal cannabis are ineffective. Concentrates are more likely to cause you to build tolerance to cannabis, and most vape pens fail to convey the full range of compounds that produce the desired medical benefits.
  - Select cannabis strains that correlate with your specific goals. For example, one strain for sleep, one for pain, one for cravings, etc. See Healer's Cannabis Shopping Guide for more guidance about strains and their associated benefits.

For Patients New to Cannabis or Not Currently Using Cannabis:

- Refer to Healer's Introduction to Cannabis program for more specific step-by-step dosing guidance.

Introduction to Cannabis 4 Day Program

https://healer.com/programs/introduction-to-cannabis/

For Experienced Cannabis Users:

- Before starting to taper opioids, it's essential that you reverse any tolerance to cannabis to ensure you get best results. I strongly suggest beginning with Healer's 6-day Sensitization Protocol.
- If you are not experienced with oral dosing of cannabis liquid medicines or capsules, familiarize yourself with this delivery method and find your optimal dosage before starting to taper your opioid drugs. See Healer's Switching from Inhalation to Tincture program for more details.

Sensitization Protocol 6 Day Program

https://healer.com/programs/sensitization-protocol/

Switching From Inhalation to Tincture

https://healer.com/programs/switching-from-inhalatio to-tincture/

If Low-Dose Cannabis Is Ineffective:

- For a small percentage of my patients, low-to-moderate-dose cannabis (≤60mg of THC daily) is not sufficient to help them reduce opioid medications. If you see no response (improved symptoms and ability to decrease opioids) after using cannabis for 30 days at low doses, then it may be time to switch to a high-dose protocol that typically uses cannabis concentrate taken by mouth or high potency edibles.
- Gradually work up to very high doses. For example, start at 20 mg of THC three times daily and gradually, over 1 to 4 weeks, work up to 100 to 500 mg of THC per dose. Gradual titration is important to prevent the unpleasant side effects of cannabis overdose.

CAUTIONS

1. Discuss your intention to use cannabis for this purpose with your health care provider and collaborate to achieve your goals. Do not adjust the dosage of prescribed opioid medications without discussing it with your provider. If your health care provider is uncomfortable with a THC-positive urine drug screen, please note that the Centers for Disease Control and Prevention (CDC) recommends against urine testing for THC in patients prescribed opioids for chronic pain.[11]
2. Work with an experienced cannabis clinician who can monitor and provide feedback on your use of cannabis.
3. Inhaled THC-dominant cannabis has rewarding effects that trigger the pleasure centers in the brain. While this can be useful in combating cravings for more dangerous drugs, it can also trigger a desire for more strongly rewarding substance and behaviors. Please limit your use of inhaled cannabis to cravings and breakthrough symptoms, as described above.

Those who are most successful in using cannabis to replace opioid drugs always use a combination of pharmacologic and behavioral interventions. No medication is powerful enough to accomplish this goal on its own. By prioritizing and organizing the proper resources for sleep, exercise, counseling, support groups, and social support, you can ensure your success!

I want to learn from your experiences. Please go to http://www.healer.com/programs/feedback

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2019-004

[redacted]

Wednesday, February 27, 2019

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Medical Cannabis Advisory Board Petition
for
People's Manufacturing, LLC

NMMCP Manufacturing for PPL card holders

People's Manufacturing's mission, with this petition, is to be able to work in compliance with the Department of Health, by improving healthful outcomes for patients in the medical cannabis program, through compassionate manufacturing of medical cannabis derivatives for Personal Production Licensees.

In addition, People's Manufacturing intends to provide the patient community: patient consulting services and education, lab testing analysis by a DOH Licensed testing facility, safe storage of cannabis flower or trim grown by cardholder for the manufacturing of medical cannabis derivatives from PPL's harvest for the PPL holder(s).

Currently in the medical cannabis program, the provisions and standards in the rules and regulations are set up for the manufacturer to process medical cannabis into derivatives for the licensed non-profit producers (dispensary). This process then requires the patient to have to go to the dispensary to purchase derivative medicine. For the patient with the PPL that has cultivated their own medicine, he/she is unable to utilize this same service structured in the program. By expanding the regulations to encompass manufacturing for PPL card holders, the NM DOH would be providing the same opportunity to the PPL cardholder. People's Manufacturing has no intent to grow and will not be dispensing medical cannabis. All medical cannabis plant material handled and processed would be that of the patient's PPL medical cannabis plant harvest.

Amending the rules and regulations for the Manufacturing provisions and standards to allow for People's Manufacturing and patients in the program to be able have this same and equal service option stands to benefit the program as a whole; when approved. For the patients and the medical cannabis program, especially patients in rural and remote areas under this Petition would like to include, for consideration, a DOH approved PILOT program for "mobile" extraction services which would allow for safe access to medical cannabis derivatives and increased availability and affordability of medicine cultivated by the patient specifically for their medical condition, as their medicine.

In addition to easing the demand at dispensaries and shortages for medical cannabis derivatives; by giving the PPL holder a safe place to get their medical cannabis manufactured into various forms of medicine, thus benefiting the patient without a PPL because more medicine would be available at the dispensaries for non-PPL patients.

For the medical cannabis patients, it is very empowering to have a PPL and be able to cultivate one's own medicine in addition to what's provided by the LNPP's. Unfortunately, due to the nature of the debilitating health conditions many patients face in the medical cannabis program, they are unable to home manufacture for themselves. Approving People's Manufacturing allows for patients and patients with PPL's to benefit from the consulting and customization of the medicine for their specific health condition, improves level of precision in dosing to reach the coveted optimum balance between symptom relief and psycho-activity, and that in turn translates into improved quality of life. For the patient without a PPL, it would provide them an incentive to get a PPL to utilize the service from People's Manufacturing and provide the same safe manufacturing practices and product standards under the DOH MCP.

People's Manufacturing has identified a need for the patients and PPL's to be able to safely utilize their self- produced medical cannabis. Currently, there are several business services, not affiliated with the LNPP's, in the state that are: offering growing consulting, growing classes, cooking classes, and concentrate extraction classes. Being that these business services are not directly affiliated with the program, they are also not under any regulation as well.

By amending the manufacturing provisions to create the addition to encompass PPL cardholder's harvests that would allow for a manufacturer to operate a facility for the sole purpose of servicing the patient PPL community's needs to manufacture their usable cannabis into derivatives, the New Mexico Department of Health Cannabis Program would be ensuring the following:

Safe access to self-produced cannabis (excess harvest)
Safe storage of excess cannabis
Safe access to customized manufacturing of self-produced cannabis into chosen derivatives
Compliant PPL growers
Custom and affordable medication for MCP PPL card holders

7.34.4.8 PRODUCER LICENSING; GENERAL PROVISIONS:

A. The department may license two classes of producers:

(1) A qualified patient who holds a valid personal production license. A qualified patient who holds a valid personal production license is authorized to possess no more than four mature female plants and a combined total of 12 seedlings and male plants, and may possess no more than an adequate supply of usable cannabis, as specified in department rule. A personal production license holder may additionally obtain usable cannabis, seeds, or plants from licensed non-profit producers. The primary caregiver of a qualified patient who holds a personal production license may assist the qualified patient to produce medical cannabis at the designated licensed location that is identified on the personal production license; the primary caregiver may not independently produce medical cannabis.

(2) A non-profit producer that operates a facility and, at any one time, is limited to a combined total of no greater than 450 mature female plants, seedlings and male plants, and an inventory of usable cannabis and seeds that reflects current patient needs, and that shall sell cannabis with a consistent unit price, without volume discounts or promotional sales based on the quantity purchased. A non-profit producer shall not possess a quantity of either mature female plants or seedlings and male plants that exceeds the quantities authorized by their licensure and associated licensing fee. A licensed non-profit producer may sell and distribute usable cannabis to a person or entity authorized to possess and receive it. A licensed non-profit producer may obtain plants, seeds and usable cannabis from other licensed non-profit producers.

People's Manufacturing, with approval of this petition, would then be able to provide the New Mexico medical cannabis patient with a personal production license, legal and safe access to a DOH APPROVED and Licensed facility or "mobile extraction lab" that can provide the highest quality professional services of: growing assistance from seed to harvest, trimming service, drying & curing, lab testing analysis of the patients PPL harvest, manufacturing and extraction of plant material into butter, concentrates, oils, tinctures, and topicals. This also allow for the safety and compliance standards set forth by the New Mexico Department of Health to be followed.

People's Manufacturing greatly appreciates the time the Medical Cannabis Advisory Board has taken to review this petition for approval. People's Manufacturing looks forward to working in partnership with the Department of Health Medical Cannabis Program to increase these safe access options, empower the medical cannabis patient, and allow for the improved health benefit of the patients wellbeing.
New Mexico's medical cannabis history started in 1978. After public hearings the legislature enacted H.B. 329, the nation's first law recognizing the medical value of cannabis.

APPENDIX A:

TITLE 7 HEALTH
CHAPTER 34 MEDICAL USE OF CANNABIS
PART 4 *LICENSING REQUIREMENTS FOR PRODUCERS, COURIERS, MANUFACTURERS AND LABORATORIES*

7.34.4.7 DEFINITIONS:

M. "Courier" means a person or entity that transports usable cannabis within the state of New Mexico from a licensed non-profit producer to a qualified patient or primary caregiver, to another non-profit producer, to an approved laboratory, or to an approved manufacturer.

R. "Laboratory applicant" means a laboratory that seeks to become an approved laboratory, or that seeks renewal of approval as an approved laboratory, in accordance with this rule.

X. "Manufacture" means to make or otherwise produce cannabis-derived product or concentrate.

Y. "Manufacturer" means a business entity that manufactures cannabis-derived product that has been approved for this purpose by the medical cannabis program.

S. "License" means the document issued by the department granting the legal right to produce medical cannabis for a specified period of time.

T. "Licensed producer" means a person or entity licensed to produce medical cannabis.

U. "Licensure" means the process by which the department grants permission to an applicant to produce cannabis.

7.34.4.8 PRODUCER LICENSING; GENERAL PROVISIONS:

A. The department may license two classes of producers:

(1) A qualified patient who holds a valid personal production license. A qualified patient who holds a valid personal production license is authorized to possess no more than four mature female plants and a combined total of 12 seedlings and male plants, and may possess no more than an adequate supply of usable cannabis, as specified in department rule. A personal production license holder may additionally obtain usable cannabis, seeds, or plants from licensed non-profit producers. The primary caregiver of a qualified patient who holds a personal production license may assist the qualified patient to produce medical cannabis at the designated licensed location that is identified on the personal production license; the primary caregiver may not independently produce medical cannabis.

(2) A non-profit producer that operates a facility and, at any one time, is limited to a combined total of no greater than 450 mature female plants, seedlings and male plants, and an inventory of usable cannabis and seeds that reflects current patient needs, and that shall sell cannabis with

a consistent unit price, without volume discounts or promotional sales based on the quantity purchased. A non-profit producer shall not possess a quantity of either mature female plants or seedlings and male plants that exceeds the quantities authorized by their licensure and associated licensing fee. A licensed non-profit producer may sell and distribute usable cannabis to a person or entity authorized to possess and receive it. A licensed non-profit producer may obtain plants, seeds and usable cannabis from other licensed non-profit producers.

7.34.4.12 DEPARTMENT APPROVAL OF MANUFACTURERS OF CANNABIS DERIVED PRODUCTS; GENERAL PROVISIONS:

A. Submittal of applications: A manufacturer applicant shall submit an authorized application form to the program with each initial application and renewal application, together with a fee of one thousand dollars ($1,000) issued to the medical cannabis program. A manufacturer applicant shall comply with the application requirements of this rule and shall submit such other information as the manufacturer applicant wishes to provide or such information as the department may request for initial approval or periodic evaluation(s) during the approval period.

B. Application requirements: A manufacturer applicant shall submit to the department:

(1) proof that the manufacturer applicant is in good standing with the New Mexico taxation and revenue department;

(2) copies of the manufacturer applicant's articles of incorporation and by-laws, as applicable;

(3) a complete written description of the means that the manufacturer applicant shall employ to safely manufacture cannabis-derived products, including but not limited to hygiene standards consistent with the requirements of this rule;

(4) a list of all persons or business entities having direct or indirect authority over the management or policies of the manufacturer applicant;

(5) a list of all persons or business entities having any ownership interest in any property utilized by the manufacturer applicant, whether direct or indirect, and whether the interest is in land, building(s), or other material, including owners of any business entity that owns all or part of land or building(s) utilized;

(6) a description of the facilities that shall be used in the manufacture of cannabis derived products;

(7) a description of how the manufacturer applicant will obtain cannabis or cannabis concentrates from a licensed non-profit producer, and how the manufacturer applicant will

transport cannabis derived products to a licensed non-profit producer, including but not limited to chain of custody documentation;

(8) testing criteria and procedures, which shall be consistent with the testing requirements of *this rule*;

(9) a general written security policy, to address at a minimum:

(a) safety and security procedures;

(b) personal safety; and

(c) crime prevention techniques.

(10) an attestation that no firearms will be permitted on any premises used for manufacture of cannabis derived products by the manufacturer applicant;

(11) a description of the methods and device or series of devices that shall be used to provide security;

(12) training documentation prepared for each employee of the manufacturer applicant, statements signed by employees indicating the topics discussed (to include names and titles of presenters) and the date, time, and place the employee received said training;

(13) employee policies and procedures to address the following requirements:

(a) job descriptions or employment contracts developed for every employee of the manufacturer applicant that identify duties, authority, responsibilities, qualifications, and supervision; and

(b) training materials concerning adherence to state and federal confidentiality laws. (14) personnel records for each employee of the manufacturer applicant that include an application for employment and a record of any disciplinary action taken;

(15) employee safety and security training materials provided to each employee of the manufacturer applicant at the time of his or her initial appointment, to include:

(a) training in the proper use of security measures and controls that have been adopted; and

(b) specific procedural instructions regarding how to respond to an emergency, including robbery or a violent accident.

(16) such other materials as the department may require.

C. Packaging and labeling: a manufacturer applicant shall submit a description and sample of the opaque, child resistant packaging of the concentrate or cannabis-derived product that the manufacturer shall utilize, including a label that shall contain:

(1) the name of the entity that produced the cannabis and the name of the

manufacturer;

(2) a batch number or code;

(3) a production date or expiration date, including a "use by" or "freeze by" date for products capable of supporting the growth of infectious, toxigenic, or spoilage microorganisms;

(4) a description of the number of units of usable cannabis contained within the product;

(5) instructions for use;

(6) warnings for use;

(7) instructions for appropriate storage;

(8) approved laboratory analysis, including the results of strength and composition within ten percent (10%) of numbers shown on the package;

(9) the name of the strain, product facts, or a nutrition fact panel, and a statement that the product is for medical use by qualified patients, to be kept away from children, and not for resale; and

(10) the name of the department approved testing facility or facilities used for ingredient testing, and the type(s) of testing conducted.

D. Term of approval: Department approval of a manufacturer shall be for a term of one year, and shall expire after that year, or upon closure of the manufacturer. An approved manufacturer shall apply for renewal of approval annually no later than 30 days prior to expiration.

E. Identification cards: Identification cards issued by the department are the property of the department and shall be returned to the department upon termination of the holder's employment with the approved laboratory, suspension, or revocation of approval by the department, or upon demand of the department.

[7.34.4.12 NMAC - N, 2/27/2015]

7.34.4.13 STANDARDS FOR MANUFACTURE OF CANNABIS-DERIVED PRODUCTS: The following are minimum requirements for the manufacture of cannabis-derived products which shall apply to all manufacturers:

A. General requirements: A licensed non-profit producer and a manufacturer shall take reasonable measures and precautions to ensure the following:

(1) that all manufacturing shall be done in premises that are in compliance with local ordinances, including but not limited to zoning, occupancy, licensing, and building codes;

(2) that the manufacturing operation and all equipment, implements, and fixtures shall be used exclusively for the production of cannabis derived products and that food

processing for personal, staff, or the general public shall be prohibited;

(3) that all non-profit producer and manufacturer staff involved in the handling, transportation, manufacture, testing, or packaging of cannabis derived products must complete general food handler safety training, *such as is commonly available online for a nominal fee*;

(4) that any person who, by medical examination or supervisory observation, is shown to have, or appears to have, an illness, open lesion, including a boil, sore, or infected wound, or any other abnormal source of microbial contamination for whom there is a reasonable possibility of contact with preparation surfaces for medical cannabis or cannabis derived products, shall be excluded from any operations which may be anticipated to result in such contamination until the condition is corrected;

(5) that hand-washing facilities are adequate and convenient, and that they are furnished with running water at a suitable temperature; hand-washing facilities shall be located in the facility in medical cannabis derived product preparation areas and where good sanitary practices require employees to wash or sanitize their hands, and provide effective hand-cleaning and sanitizing preparations, and sanitary towel service or suitable drying devices;

(6) that all persons involved in preparing or handling medical cannabis or cannabis derived products at the manufacturing operation conform to hygienic practices while on duty, including:

(a) maintaining adequate personal cleanliness;

(b) washing hands thoroughly in an adequate hand-washing area before starting work, and at any other time when the hands may have become soiled or contaminated;

(c) refraining from preparing or handling medical cannabis or cannabis derived products if the handler has or may have an illness, open lesion, including boils, sores, or infected wounds, or any other abnormal source of microbial contamination, until such condition is corrected;

(d) complying with the other requirements of this section.

(7) that there is sufficient space for placement of equipment and storage of materials as is necessary for the maintenance of sanitary operations for production of medical cannabis derived products;

(8) that litter and waste are properly removed, and the operating systems for waste disposal are maintained in an adequate manner so that they do not constitute a source of contamination in areas where medical cannabis or cannabis derived products are exposed;

(9) that floors, walls, and ceilings are constructed in such a manner that they may be adequately cleaned, kept clean, and kept in good repair;

(10) that there is adequate safety-type lighting in all areas where medical cannabis or cannabis derived products are processed or stored, and where equipment or utensils are cleaned;

(11) that the manufacturer provides adequate screening or other protection against the entry of pests; rubbish shall be disposed of so as to minimize the development of odor, minimize the potential for the waste becoming an attractant and harborage, or breeding place for pests;

(12) that building, fixtures, and other physical facilities where cannabis derived products are manufactured are maintained in a sanitary condition;

(13) that all contact surfaces, including utensils and equipment used for preparation of cannabis derived products are cleaned and sanitized as frequently as necessary to protect against contamination;

(14) that all equipment and utensils used for preparation of cannabis derived products are designed and of such material and workmanship as to be adequately cleanable, and are properly maintained;

(15) that only environmental protection agency (EPA) registered sanitizing agents are used in manufacturing operations and that they are used in accordance with labeled instructions;

(16) that toxic cleaning compounds, sanitizing agents, and pesticide chemicals shall be identified, held, and stored in a manner that protects against contamination of medical cannabis or cannabis derived products;

(17) that the water supply is sufficient for the operations intended and is derived from a source that is a regulated water system; private water supplies shall be from a water source that is capable of providing a safe, potable, and adequate supply of water to meet the manufacturing facility's needs;

(18) that plumbing shall be of adequate size and design, adequately installed, and maintained to carry sufficient quantities of water to required locations throughout the facility; and properly convey sewage and liquid disposable waste from the facility;

(19) that there are no cross-connections between the potable and waste water lines;

(20) that the manufacturer provide its employees with adequate, readily accessible toilet facilities that are maintained in a sanitary condition and good repair;

(21) that all operations in the receipt, inspection, transport, segregation, preparation, manufacture, packaging, and storage of medical cannabis or cannabis derived products are conducted in accordance with adequate security and sanitation principles;

(22) that medical cannabis or cannabis derived products that can support the rapid growth of undesirable microorganisms are stored and transported in a manner that prevents the growth of these microorganisms;

(23) that storage and transportation of medical marijuana or cannabis derived products are under conditions that will maintain security and protect medical cannabis or cannabis derived products against physical, chemical, and microbial contamination as well as against deterioration of the medical cannabis or cannabis derived product and the container;

(24) that current material safety data sheets are kept on the premises for all chemicals used, including but not limited to cleaning compounds, sanitizing agents, and pesticides; and

(25) that extraction for the purpose of manufacturing concentrates is conducted in a closed system utilizing an oil extractor solvent such as N-butane or carbon dioxide or utilizing ethyl alcohol.

B. Prohibited products: The use of dimethylsulfoxide (DMSO) in the production of cannabis derived products, and the possession of DMSO upon the premises of a manufacturer, is prohibited.

[7.34.4.13 NMAC - N, 2/27/2015]

7.34.4.14 LABELING OF USABLE CANNABIS: A non-profit producer shall not sell or otherwise distribute a usable cannabis product that has not been packaged and labeled in accordance with this rule. The label shall identify:

A. the name of the entity that produced the cannabis, and the name of the manufacturer of the cannabis-derived product (as applicable);

B. a batch number or code;

C. a production date or expiration date, including a "use by" or "freeze by" date for products capable of supporting the growth of infectious, toxigenic, or spoilage microorganisms;

D. the number of units of usable cannabis or concentrated cannabis-derived product contained within the product, as identified in department rules for the enrollment of qualified patients;

E. for dried, usable cannabis: the quantity of THC and CBD, which shall be expressed by weight;

F. for concentrated cannabis derived product: the quantity of THC and CBD, which shall be expressed by weight and by percentage of total weight;

G. pesticide(s) used in the production of the cannabis or cannabis-derived product;

H. instructions for use;

I. warnings for use;

J. instructions for appropriate storage;

K. approved laboratory analysis, including the results of strength and composition within ten percent (10%) of numbers shown on the package;

L. the name of the strain, product facts, or a nutrition fact panel, and a statement that the product is for medical use by qualified patients, to be kept away from children, and not for resale;

M. whether the batch from which the product was derived was sampled and tested by an approved laboratory; and

N. the name of the department approved testing facility used for active ingredient analysis, and quantity of THC and CBD (as applicable).

[7.34.4.14 NMAC - N, 2/27/2015; A, 2/29/2016]

7.34.4.15 DEPARTMENT-APPROVED TESTING LABORATORIES; GENERAL PROVISIONS: A laboratory applicant shall comply with the application requirements of this rule, and shall submit such other information as the laboratory applicant wishes to provide or such information as the department may request for initial approval and periodic evaluations during the approval period.

A. Testing categories: A laboratory may apply to become approved by the department as an approved laboratory for the testing of cannabis and cannabis derived products in all or any one of the following categories:

(1) mycotoxin analysis;

(2) microbiological contaminant analysis;

(3) solvent residue analysis;

(4) quantity of THC and CBD; and

(5) such other testing categories as the department may identify.

B. Fee: A laboratory applicant shall submit to the program with each initial application and renewal application for continued approval a non-refundable application fee of two-thousand-two-hundred dollars ($2,200), payable to the medical cannabis program.

C. Application materials: A laboratory applicant shall submit to the program with each initial application and renewal application for continued approval the following:

(1) standard operating procedures to be followed by the laboratory, including but not limited to policies and procedures to be used in performing analysis of samples;

(2) a description of the type of tests to be conducted by the laboratory applicant, which may include, but are not limited to, testing for microbiological contaminants, mycotoxins, solvent residue, THC content, CBD content, identity, purity, strength, composition, or nutritional content, and other quality factors;

(3) quality control criteria for the test(s) that the applicant intends to conduct;

(4) evidence that validates the accuracy of the test(s) to be conducted by the laboratory applicant as performed in the applicant's laboratory;

(5) proof that the laboratory applicant is in good standing with the New Mexico taxation and revenue department;

(6) copies of the laboratory applicant articles of incorporation and by-laws, as applicable;

(7) a list of all persons or business entities having direct or indirect authority over the management or policies of the laboratory applicant;

(8) a list of all persons or business entities having any ownership interest in any property utilized by the laboratory applicant, whether direct or indirect, and whether the interest is in land, building(s), or other material, including owners of any business entity that owns all or part of land or building(s) utilized;

(9) a description of the facilities and equipment that shall be used in the operation of the laboratory applicant;

(10) a description of how the laboratory applicant will ensure and document chain of custody of any samples held or tested by the laboratory;

(11) a general written security policy, to address at a minimum safety and security procedures;

(12) an attestation that no firearms will be permitted on any premises used by the laboratory applicant;

(13) a description of the methods and device or series of devices that shall be used to provide security;

(14) training documentation prepared for each employee of the laboratory applicant, statements signed by employees indicating the topics discussed (to include names and titles of presenters) and the date, time, and place the employee received said training;

(15) personnel records for each employee of the manufacturer applicant that include an application for employment and a record of any disciplinary action taken;

(16) employee safety and security training materials provided to each employee of the manufacturer applicant at the time of his or her initial appointment, to include training in the proper use of security measures and controls that have been adopted, and specific procedural instructions regarding how to respond to an emergency, including robbery or a violent accident; and

(17) such other materials as the department may require.

D. Materials to be maintained on premises: An approved laboratory shall maintain on its

premises, and shall promptly present to the department upon request:

(1) personnel documentation including, but not limited to employment records, job descriptions, education, and training requirements of the laboratory, and documentation of education and training provided to staff for the purpose of performance of assigned functions;

(2) requirements concerning laboratory operations, business licensing, and security procedures;

(3) standards for receipt, handling, and disposition of samples of usable cannabis;

(4) equipment information detailing the type of equipment used, inspection standards and practices, testing and calibration schedules and records, and standards for cleaning and maintenance of equipment;

(5) reagents, solutions, and reference standards including, but not limited to standards for labeling, storage, expiration, and re-qualification dates and records;

(6) reference standards, acquired or internally produced, including the certificate of analysis;

(7) sample analysis procedures including, but not limited to procedures for the use of only primary or secondary standards for quantitative analyses;

(8) documentation demonstrating that the analytical methods used by the laboratory are appropriate for their intended purpose; that staff is proficient in the process; and that deviations from approved standards of practice do not occur without proper authorization;

(9) standards for data recording, review, storage, and reporting that include, but are not limited to standards to ensure:

(a) that data is recorded in a manner consistent with this rule, and that it is reviewed to verify that applicable standards of practice, equipment calibration, and reference standards were applied before reporting;

(b) that all data, including raw data, documentation, protocols, and reports are retained in accordance with the requirements of this rule; and

(c) that reports are the property of the business or individual who provided the sample, and reports meet the requirements of this rule.

(10) current material safety data sheets for all chemicals used; and

(11) such other materials as the department may require.

E. Proficiency testing and inspection:

(1) A laboratory applicant shall be subject to proficiency testing by the department or its designee prior to approval, and an approved laboratory shall be subject to proficiency

testing, at a frequency and at times to be determined by the program manager. A laboratory applicant or approved laboratory shall cooperate with the department or its designee for purposes of conducting proficiency testing. The department or its designee may require submission of cannabis and cannabis-derived product samples from licensed non-profit producers for purposes of proficiency testing.

(2) A laboratory applicant and an approved laboratory shall be subject to inspection(s), at times determined by the program manager, in accordance with the provisions of this rule. The department may require the inspection of premises, equipment, and written materials to determine compliance with this rule, and to determine compliance with the application submissions of the laboratory applicant or approved laboratory, including but not limited to standard operating procedures and standards for testing.

(3) Failure of proficiency testing: If the department determines on the basis of a proficiency test that a laboratory applicant has not satisfactorily identified the presence, quantity, or other relevant factor(s) pertaining to a given analyte, the department may deny the application in whole or in part, require additional tests, or require remedial actions to be taken by the laboratory applicant. If the department determines on the basis of a proficiency test that an approved laboratory has not satisfactorily identified the presence, quantity, or other relevant factor(s) pertaining to a given analyte, the department may withdraw approval of the laboratory in whole or in part, require additional tests, or require remedial actions to be taken by the approved laboratory.

F. Retention and inspection of testing records: An approved laboratory shall retain all results of laboratory tests conducted on cannabis or cannabis derived products for a period of at least two years and shall make them available to the program upon the program's request.

G. Identification cards: Identification cards issued by the department are the property of the department and shall be returned to the department upon the termination of the holder's employment with the approved laboratory, upon suspension, or revocation, or upon demand of the department.

H. Term of approval: Department approval of a laboratory for purposes of this rule shall be for a term of one year, and shall expire after that year, or upon closure of the approved laboratory. An approved laboratory shall apply for renewal of approval annually no later than 30 days prior to expiration.

I. Termination: The department may deny, withdraw, or suspend approval of a laboratory in accordance with this rule, upon determination by the department that the laboratory has violated a provision of this rule, upon failure of a proficiency test, upon the refusal of the laboratory to provide requested access to premises or materials, or for upon the failure of a laboratory to comply with any standard, procedure, or protocol developed, submitted, or maintained pursuant to this rule.

[7.34.4.15 NMAC - N, 2/27/2015; A, 2/29/2016]

7.34.4.16 DEPARTMENT-APPROVED TESTING LABORATORIES; OPERATIONAL REQUIREMENTS:

A. Receipt of test samples: An approved laboratory may receive test samples of cannabis or cannabis derived products from any licensed producer, qualified patient or primary caregiver.

B. Testing policies: An approved laboratory or laboratory applicant shall establish and implement policies for sample preparation, documentation, and transport, including:

(1) accepted test sample types;

(2) minimum test sample size;

(3) recommended test sample container;

(4) test sample labeling;

(5) transport and storage conditions, such as refrigeration, as appropriate;

(6) other requirements, such as use of preservatives, inert gas, or other measures designed to protect sample integrity; and

(7) creation of chain of custody documentation for each sample.

C. Recording of samples received: An approved laboratory shall:

(1) record the receipt of every test sample received, the record of which shall include:

(a) the name and contact information of the licensed producer that was the source of the sample;

(b) an appropriately specific description of the sample;

(c) the date of receipt of the sample;

(d) a statement of the quantity (weight, volume, number, or other amount) of the sample; and

(e) a unique sample identifier for the sample.

(2) inform each licensed producer or individual who submits a test sample of the policies established in accordance with this section.

D. Sample handling, storage and disposal: An approved laboratory shall establish sample handling procedures for the tracking of test samples through the analytical process (by weight, volume, number, or other appropriate measure) to prevent diversion.

(1) An approved laboratory shall store each test sample under the appropriate conditions to protect the physical and chemical integrity of the sample.

(2) Analyzed test samples consisting of cannabis or cannabis-derived product shall be appropriately segregated, controlled, and held in a controlled access area pending destruction or other disposal.

(3) Any portion of a cannabis or cannabis-derived test sample that is not destroyed during analysis shall be:

(a) returned to the licensed producer who provided the sample; or

(b) destroyed in a manner which prevents unauthorized use; such destruction shall be documented and witnessed by at least two employees, one of whom shall be supervisory or managerial personnel; except that if video surveillance is used, only one employee is required.

E. Local ordinance: An approved laboratory and a laboratory applicant shall comply with all applicable local ordinances, including but not limited to zoning, occupancy, licensing, and building codes.

F. Laboratory premises: An approved laboratory and a laboratory applicant shall maintain the premises of the laboratory in a clean and orderly condition; shall equip the premises with such utensils and equipment as necessary to conduct the operations of the laboratory; and shall ensure adequate space for laboratory operations, sample storage, and document storage.

G. Storage: An approved laboratory and a laboratory applicant shall be equipped with one or more secure, controlled access areas for storage of cannabis and cannabis-derived product test samples, cannabis-derived waste, and reference standards. Access to such storage areas shall be limited by the laboratory to authorized individuals.

H. Equipment:

(1) Equipment used for the analysis of test samples shall be adequately inspected, cleaned, and maintained. Equipment used for the generation or measurement of data shall be adequately tested and calibrated on an appropriate schedule, as applicable.

(2) Laboratory operations shall document procedures setting forth in sufficient detail the methods and schedules to be used in the routine inspection, cleaning, maintenance, testing, and calibration of equipment, and shall specify, as appropriate, remedial action to be taken in the event of failure or malfunction of equipment. The procedures shall designate the personnel responsible for the performance of each operation.

(3) Records shall be maintained of all inspection, maintenance, testing, and calibrating operations. These records shall include the date of the operation, the person who performed it, the written procedure used, and any deviations from the written procedure. Records shall be kept of non-routine repairs performed on equipment as a result of failure and malfunction. Such records shall document the nature of the repair, how and when the need for the repair was discovered, and any remedial action taken in response to the repair.

(4) Computer systems used for the analysis of samples, retention of data,

sample tracking, calibration scheduling, management of reference standards, or other critical laboratory management functions shall ensure that electronic records, electronic signatures, and handwritten signatures executed to electronic records are trustworthy, reliable, and generally equivalent to paper records and handwritten signatures executed on paper.

I. Reagents, solutions, and reference standards:

(1) An approved laboratory is authorized to possess reagents, solutions, and reference standards. Such items shall be:

(a) secured in accordance with the approved laboratory's storage policies;
labeled to indicate identity, date received or prepared, and expiration or requalification date; and, where applicable, concentration or purity, storage requirements, and date opened;

(b) stored under appropriate conditions to minimize degradation or deterioration of the material; and

(c) used only within the item's expiration or requalification date.

(2) Deteriorated or outdated reagents and solutions shall be properly destroyed.

(3) An approved laboratory may acquire commercial reference standards for cannabinoids and other chemicals or contaminants, for the exclusive purpose of conducting testing for which the laboratory is approved. An approved laboratory may elect to internally produce reference standards. When internally produced, an approved laboratory shall utilize standard analytical techniques to document the purity and concentration of the internally produced reference standards. An approved laboratory is authorized to obtain cannabis or cannabis-derived product from a licensed non-profit producer for this purpose.

(4) An approved laboratory shall obtain or, for internally-produced standards, shall create a certificate of analysis (COA) for each lot of reference standard. Each COA shall be kept on file and the lot number of the reference standard used shall be recorded in the documentation for each analysis, as applicable.

J. Analysis: An approved laboratory shall:

(1) utilize analytical methods that are appropriate for the purpose of testing cannabis and cannabis-derived products;

(2) require analysts to demonstrate proficiency in the performance of the analytical methods used;

(3) maintain written procedures for the analytical method used for the analysis of each test sample, including:

(a) sample preparation;

(b) reagent, solution, and reference standard preparation;

(c) instrument setup, as applicable;

(d) standardization of volumetric reagent solutions, as applicable;

(e) data acquisition; and

(f) calculation of results.

(4) specify, as applicable to each analytical method used, requirements for accuracy, precision, linearity, specificity, limit of detection, limit of quantitation, and other data quality parameters;

(5) ensure that no deviations from approved protocols or standard operating procedures are made during any analytical process without proper authorization and documentation; and

(6) use only primary standards or secondary standards for quantitative analyses.

K. Recording of analytical data:

(1) An approved laboratory shall ensure that all data generated during the testing of a test sample, except data generated by automated data collection systems, is recorded directly, promptly, and legibly in ink. All data shall be annotated with the date of entry and signed or initialed by the person recording the data. Any change in entries shall be made so as not to obscure the original entry, shall indicate the reason for such change, and shall be dated and signed or initialed at the time of the change.

(2) In automated data collection systems, the individual responsible for direct data input shall be identified at the time of data input. Any change in automated data entries shall be made so as not to void or delete the original entry, shall indicate the reason for change, shall be dated, and shall identify the responsible individual.

(3) For each final result reported, an approved laboratory shall verify that:

(a) any calculations or other data processing steps were performed correctly;

(b) the data meet any data quality requirements such as for accuracy, precision, linearity, etc.;

(c) any reference standards used were of the appropriate purity and within their expiration or requalification dates;

(d) any volumetric solutions were properly standardized before use; and

(e) any test or measuring equipment used has been properly tested, verified, and calibrated, and is within its verification or calibration period.

L. Data storage:

(1) An approved laboratory shall ensure that all raw data, documentation, protocols, and final reports associated with analysis of a test sample are retained for two years from the date of the completion of analysis.

(2) An approved laboratory shall maintain the records identified in this section. Such records must be maintained:

(a) in a manner that allows retrieval as needed;

(b) under conditions of storage that minimize deterioration throughout the retention period; and

(c) in a manner that prevents unauthorized alteration.

M. Records maintenance and access: An approved laboratory or laboratory applicant shall designate an individual as responsible for records maintenance. Only authorized personnel may access the maintained records.

N. Data reporting:

(1) Contents of report: A laboratory report of a test conducted at the request of a licensed producer or qualified patient shall contain the following information:

(a) the date of receipt of the test sample;

(b) the description of the type or form of the test sample (leaf, flower, powder, oil, specific edible product, etc.);

(c) the unique sample identifier;

(d) information on whether sampling was performed by the laboratory operation, by the compliant business or individual which submitted the test sample, or by a third-party;

(e) date on which analysis occurred;

(f) the analytical method used, including at a minimum identification of the type of analytical equipment used (e.g., GC, HPLC, UV, etc.);

(g) the analytical results, including units of measure where applicable;

(h) the identity of the supervisory or management personnel who reviewed and verified the data and results and ensured that data quality, calibration, and other applicable requirements were met; and

(i) the name, address, and contact information of the approved laboratory that conducted the test.

(2) The laboratory report shall state that reported analytical results apply only to the test sample received.

O. Destruction of excess cannabis: Unused cannabis, cannabis products, or cannabis-derived product waste that is in the possession of an approved laboratory shall be disposed of by transporting the unused portion to a state or local law enforcement office, or by destruction of the material.

P. Department access to materials and premises: An approved laboratory shall promptly provide the department or the department's designee access to a report of a test, and any underlying data, that is conducted on a sample at the request of a licensed producer or qualified patient. An approved laboratory shall also provide access to the department or the department's designee to laboratory premises, and to any material or information requested by the department, for the purpose of determining compliance with the requirements of this rule.

[7.34.4.16 NMAC - N, 2/27/2015]

7.34.4.17 DEPARTMENT-APPROVED COURIERS; GENERAL PROVISIONS:

A. Approval of couriers: The department may approve a courier for the purpose of transporting usable cannabis from one or more licensed non-profit producers to qualified patients, primary caregivers, other non-profit producers, approved manufacturers and approved laboratories.

B. Application requirements: An applicant who seeks department approval to operate as a courier shall provide the following materials and information to the department in order to be considered for approval; and an approved courier shall promptly submit revisions in the event that the materials or information changes:

(1) a plan for delivery;

(2) a plan for security, including a description of facilities and containers intended for use in storing and transporting usable cannabis;

(3) a plan for safety, to include at a minimum a description of measures to be taken by the courier and its employees to ensure the safety of qualified patients, primary caregivers, and courier staff;

(4) a description of all vehicles used or intended to be used for the transport of usable cannabis;

(5) a complete list of employees;

(6) clear, legible photocopies of current New Mexico state-issued identification cards of all courier personnel;

(7) completed nationwide and statewide criminal history screening documentation;

(8) a description of the courier's hours of operation;

(9) a description of the locations or type(s) of locations where the courier will offer delivery of usable cannabis;

(10) a description of all licensed non-profit producers for whom the courier will deliver usable cannabis, and copies of all agreements between the courier and licensed non-profit producers for the delivery of usable cannabis;

(11) a description of all fees to be charged by the courier;

(12) protocols for contacting and communicating with qualified patients and primary caregivers regarding deliveries;

(13) training materials for drivers;

(14) confidentiality training materials that address the confidentiality of qualified patient and primary caregiver information;

(15) proof that the non-profit producer is in good standing with the New Mexico taxation and revenue department (TRD);

(16) copies of the applicant's articles of incorporation or organization, as applicable;

(17) copies of the applicant's by-laws, as applicable;

(18) a list of all persons or business entities having direct or indirect authority over the management or policies of the courier, as applicable;

(19) a list of all persons or business entities having any ownership interest in any property utilized by the courier, whether direct or indirect, whether the interest is in land, building(s), or other material;

(20) proof that no buildings to be used by the courier are located within 300 feet of any school, church, or daycare center;

(21) if the courier will base its business at a location that is not owned by the applicant: a written statement from the property owner or landlord of the location that grants to the courier permission to possess cannabis on the premises;

(22) an attestation that the courier will not distribute cannabis within 300 feet of a school, church or daycare center, in accordance with the provisions of this rule; and

(23) an attestation that no firearms will be permitted on any premises or in any vehicle used by the courier; and that no employee will possess a firearm when transporting or distributing cannabis.

C. General requirements: An approved courier shall adhere to each of the following requirements:

(1) a courier may contract with a licensed non-profit producer to deliver usable

cannabis from the non-profit producer to qualified patients, primary caregivers, other non-profit producers, approved manufacturers and approved laboratories; a courier that provides service to more than one licensed non-profit producer shall offer their service at a uniform price for all non-profit producers for whom they deliver; an approved courier shall not transport a cannabis product that is not individually packaged, or that is not labeled in accordance with this rule;

(2) an approved courier shall not request or receive payment from a qualified patient or primary;

(3) upon obtaining a package of usable cannabis from a licensed non-profit producer, an approved courier shall hold the package in a secured area or areas that are locked and otherwise resistant to tampering or theft, until the package is delivered to its intended recipient or returned to the licensed non-profit producer;

(4) an approved courier shall not relinquish possession of usable cannabis unless and until the package of usable cannabis is either successfully delivered or returned to the licensed non-profit producer; for purposes of this section, a package of usable cannabis is successfully delivered only upon the approved courier's verification that an intended recipient has taken actual, physical possession of the package; an approved courier shall not leave a package at any location for any reason, unless the package is successfully delivered to its intended recipient;

(5) an approved courier shall not deliver a package to any person or entity who is not identified by the licensed non-profit producer as an intended, authorized recipient;

(6) at the time of delivery, an approved courier shall verify the recipient's identity by requiring presentation of the recipient's department-issued medical cannabis identification card and New Mexico-issued photo identification card or a passport; an approved courier shall not deliver usable cannabis to any person whose identity is not verified in accordance with this rule; an approved courier shall document having verified the recipient's identification in accordance with this rule for each transaction;

(7) an approved courier shall not possess usable cannabis for a time period greater than seven days; an approved courier shall return any usable cannabis that is not successfully delivered to its intended recipient to a licensed non-profit producer within this time period;

(8) an approved courier shall not distribute cannabis at locations that are within 300 feet of a school, church, or daycare center; provided that, for purposes of this provision, delivery to the residence of a qualified patient or primary caregiver shall not be deemed "distribution";

(9) an approved courier and its personnel shall at all times take measures to ensure confidentiality and safety in the transport and delivery of usable cannabis;

(10) an approved courier shall appropriately train its personnel regarding the

confidentiality of information concerning qualified patients and primary caregivers; confidentiality training shall describe confidentiality requirements applicable under both federal and state law; an approved courier shall conduct confidentiality training of its personnel at least once annually, and shall maintain training materials on its premises, and document the training of individual staff; and

(11) personnel of an approved courier shall not possess a firearm while distributing or otherwise possessing cannabis; an approved courier shall not possess or permit the possession of a firearm on any premises, including a building or vehicle, utilized by the courier.

D. Identification cards: The department shall issue an identification card to each authorized employee of an approved courier authorizing that individual to transport cannabis from a non-profit producer to a qualified patient or primary caregiver. An employee of an approved courier shall carry the card at all times that the person transports cannabis, and shall present the card to law enforcement officials upon request. Identification cards issued by the department are the property of the department and shall be returned to the department upon an approved courier's withdrawal from the program, upon the termination of a card holder's employment with the approved courier, upon suspension or revocation, or upon demand of the department.

E. Term of approval: Department approval of a courier shall be for a term of one year, and shall expire after that year, or upon closure of the courier. A courier shall apply for renewal of approval annually no later than 30 days prior to expiration.

F. Chain of custody: A courier shall adopt, maintain, and enforce chain of custody procedures and documentation requirements to ensure appropriate tracking and inventory of usable cannabis. A courier shall also adopt, maintain, and enforce security requirements to ensure that usable cannabis transported by the courier is secured, and to promote the safety of courier personnel, as well as qualified patients and primary caregivers who receive packages from the courier.

G. Confidentiality: An approved courier may obtain contact information of a purchasing qualified patient or primary caregiver, as permitted by agreement between the courier and a respective licensed non-profit producer, and may utilize such information solely for the purpose of arranging a delivery location and time with the qualified patient or primary caregiver. An approved courier shall not otherwise disseminate, disclose, or use identifying information or contact information concerning a qualified patient or primary caregiver.

[7.34.4.17 NMAC - N, 2/27/2015; A, 2/29/2016]

7.34.4.22 PROHIBITIONS, RESTRICTIONS, AND LIMITATIONS ON THE PRODUCTION AND DISTRIBUTION OF MEDICAL CANNABIS AND CRIMINAL PENALTIES:

A. Participation in the medical cannabis licensing program by a licensed producer, or the

employees or contractors of a licensed producer, does not relieve the producer, employee, or contractor from criminal prosecution or civil penalties for activities not authorized in this rule and the act.

B. Locations of production and distribution: Production of medical cannabis and distribution of medical cannabis to qualified patients or their primary caregivers shall take place at locations (or, with respect to distribution, categories of locations) described in the non-profit producer's production and distribution plan approved by the department, and shall not take place at locations that are within 300 feet of any school, church, or daycare center. For purposes of this rule, delivery to the residence of a qualified patient or primary caregiver shall not be deemed "distribution".

C. Fraudulent misrepresentation: Any person who makes a fraudulent representation to a law enforcement officer about the person's participation in the medical cannabis program to avoid arrest or prosecution for a cannabis-related offense is guilty of a petty misdemeanor and shall be sentenced in accordance with the provisions of Section 31-19-1 et seq., NMSA 1978.

D. Unlawful distribution: If a licensed producer or employee of a licensed producer sells, distributes, dispenses, or transfers cannabis to a person not approved by the department pursuant to this rule and the act, or obtains or transports cannabis outside New Mexico in violation of federal law, the licensed producer or employee of the licensed producer shall be subject to arrest, prosecution, and civil or criminal penalties pursuant to state law.

E. Revocation of registry identification card, licensed primary caregiver card, license to produce or distribute: Violation of any provision of this rule may result in disciplinary action, in accordance with this rule.

[7.34.4.22 NMAC - Rp, 7.34.4.14 NMAC, 2/27/2015]

7.34.4.27 STORAGE AND DISPOSAL OF CANNABIS BY LICENSED PRODUCERS:

A. Storage: Medical cannabis, unused cannabis products, and cannabis-derived product waste shall be stored by a licensed producer in a manner that discourages diversion or theft, until such time as the material is transferred, disposed of, or destroyed in accordance with this rule.

B. Disposal by personal production license holders: Unused cannabis, cannabis products, or cannabis-derived product waste that is in the possession of a qualified patient who holds a personal production license shall be disposed of by transporting the unused portion to a state or local law enforcement office, or by destruction of the material.

[7.34.4.27 NMAC - Rp, 7.34.4.19 NMAC, 2/27/2015]

7.34.4.20 SECURITY REQUIREMENTS FOR LICENSED PRODUCERS: Private non-profit entities licensed to produce medical cannabis shall comply with the following requirements to ensure that

production and distribution facilities are located on secure grounds.

A. The non-profit producer shall provide and maintain in each facility a fully operational security alarm system.

B. The non-profit producer shall conduct a monthly maintenance inspection and make all necessary repairs to ensure the proper operation of the alarm system and, in the event of an extended mechanical malfunction that exceeds an eight hour period, provide alternative security that shall include closure of the premises.

C. The non-profit producer shall maintain documentation for a period of at least 24 months of all inspections, servicing, alterations, and upgrades performed on the security alarm system; all documentation shall be made available within 24 hours of a department representative's request; failure to provide equipment maintenance documentation within the 24 hour period shall subject the licensed producer to the sanctions and penalties provided for in this rule; the 24 hour period shall not include holidays and weekends.

[7.34.4.20 NMAC - Rp, 7.34.4.11 NMAC, 2/27/2015]

TITLE 7 HEALTH
CHAPTER 34 MEDICAL USE OF CANNABIS
PART 3 REGISTRY IDENTIFICATION CARDS

7.34.3.9 QUANTITY OF USABLE CANNABIS THAT MAY BE POSSESSED BY A QUALIFIED PATIENT OR PRIMARY CAREGIVER:

A. Maximum quantity: A qualified patient and a qualified patient's primary caregiver may collectively possess within any three-month period a quantity of usable cannabis no greater than 230 total units. For purposes of department rules, this quantity is deemed an adequate supply. (For ease of reference: 230 units is equivalent to 230 grams, or approximately eight ounces, of dried usable cannabis plant material.) A qualified patient and primary caregiver may also possess cannabis seeds.

B. Calculation of units: For purposes of department rules, one unit of usable cannabis shall consist of one gram of the dried leaves and flowers of the female cannabis plant, or 0.2 grams (200 milligrams) of THC for cannabis-derived products.

C. Maximum THC content of concentrates: A qualified patient or primary caregiver shall not possess a concentrated cannabis-derived product that contains greater than seventy percent (70%) THC by weight.

D. Medical exception: A greater quantity of usable cannabis, not to exceed 115 additional units, may be allowed, and a concentrated cannabis-derived product with THC content greater than seventy percent (70%) by weight may be allowed, at the department's discretion, upon the submission of a statement by a medical practitioner explaining why a greater number of units of usable cannabis, or a higher concentration of THC in concentrated cannabis-derived product, is medically necessary. Any such allowance shall be reviewed for approval by the program's medical director.
[7.34.3.9 NMAC - N, 2/27/2015]

7.34.3.13 POSSESSION OF USABLE CANNABIS:

A. A qualified patient or primary caregiver shall ensure that that all cannabis, cannabis-derived products, and paraphernalia are kept secure and out of reach of children.

B. A qualified patient and primary caregiver shall ensure that all cannabis and cannabis-derived products that are purchased from a licensed non-profit producer remain in the package or container provided by the non-profit entity when not in use. If the package or container is damaged, the product label and any other identifying information from the package or container shall be kept and remain with the cannabis or cannabis-derived product upon transfer to another package or container.

C. A qualified patient or primary caregiver may transfer cannabis and cannabis derived products to an approved laboratory for testing purposes.
[7.34.3.13 NMAC - N, 2/27/2015]

2019-005

Petition for a Chemically Untainted (Non-toxic) Medical Cannabis Supply Chain

By [redacted] et al. for Cannabis Activism of Albuquerque, [redacted]
Prepared by Vin LoPresti Ph.D.

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Petitioner Interest and Credentials:
Cannabis Activism of Albuquerque is a collective representing the interests of over 100 Medical Cannabis patients, growers, medical professionals, and biomedical scientists in the greater Albuquerque area. Hence the interests of our group are both personal and professional. The preparer of this petition, Dr. Vin LoPresti holds a BA in Chemistry and two Masters degrees and a Ph.D. in Cell and Molecular Biology from Columbia University in New York. At least three nurses, several growers, and creators of novel topical whole-plant CBD products are also represented in the group. Collectively, we therefore possess a rather broad spectrum of expertise in the Medical Cannabis arena.

Focus of this petition
In light of the State's impending transition to what appears to be the adoption of recreational Cannabis and of statements attributed to State legislators, we are concerned that there is insufficient emphasis on guaranteeing a separate untainted supply for the Medical program (the Program). This applies to both herbicides and insecticides commonly used in plant cultivation, but may extend to other potential human toxins. In this petition, we focus on insecticides as exemplary. Additionally, we briefly address organic growth conditions versus growth in non-soil media.

Rationale
If whole-plant and derivatives of *Cannabis sativa* for the Program are to be genuinely considered therapeutic or prophylactic, then clearly, they must also be free of contaminating chemistry that may potentially cause patient harm. This likewise implies that testing for potential toxins must be adequately rigorous, with toxicity limits similar to those applied by the FDA and other agencies to more-traditional pharmaceuticals.

Unfortunately, as reported by the Albuquerque Sunday Journal of 2-10-19, it appears that state legislators are considering a supply chain in which "licensed marijuana businesses keep a percentage of their supply devoted to the medical program."[1] Based upon the notion that the Program is generating therapeutic/prophylactic treatments, we deem this approach to be inadequate to quality control.

Additionally, it would appear that growers, particularly mass-cultivators, must be cognizant of the water, soil and other conditions used in cultivation. This is well-illustrated by a story posted both in the *Guardian*, *Santa Fe New Mexican* and at several other online sites of water pollution requiring a Clovis, NM dairy farmer to consider euthanizing his entire dairy cattle herd owing to the presence of polyfluoroalkanes (PFAS) derived from fire retardants employed by the US Air Force. PFAS are implicated as potentially carcinogenic, thyrotoxic, immunotoxic, and teratogenic. Moreover, these toxins may well have entered the Ogallala Aquifer, thereby threatening a variety of cultivation activities.[2]

Example of Compounds that Must be Excluded from Medical Supply: Insecticides
For example, rotenoid insecticides such act as inhibitors of fundamental energy metabolism by interfering with several enzymes and coenzymes in the electron transport chain by which most animal cells obtain energy from sugars, fats, and amino acids for ATP synthesis [3]. They therefore pose a danger to human metabolism as well.

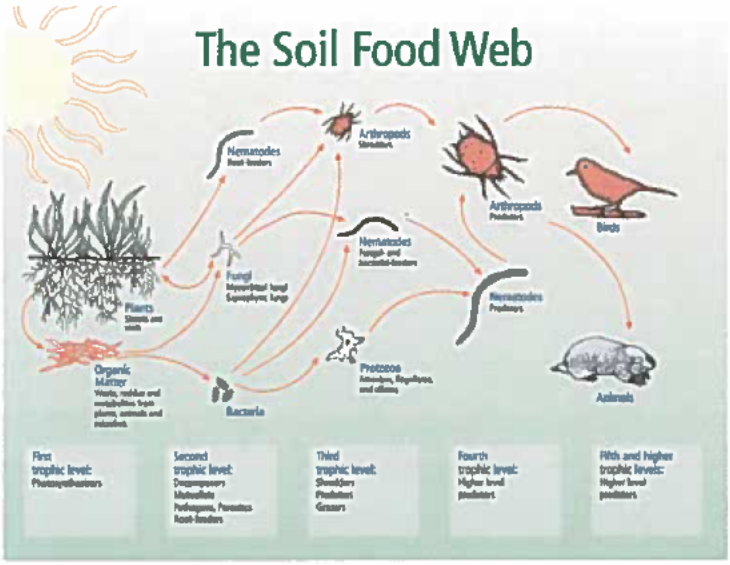
Pyrethrin, synthetic pyrethroids, and DDT interfere with the functioning of axonal voltage-gated sodium channels in insect neurons leading to repetitive neuronal firing and ultimately to muscle paralysis. Because such sodium channels are similar proteins in insects and mammals, these compounds exhibit human neurological toxicity that, depending on dose, may range from local numbness to headache, dizziness, nausea, and even loss of consciousness for larger exposures. [4].

Organochlorine pesticides are also neurotoxic in several ways, including interference with functioning of neurotransmitter receptor glycoproteins.

Organophosphates generally interfere with the enzyme acetylcholinesterase, whose action terminates the effect of the neurotransmitter acetylcholine at synapses. Sufficient structural similarity exists between insect and mammalian acetylcholinesterases to provoke human neurotoxicity.

Other insecticides such as neonicotinoids also generally act, by various pharmacological mechanisms as neurotoxins, with concomitant human side-effects — both neurotoxic and potentially carcinogenic — possible or documented.

Metabolic Contrasts in Organic Growth in Soil vs. Non-soil Substrates



In addition to the exclusion of toxic compounds, growth of plants in organic soil may well produce metabolically different outcomes than in plants grown on other substrates because of symbiotic relationships between plant roots and soil microorganisms. For example, the mutualistic symbiosis between the hyphae of mycorrhizal fungi and the roots of trees and other plants has been well studied. In brief, the soil fungus acts to concentrate essentials minerals such as potassium, nitrogen, phosphorus, and micronutrients, thereby enabling more rapid and complete uptake by the plant roots. In exchange, the fungus is supplied carbohydrates photosynthesized by the plant. [5]. Soil likewise contains an abundance of saprophytic fungi and bacteria that degrade (turn over) macronutrients thereby maintaining soil nutrient balance.

Proposed Benefits

This proposal offers widespread benefits to program patients of all qualifying medical conditions, in that it offers a pathway to ensuring a fundamental principle in medical practice: ***First do no harm***. As such, it applies to each and every patient approved by NM DOH for Medical Cannabis therapy.

Documentation

1.Albuquerque Sunday Journal, February 10, 2019, p. A1.
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3. "Public Health Statement: Pyrethrins and Pyrethroids" Agency for Toxic Substances and Disease Registry, https://www.atsdr.cdc.gov/ToxProfiles/tp155-c1-b.pdf
4. Ghosal, A., "Mode of Action of Insecticides," AkiNik Publications, ISBN 978-93-88112-57-4 (2018), https://www.researchgate.net/publication/327580308_Mode_of_Action_of_Insecticides
5. Ingham, E. R. "The Living Soil: Fungi", U.S, Department of Agriculture, https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/health/biology/?cid=nrcs142p2_053864