DEPARTMENT OF HEALTH

Minnesota Medical Cannabis Program
Petition to Add a Qualifying Medical Condition

Making your petition

☐ Any person may petition the Minnesota Department of Health ("the department" or "MDH") to add a qualifying medical condition to those listed in subdivision 14 of Minnesota Statutes section 152.22.

Petitions will be accepted only between June 1 and July 31, 2019.
Petitions received outside of these dates will not be reviewed.

Petitions must be sent by certified U.S. mail to:

Minnesota Department of Health
Office of Medical Cannabis
P.O. Box 64882
St. Paul, MN 55164-0882

☐ You must mail the original copy of the petition with an original signature.

☐ Complete each section of this petition and attach all supporting documents. Clearly indicate which section of the petition an attachment is for.

☐ Each petition is limited to one proposed qualifying medical condition. If your petition includes more than one medical condition, it will be dismissed.

☐ If you are petitioning for the addition of a medical condition that was considered but not approved in a prior year's petition process, you **must include** new scientific evidence or research to support your petition or describe substantially different symptoms. Our website has the petitions and review material for each petitioned medical condition that was reviewed in prior years (http://www.health.state.mn.us/people/cannabis/rulemaking/addconditions.html). Petitions that do not include new scientific evidence or research to support your petition or describe substantially different symptoms will not be considered.

☐ If the petition is accepted for consideration, MDH will send the petition documents to the Medical Cannabis Review Panel ("Review Panel"). MDH staff will also provide information to the Review Panel about the proposed qualifying condition, its prevalence, and the effectiveness of current treatments.

☐ You may withdraw your petition any time before the Review Panel's first public meeting of the year by submitting a written statement to the Department stating that you want to withdraw it.

Petition review process

☐ An appointed citizens Review Panel will meet to review all eligible petitions and supporting documentation.
☐ MDH will post notice of the public meetings of the Review Panel on its medical cannabis website.
☐ After the public meeting and by November 1, 2019 the Review Panel will provide the Commissioner of Health a written report of findings.
☐ The Commissioner will approve or deny the petition by December 2, 2019.

DEPARTMENT OF HEALTH

RECEIVED
AUG - 1 2019

Minnesota Medical Cannabis Program
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Section A: Petitioner's Information

Name (First, Middle, Last): [redacted]		
Home Address (including Apartment or Suite #): [redacted]		
City: [redacted]	State: MN	Zip Code: [redacted]
Telephone Number: [redacted]	E-mail Address: [redacted]	

Section B: Medical Condition You Are Requesting Be Added

Please specify the name and provide a brief description of the proposed qualifying medical condition. Be as precise as possible in identifying the condition. **Optional:** Include diagnostic code(s), citing the associated ICD-9 or ICD-10 code(s), if you know them. *Attach additional pages as needed.*

Moderate or Severe Persistent, Chronic Pain

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Section C: Symptoms of the Proposed Medical Condition and/or Its Treatment

Describe the extent to which the proposed qualifying medical condition or the treatments cause suffering and impair a person's daily life. *Attach additional pages if needed.*

* see attached

Section D. Availability of conventional medical therapies

Describe conventional medical therapies available and the degree to which they ease the suffering caused by the proposed qualifying medical condition or its treatment. *Attach additional pages if needed.*

* see attached

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Section E: Anticipated benefits from Medical Cannabis

Describe the anticipated benefits from the medical use of cannabis specific to the proposed qualifying medical condition. *Attach additional pages if needed.*

See attached

Section F (optional): Scientific Evidence of Support for Medical Cannabis Treatment

It will strengthen your petition to include evidence generally accepted by the medical community and other experts supporting the use of medical cannabis to alleviate suffering caused by the proposed medical disease or its treatment. This includes but is not limited to full text, peer-reviewed published journals or other completed medical studies. Please attach complete copies of any article or reference, not abstracts.

☑ ***I have attached relevant articles.*** *(check box if you have attached scientific articles or studies)*

Section G (optional): Letters in Support of Adding the Medical Condition

Attach letters of support for the use of medical cannabis from persons knowledgeable about the proposed qualifying medical condition, such as a licensed health care professional.

☑ ***I have attached letters of support.*** *(check box if you have attached letters of support)*

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Section H: Acknowledgement and Signature

Please Note: Any individually identifiable health information relating to any past, present, or future health condition or health care contained in this Petition is classified as a health record under Minnesota Statutes §144.291, and is not subject to public disclosure.

I certify that the information provided in this petition is true and accurate to the best of my knowledge.

[redacted] 07/31/2019

SIGNATURE DATE (mm/dd/yyyy)

To obtain this information in a different format, call:
(651) 201-5598 in the Metro area and (844) 879-3381 in the Non-metro.

Section A: Petitioner's Information

Jared Poe o/b/o Sensible Minnesota
[redacted]

Co-petitioners:

Maren Schroeder
Policy Director, Sensible Change Minnesota
maren@changemn.org

Mary Kay Gilbert
marykay@mkgstrategies.com

University of Minnesota Students for Sensible Drug Policy
umnssdp@umn.edu

Hamline University Students for Sensible Drug Policy
ssdp@hamline.edu

Section B: Medical Condition You Are Requesting Be Added

Clinical Information: **Moderate or Severe Persistent, Chronic Pain:**

- "Moderate to severe persistent, chronic pain" is meant to encompass pain which is moderate to severe and interferes with a patient's daily life, but which does not rise to the statutory definition of "intractable pain" currently allowed under Minnesota law, defined by Minn. Stat. 152.125 as pain whose cause cannot be removed and, according to generally accepted medical practice, the full range of pain management modalities appropriate for the patient have been used without adequate result or with intolerable side effects. Intractable pain may not encompass patients who qualify for surgical intervention, opioid treatment, physical therapy, or other more traditional pain treatments. "Moderate to severe persistent, chronic pain" intends to provide patients and health care providers the flexibility to use medical cannabis as an alternative or supplement to more "generally accepted" medical treatment or for use in patients whose pain is chronic and long-term in nature, but for which the cause could be removed."

- Diagnostic Criteria:
    - Patient/ doctor rapport: pain cannot be objectively measured, so doctors rely on communication with their patient as to how much pain, location of pain, & duration of pain the patient experiences. Additional diagnostic tests and a physical exam may be conducted to gather more details for the health care provider. Tests may include: laboratory tests, musculoskeletal

or neurological exams, imaging tests (i.e. MRI, x-rays, etc.), electrodiagnostic procedures (i.e. EMG, nerve conduction studies, etc.).[i]

- ****See addendum for descriptions of types of pain & additional information.**

Section C: Symptoms of Proposed Medical Condition and/or Its Treatments

- Symptoms of chronic pain may include: joint pain, muscle aches, burning pain, fatigue, sleep issues, loss of stamina and flexibility (due to decreased activity), mood problems (including depression, anxiety, and irritability).

- Treatments available for chronic pain include: drugs to relieve pain (i.e. anti-inflammatories, acetaminophen, COX-2 inhibitors, steroids, skeletal muscle relaxants, antidepressants & anti-seizure medications, & opioids), physical therapy, nerve blocks, psychological/ behavioral therapy, alternative healthcare (i.e. acupuncture, hypnosis, and yoga).[ii]

- Nonsteroidal anti-inflammatory drugs (NSAIDs): naproxen sodium (i.e. ibuprofen/ Advil/ Motrin IB, etc.); these drugs are commonly used for arthritis and pain resulting from muscle sprains, strains, back and neck injuries, or menstrual cramps. NSAIDs may cause nausea, stomach pain, stomach bleeding or ulcers. Large doses of NSAIDs may lead to kidney problems, fluid retention, and high blood pressure – risks of these adverse effects increases with age and in the presence of other health problems, including diabetes, a history of stomach ulcers or reflux, and kidney disease. NSAIDs have a ceiling effect – a limit as to how much pain they can control; beyond a certain dosage may not relieve pain, and may increase risk of serious side effects.

- Acetaminophen: (i.e. Tylenol, etc.). Acetaminophen is recommended as a first line treatment for mild to moderate pain (i.e. skin injury, headache, musculoskeletal condition); often prescribed to help manage osteoarthritis and back pain; it may also be combined with opioids to reduce the amount of opioid needed. Taking more than the recommended dose, or in conjunction with alcohol, increases the risk of kidney damage and liver failure. Acetaminophen is not as effective as NSAIDs for the treatment of knee and hip pain.

- COX-2 inhibitors: medications developed to reduce common side effects from traditional NSAIDs. COX-2 inhibitors are commonly used for arthritis and pain from muscle sprains, strains, back & neck injuries, or menstrual cramps. Stomach bleeding may occur in higher doses. Other possible side effects include: headache and dizziness, kidney problems, fluid retention, and high blood pressure. Older patients may be at a higher risk for adverse side effects. It is usually recommended to take the lowest effective dose for the shortest time possible.

- Skeletal muscle relaxants: tizanidine, cyclobenzaprine, baclofen & dantrolene, chlorzoxazone. Potential adverse effects from long-term use: sedation, addictive potential and hepatoxicity (liver failure). Use of skeletal muscle relaxants has shown to be effective in treating acute pain, for less than a month.

- Antidepressants and anti-seizure medications: tricyclic antidepressants (i.e. amitriptyline & nortriptyline), serotonin and norepinephrine reuptake inhibitors (SNRIs: duloxetine, venlafaxine, and milnacipran; anti-seizure: gabapentin and pregabalin. These medications have been found to be helpful in relieving chronic pain/ back pain, fibromyalgia, and diabetes-related nerve pain; antidepressants may doubly benefit pain and mood symptoms. Depression can worsen pain symptoms, and vice-versa. These medications may take several weeks to take effect. Side effects may include: nausea, dizziness or drowsiness, increased anxiety, worsen depression or suicidal thoughts.

- Opioids: synthetic cousins of opium and drugs derived from opium, such as heroin and morphine. They are often prescribed for acute pain that stems from traumatic injury. Opioid currently cause the most prescription drug-related overdose deaths in the United States – and the rate continues to rise. It is recommended that opioids are used at the lowest dose possible, usually for just a few days. Medications include: hydrocodone, hydrocodone-acetaminophen, fentanyl, oxycodone, oxycodone-acetaminophen, etc. Side effects include muffled nerve cell functions (such as breathing, heart rate, and level of alertness). Long-term use of opioids may lead to dependence and addiction due tolerance – needing more of the same medication to achieve the same degree of pain relief.[iii]

- Corticosteroids (i.e. cortisone, hydrocortisone, & prednisone): may reduce inflammation/ inflammatory conditions, such as arthritis and asthma. Corticosteroids also suppress the immune system, which can help control conditions in which the immune system mistakenly attacks its own tissues.

- The efficacy of opioid use in the treatment of chronic pain has not been definitively proven. Common side effects of opioid use include: sedation, dizziness, nausea, vomiting, constipation, physical dependence, tolerance, and respiratory depression. Physical dependence and addiction are definitive clinical concerns. Less common side effects include delayed gastric emptying, hyperalgesia, immunologic and hormonal dysfunction, muscle rigidity, and myoclonus. The most common side effects are constipation and nausea. Constipation may be severe enough to warrant opioid use discontinuation. Opioids are broad spectrum analgesic agents – affecting many organ systems and influencing a large number of body functions.[iv]

- Methadone side effects include: constipation, dizziness, drowsiness, nausea or vomiting, impaired cognition or confusion, forgetfulness, impaired balance or coordination. It is much easier to overdose on methadone than other opioid drugs. Symptoms of overdose include: respiratory depression, clammy or bluish skin, blue-tinted lips and fingertips, extreme fatigue (unable to stay awake), stupor, convulsions, vomiting, coma, and death. Side effects of methadone withdrawal include: watery eyes, runny nose, fever or chills, sweating, tremors, muscle aches, diarrhea, nausea or vomiting, loss of appetite, anxiety or

irritability, depression, restlessness, insomnia, and tachycardia. Buprenorphine is viewed as having less potential for abuse than methadone, but side effects are similar to those of methadone. L-alpha-acetylmethadol (LAAM) is another alternative to methadone treatment with side effects including: rash, nausea, increased blood pressure, and abnormal liver function.[v]

- Anxiety, insomnia, and pain are treated with benzodiazepines. The most common side effects of benzodiazepines include: drowsiness, dizziness, confusion, unsteadiness, light-headedness, slurred speech, muscle weakness, memory problems, constipation, nausea, dry mouth, and blurred vision. Less common side effects are headaches, low blood pressure, increased saliva production, digestive disturbances, rashes, sight issues (such as double vision), tremors, changes in sexual desire, incontinence, and difficulty urinating. Also reported side effects include: blood disorders, jaundice (yellow skin), and breast development in men. Some people may experience memory problems, or paradoxical effects, such as increased anxiety, aggressive behavior, agitation, delusions, depersonalization/ disassociation/ derealization, hallucinations, decreased inhibitions/ inappropriate behavior, irritability, nightmares, personality changes, psychoses, rages, restlessness, and suicidal thoughts or behavior. Long term side effects include: difficulty concentrating, feeling dulled and slow, feeling isolated and unreal, feeling cut off from one's emotions, irritability and impatience, loss of confidence, weight problems, and memory problems. Withdrawal symptoms can occur several hours after short-acting benzos., and up to three weeks after taking long-acting benzos; if benzos. have been taken for an extended period of time, symptoms of withdrawal may last for weeks or months. Possible withdrawal symptoms include: abdominal cramps, agoraphobia, increase anxiety, physical symptoms of anxiety (muscle tension, tight chest, palpitations, fast heartbeat, sweating, and trembling), blurred vision, depression, difficulty sleeping, dizziness, face and neck pain, headaches, inability to concentrate, increased sensitivity to light, noise, touch, and smell, loss of interest in sex, loss of appetite, nausea, nightmares, panic attacks, restlessness, sore eyes, sore tongue and metallic taste, tinnitus, tingling in the hands and feet, unsteady legs, vomiting, and weight loss. Severe withdrawal symptoms include: burning sensations in the skin, confusion, severe depression, depersonalization, derealization, hallucinations, memory loss, muscle twitching, paranoia and delusions, and seizures. Symptoms of sudden withdrawal from benzos. include: confusion, psychosis, seizures, a condition similar to delirium tremens (alcohol withdrawal).[vi]

- Side effects of clonidine include (may treat high blood pressure & pain): dry mouth, drowsiness, dizziness, lightheadedness, irritability, tiredness, mood changes, sleep problems (insomnia or nightmares), headache, ear pain, fever, feeling hot, constipation, diarrhea, stomach pain, increased thirst, loss of interest in sex, impotence, difficulty having an orgasm, cold symptoms (stuffy nose, sneezing, cough, or sore throat). Serious side effects include: hypotension, bradycardia, congestive heart failure, weakness, and edema. Other side effects may occur.[vii]

- Loperamide (used to treat diarrhea) side effects may include: bloating, constipation, loss of appetite, stomach pain with severe nausea and vomiting, skin rash, dizziness or drowsiness, and dry mouth.[viii]

- Prochlorperazine (antipsychotic/ treats nausea, vomiting, and anxiety): side effects may include: agitation, black/ tarry stools, chest pain, clay-colored stools, constipation, dark urine, decrease in urine frequency, diarrhea, difficulty swallowing and breathing, dizziness, drooling, drowsiness, dry mouth, fever, headache, impotence, loss of appetite, mask-like face, nasal congestion, nausea, painful urination, shuffling walk, sore throat, sores or ulcers on the lips or in the mouth, stomach pain, swollen glands, tightness of throat, tremors in extremities, uncontrolled chewing movements and movements of the arms and legs, unpleasant breath odor, unusual bleeding or bruising, fatigue or weakness, vomiting of blood, and jaundice. Symptoms of an overdose include: change in consciousness, irregular heartbeat, loss of consciousness, seizures, severe sleepiness. Some side effects that may diminish during continuation of treatment include: blurred vision, increased sensitivity of the skin to sunlight, irregular menstrual periods, itching/ rash/ redness/ or discoloration of the skin, jitteriness, and insomnia. Common nervous system side effects include: drowsiness, dyskinesia, akathisia, parkinsonism, and tremor/ tremulousness.[ix]

- Common naproxen side effects include: belching, bruising, difficult or labored breathing, feeling of indigestion, headache, itching skin, large/ flat/ blue/ or purplish patches on skin, chest pain, skin eruptions, stomach pain, swelling, chest tightness, bloating, bloody or black stools, blurred or loss of vision, burning upper abdominal or stomach pain, cloudy urine, constipation, decrease in urine output, disturbed color perception, double vision, irregular heartbeat or pulse, halos around lights, indigestion, loss of appetite, nausea or vomiting, night blindness, light sensitivity, pale skin, skin rash, inflammation of the mouth, troubled breathing with exertion, tunnel vision, unusual bleeding or bruising, fatigue, vomiting material that looks like coffee grounds (clotted blood from stomach bleeding), and weight loss. Rare side effects include: anxiety, back or leg pains, bleeding gums, blindness, blistering/ peeling/ or loosening of the skin, blood in urine or stools, blue lips and fingernails, canker sores, color distortion, chest pain, clay-colored stools, cold sweats, coma, confusion, cool/ pale skin, cough or hoarseness, pink/ frothy sputum from coughing, cracks in the skin, darkened urine, decreased vision, depression, diarrhea, difficult/ burning/ or painful urination, difficult/ fast/ or noisy breathing, difficulty with swallowing, dilated neck veins, dizziness, dry cough, dry mouth, excess air or gas in the stomach, extreme fatigue, eye pain, fainting, fever, fluid-filled skin blisters, flushed/ dry skin, frequent urination, fruit-like breath odor, greatly decreased frequency of urination or amount of urine, hair loss, high fever, hives, increased hunger, sensitivity of the skin to sunlight, increase sweating, increased thirst, irregular breathing, joint or muscle pain, lightheadedness, loss of heat from the body, lower back or side pain, nervousness, nightmares, no blood pressure, no breathing, no pulse, nosebleeds, numbness or tingling in the hands, feet or lips, pain in ankles or knees, pain or burning in the throat, pain in the arms/ jaw/ back/ or neck, pounding in ears, inflammation of the eyelids or around the eyes/ face/ lips/ or tongue, rapid/ shallow breathing, red/ irritated eyes, skin lesions, red-green color blindness, scaly skin, seizures, severe sunburn,

shakiness, thin skin, slurred speech, sneezing, mouth ulcers, unexplained weight loss, watery or bloody diarrhea, weight gain, and jaundice. Symptoms of an overdose include: bleeding under the skin, confusion about identity/ place/ and time, muscle tremors, restlessness, and sleepiness.[x]

- Cyclobenzaprine possible side effects: (common) dry mouth, dizziness, fatigue, constipation, drowsiness, nausea, heartburn; (serious side effects) heart problems (fainting, heart palpitations, confusion, trouble speaking or understanding, loss of control or numbness in face, arms, or legs, trouble seeing in one or both eyes), serotonin syndrome (agitation, hallucinations, seizures, nausea); interactions may occur with benzodiazepines, barbiturates, anti-depressants, verapamil, anticholinergic drugs; guanethidine may make cyclobenzaprine less effective (blood pressure may increase).[xi]

- Corticosteroid possible side effects: glaucoma (elevated pressure in the eye), fluid retention (swelling in lower legs), high blood pressure, issues with mood swings, memory and behavior, confusion or delirium, weight gain (with fat deposits in abdomen, face, and back of neck; long-term side effects may include: cataracts, high blood sugar (may trigger or worsen diabetes), increased risk of infections (bacterial, viral, and fungal microorganisms), thinning bones and fractures (osteoporosis), suppressed adrenal gland hormone production – sever fatigue, loss of appetite, nausea, muscle weakness, thin skin, bruising, slower would healing; inhaled corticosteroids possible side effects: oral thrush, hoarseness; topical application possible side-effects: thin skin, red skin lesions, and acne; injected corticosteroids possible side effects: near the injection site – skin thinning, loss of skin color, intense pain, facial flushing, insomnia, and high blood sugar.[xii]

Section D: Availability of Conventional Medical Therapies

NSAIDs and acetaminophen may be purchased over the counter, for acute pain. Most medications for chronic pain require a prescription from a healthcare provider. Integrative health, (i.e. acupuncture, yoga, dietary changes, etc.) may be suggestions from a healthcare provider to augment pain relief in conjunction with medication.

Section E: Anticipated Benefits from Medical Cannabis

Opioid use and overdose reduction have been observed in states with legal medicinal or recreational cannabis. Recently, New York and Pennsylvania approved Opioid Use as a qualifying condition for medicinal cannabis in order to address the growing opioid epidemic. It should be noted that New York's medicinal cannabis program is modeled after Minnesota's. New York and Pennsylvania both allow patients living with chronic pain to utilize medicinal cannabis. Medicinal cannabis may reduce the use of highly addictive pain killers in Minnesota, while addressing side effects and symptoms of other medication and medical conditions that patients with chronic pain experience. Medicinal cannabis eliminates the risk for overdose mortality and severe side effects in comparison with opioids and other pain killers. Utilizing

cannabinoids within the endocannabinoid system shows promise in assisting with addiction cessation and chronic pain relief. A person cannot overdose from the use of cannabis.

Patients in the following states may use medicinal cannabis to treat chronic pain or conditions associated with pain:

Alaska (any chronic or debilitating disease or treatment for such diseases, which produces: cachexia, severe pain, severe nausea, seizures, muscle spasms), **Arizona** (a chronic or debilitating condition or its treatment that produces one or more of the following: cachexia, severe and chronic pain, severe nausea), **Arkansas** (fibromyalgia, severe arthritis, peripheral neuropathy, intractable pain, severe or persistent muscle spasms), **California**, **Colorado** (a chronic or debilitating disease or medical condition that produces one or more: cachexia, persistent muscle spasms, severe pain), **Connecticut** (sickle cell disease, psoriatic arthritis, complex reginal pain syndrome, intractable spinal spasticity, hydrocephalus with intractable headaches, intractable headache syndromes, neuropathic facial pain, severe rheumatoid arthritis, fibromyalgia, post-herpetic neuralgia), **Delaware** (a chronic or debilitating disease or medical condition that produces one or more of the following: cachexia, severe, debilitating pain that has not responded to prescribed medication in three months, intractable nausea, seizures, muscles spasms), **District of Columbia**, **Florida**, **Georgia** (severe sickle cell disease, severe peripheral neuropathy, intractable pain), **Hawaii**, **Illinois**, **Iowa** (high-CBD cannabis extracts with no more than 3% THC only), **Louisiana** (spasticity, muscle spasms, intractable pain), **Maine**, **Maryland**, **Massachusetts**, **Michigan**, ***Minnesota*** (allows severe pain associated with cancer or terminal illness with life expectancy of less than one year, intractable pain), **Missouri**, **Montana**, **Nevada**, **New Hampshire**, **New Jersey**, **New Mexico**, **New York**, **North Dakota**, **Ohio** (chronic, severe, and/or intractable pain), **Oklahoma**, **Oregon**, **Pennsylvania** (severe, chronic, or intractable pain), **Rhode Island**, **South Carolina**, **Vermont**, **Virginia**, **Washington** (cramping, muscle spasms, spasticity, intractable pain/ pain not relieved by standardized medications), and **West Virginia**.[xiii]

Population Level Benefits

- Reduce number of hospitalizations related to opioid overdose and for patients prescribed opioids;

- Save lives by reducing morbidity and mortality rates related to opioid overdose;

- Give Minnesotans suffering from chronic pain a treatment option that is more widely available, safer (less side-effects/ less stress on liver), and an improved quality of life versus standardized analgesic therapy;

- Reduce the number of patients fined or incarcerated for cannabis use utilized to self-treat pain+ symptoms in Minnesota.

Individual Level Benefits

- Alleviate chronic pain symptoms, with a safer alternative than pharmaceutical pain medications;

- Reduce symptoms of opioid side-effects or withdrawal – lessen nausea, help appetite, promote rest / sleep;

- Improve sense of emotional control by reducing craving anxiety (addiction cessation);

- Improve success / retention rates for people in medication assisted treatment (methadone, buprenorphine (Suboxone), Naltrexone, Vivitrol);

- Prevent people who use cannabis to support themselves in recovery from doing so illegally and potentially going to jail;

- Opioid-sparing: medicinal cannabis therapy in conjunction with opioid use, may allow patients to reduce their dosage of opioids without losing pain relief efficacy.

Section F: Scientific Evidence of Support for Medical Cannabis Treatment

Cannabis as a Substitute for Opioid-based Pain Medication; Patient Self-Report

A journal published by *Cannabis and Cannabinoid Research* analyzed a self-reported patient survey with a sample size of 2897 participants. Prescription drug overdoses are the leading cause of accidental death in the United States. Cannabis can be an effective treatment for pain, greatly reduces the chance of dependence, and eliminates the risk of fatal-overdose compared to opioid-based medications.

34% of the sample analyzed reported using opioid-based pain medication in the past six months. 97% of the sample "strongly agreed/agreed" that they are able to decrease the number of opiates they consume when they also use cannabis, and 81% "strongly agreed/agreed" that taking cannabis by itself was more effective at treating their condition than taking cannabis with opioids. 92% of the sample "strongly agreed/agreed" that they prefer cannabis to opioids for the treatment of their condition and 93% "strongly agreed/agreed" that they would be more likely to choose cannabis to treat their condition if it were more readily available. In addition, 80% of patients reported that cannabis by itself was more effective than their opioids.

When discussing the implications of this study from the macro level, there have been three previously published indicators of public health changes in states that permit medical cannabis: decreases in opioid related mortality, decreases in spending on opioids, and a decrease in traffic fatalities. At the micro level, there is a great deal of individual risk associated with prolonged use of opioids and perhaps even non-opioid-based pain medications.[xiv]

Do Medical Marijuana Laws Reduce Addictions and Deaths Related to Pain Killers?

Many medical marijuana patients report using marijuana to alleviate chronic pain from musculoskeletal problems and other sources. A study by the Rand Corporation looks at positive impacts of medical marijuana laws and finds that there may be a reduction in the harms associated with opioid pain relievers in states with liberal medical marijuana laws. The research looks at two factors for determining opiate addiction: admission to addiction treatment programs, and opioid overdoses. The research finds that states permitting medical marijuana dispensaries experience a relative decrease in both opioid addictions and opioid overdose deaths compared to states that do not. Findings suggest that broader access to medical marijuana may have the potential benefit of reducing abuse of highly addictive painkillers used for both medical and nonmedical purposes.

Based on treatment admission data, the research finds no significant change in admissions for states with restrictive medical cannabis laws, such as Minnesota. However, in states with greater accessibility, the research has found a significant decrease in individuals seeking treatment for opiate misuse and addiction, with an average decrease of 18.5%. When only looking at data for individuals seeking treatment on their own volition (not being referred by the criminal justice system), the research finds a reduction of 11%. Based on an analysis of opiate-overdose related mortality and medical cannabis laws, the research finds an inconsequential impact for states like Minnesota. However, with states with more permissive medical marijuana laws, the researchers find a 20% reduction in overdose-related fatalities.

The research shows a significant decrease in medical and non-medical opiate use in states where legal cannabis is available, suggesting that it is being used as an alternative for pain treatment and for managing addictions. The reduction in opiate-related fatalities suggests that it is a safer alternative, and that further research and expansion of access should be considered in the context of today's opiate epidemic.[xv]

Impact of Medical Marijuana Legalization on Opioid Use, Chronic Opioid Use, and High-risk Opioid Use

In states where marijuana is legalized for medical use, chronic pain is one of the approved indications and a majority of persons acquiring medical marijuana do so for pain management. Medical marijuana patients report a higher likelihood of substituting or reducing opioid use while managing their pain with medical marijuana.

The objective of this study was to determine the association of medical marijuana legalization with prescription opioid utilization. Authors looked at a random 10% sample of patients from the IMS
Lifelink+ database from 2006 to 2014. IMS Lifelink+ is a nationally representative database of commercially insured patients. The data included enrollment information of 4,840,562 adults 18 years and older and was comprised of inpatient, outpatient, and insurance-funded pharmacy claims.

The results of this study indicate that legalizing medical marijuana is associated with lower use of opioids and opioids used chronically for cancer patients and cancer-free groups with chronic pain.

While this study highlights that making marijuana legally available may mitigate the use of opioids, it does not offer any insights as to the efficacy of marijuana in pain management.

Overall, results suggest that Medical Marijuana Legalization could be one policy tool that may decrease opioid use, in our current situation with limited alternative pain management options. However, the study suggests that more research on the health benefits of marijuana.[xvi]

Medical Cannabis Access, Use, and Substitution for Prescription Opioids and Other Substances: A Survey of Authorized Medical Cannabis Patients

In research published in the *International Journal of Drug Policy*, researchers survey Canadian medical cannabis patients to determine usage trends, issues of accessibility, and impacts, especially surrounding the issue of medication substitution. The researchers found that 63% of patients served by Canadian cannabis company Tilray use cannabis as a substitute for traditional pharmaceutical medications. Of the 63% of patients, 32% substituted cannabis for opioids, 16% for benzodiazepines, and 12% for antidepressants. The most common reason for medication substitution cited in the survey was *"less adverse side effects"*. Respondents report that medical cannabis is incredibly effective at symptom relief, especially around pain-related conditions, with 95% reporting that medical cannabis "often" or "always" relieves their symptoms. The authors argue that in light of the growing rates of morbidity and mortality associated with prescription medications, particularly opiates, cannabis can play a significant role in reducing the health burdens of problematic prescription drug use.[xvii]

Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in the United States, 1999-2010

This study discusses the correlation between the introduction of medical cannabis laws and the decrease of opioid analgesic (painkiller) overdose mortality in the United States from 1999 to 2010. In an analysis of death certificate data from 1999 to 2010, it was found that medical cannabis laws were associated with a mean 24.8% lower annual rate of opioid analgesic overdose deaths, compared to states without laws. In 2010, this translated to an estimated 1729 fewer deaths than expected. This finding persisted when excluding intentional overdose deaths (i.e. suicide), and when including all deaths related to heroin, even if no opioid analgesic was present. These findings indicate that 1) medical cannabis laws are associated with lower opioid analgesic overdose mortality among individuals using opioid analgesics for medical purposes and 2) lower rates of opioid analgesic overdose mortality were not offset by higher rates of heroin overdose mortality.

Although evidence for the analgesic properties of cannabis is limited, it may provide analgesia for some individuals. In addition, patients already receiving opioid analgesics who start medical cannabis treatment may experience improved analgesia and decrease their opioid dose, thus potentially decreasing their dose-dependent risk of overdose. Finally, if medical cannabis laws lead to decreases in polypharmacy - particularly with benzodiazepines - in people taking opioid analgesics, overdose risk would be decreased.[xviii]

Medical Marijuana Laws Reduce Prescription Medication Use in Medicare Part D

The research by Bradford and Bradford explores correlations between the increased accessibility of medical marijuana on Medicare Part D spending. The study utilizes publicly accessible physician prescribing data across states with and without medical marijuana laws to determine what conditions the medical community is recommending cannabis over FDA approved drugs for treatment.

Bradford and Bradford find the most significant reduction in the number of daily doses for FDA approved medications for pain management (primarily, opiate-based painkillers), with an average reduction of 1,826 daily doses prescribed per physician annually in states with medical marijuana laws. Researchers also found a significant reduction in prescriptions for treating anxiety, nausea, psychosis, and seizures, modest reductions in prescriptions for treating depression and sleep disorders, and insignificant impacts on prescriptions for glaucoma and spasticity.

Researchers found that the reduction of prescription medication use had significant cost savings for government healthcare programs. The research estimates that annual savings in Medicare Part D nationally were $165.2 million in 2013 as a result of changed prescribing behaviors in states which have legalized medical marijuana, and that further cost reductions would appear when researching other government aid programs, or with the expansion of medical marijuana access in other states.[xix]

Rationale for Cannabis-Based Interventions in the Opioid Overdose Crisis

The Lucas study discusses the substitution effect: a theory that examines how the availability of one good can impact and influence the use of other goods. Observational and epidemiological studies have found that medical cannabis programs are associated with a reduction in the use of opioids and associated morbidity and mortality.

Recently, a retrospective survey of Michigan patients concluded that medical cannabis use was associated with a 64% decrease in opioid use, decreased side effects of medications, and an improved quality of life; many research subjects in surveys around the country found that in those that report opioid-based pain medications, up to 97% "strongly agreed/agreed" that they were able to decrease their opioid use when using medical cannabis. In a study done in 2011 of cannabinoid-opioid interactions, it was noted that cannabinoids and opioids share many similar therapeutic and pharmacodynamic properties, including analgesic (pain-killing) effects; the potential to induce hypothermia, sedation, and hypotension; as well as inhibition of intestinal motility and locomotor activity.

This paper proposes three important windows of opportunity for cannabis for therapeutic purposes (CTP) to play a role in reducing opioid use and interrupting the cycle towards opioid use disorder, the first being prior to opioid introduction in the treatment of chronic pain. Research suggests that four out of five heroin users report their opioid use began with prescription opioids. If physicians and patients have access to a safer, less addictive alternative for pain control like cannabis, introducing it into the course of care as a first line treatment could potentially prevent the opioid overuse cycle from starting by not only reducing the risk pain patients would have of developing opioid use disorders, but also by reducing the overall supply of pharmaceutical opioids on the black market. The second window of opportunity for CTP is as

an opioid reduction strategy for those patients already using opioids, as cannabis augments the pain relieving potential of opioids, and can re-potentiate their effects, thereby reducing the need to increase the dosage of opioid pain medications, and the third is as an adjunct therapy to methadone or suboxone treatment in order to increase treatment success rates as a part of opioid replacement therapy (ORT).[xx]

Recreational Cannabis Legalization and Opioid-Related Deaths in Colorado, 2000-2015

The American Journal of Public Health analyzed the effects of recreational cannabis legalization on opioid-related deaths in Colorado. This study used an interrupted time-series design to analyze monthly counts of opioid deaths from January 2000 through December 2015. Rates of opioid deaths were analyzed and compared before and after Colorado stores began selling recreational cannabis. Colorado's legalization of recreational cannabis sales and use resulted in a 0.7 deaths per month reduction in opioid-related deaths. This reduction represents a reversal of the upward trend in opioid-related deaths in Colorado. It can be concluded that legalization of cannabis in Colorado was associated with short-term reductions in opioid-related deaths.[xxi]

Substituting Cannabis for Prescription Drugs, Alcohol, and Other Substances Among Medical Cannabis Patients: The Impact of Contextual Factors

The research done in this article discusses substitution of cannabis for prescription drugs, alcohol and other substances (mainly illicit drugs) for medicinal purposes using the substitution effect: a theory that examines how the availability of one good can impact and influence the use of other goods. Several studies have identified analgesia (pain killing) as a prominent reason for using cannabis for therapeutic purposes (CTP), and cannabis has several potential advantages relative to widely used opiate analgesics (pain killers) including fewer side-effects, a lower risk of dependence, and no possibility of fatal overdose.

The participants in this study were 473 self-identified current users of CTP drawn from the Cannabis Access for Medical Purposes Survey (CAMPS). The survey involved 414 forced choice and open-ended items that queried demographic information, medical conditions and symptoms, and patterns of cannabis use. The results of this study are consistent with a growing body of research suggesting that cannabis use may play an important role in the use of prescription drugs, alcohol and illicit substances.

The high rate of substitution for prescribed substances, particularly among patients with pain-related conditions, suggests that further research into cannabis/cannabinoids as a potentially safer substitute for or adjunct to opiates is justified, and adds to research suggesting this phenomenon is robust across samples. The finding that cannabis was substituted for alcohol and illicit substances suggests that the medical use of cannabis may play a harm reduction role in the context of use of these substances and could have implications for substance use treatment approaches requiring abstinence from cannabis in the process of reducing the use of other substances. Taken together, these findings provide additional evidence for the widespread nature of cannabis substitution and suggest potentially fruitful avenues for further research that elucidates the complex interaction between cannabis use and the use of other substances.[xxii]

Cannabis Abuse is Not a Risk Factor for Treatment Outcome in Methadone Maintenance Treatment: A 1-year Prospective Study in an Israeli Clinic

The objective of this study was to identify the prevalence of cannabis use in an Israeli methadone maintenance treatment (MMT) clinic, if cannabis use changes over time during MMT, if cannabis use is related to measurable outcomes of retention rate and the abuse of drugs, if the use of cannabis is connected to psychopathology/ HIV/HCV risk-taking and infectious diseases, if cannabis users (CUs) have a different psychosocial and demographic profile than nonusers (NCUs), and if cannabis use is part of a polydrug tendency or a distinct substance of abuse. Patients in the study had completed one year of MMT, underwent random urine analysis for various drugs of abuse, responded to self-report questionnaires, interviews, and hepatitis C & HIV testing. It was found that CUs did not increase use, significantly, over a one-year period. CUs were found to be more often polydrug users than NCUs, but CUs did not exhibit signs of increased psychological distress, infectious diseases, did not leave MMT earlier than NCUs, and did not engage in more HCV/ HIV risk-taking behavior. It was concluded that no specific influences of cannabis use on psychological and medical conditions of MMT patients were observed.[xxiii]

Cannabis as Secondary Drug is Not Associated with a Greater Risk of Death in Patients with Opiate, Cocaine, or Alcohol Dependence

The objective of this study from 2017 was to assess the influence of cannabis use as secondary drug on mortality of patients with other substance use disorders. Participants were patients with opiate, cocaine, or alcohol dependence that were admitted to detoxification from 2001 to 2010 at a teaching hospital in Badalona, Spain. During admission into the study, patients' sociodemographic characteristics, drug use, medical comorbidities, and urine drug screens were obtained. A total of 474 patients with a median age of 38 were admitted. Positive urinary cannabis was detected in 168 or 38% of patients. Prevalence of cannabis use among patients with opiate, cocaine, or alcohol dependence was 46.5%, 42.9%, and 25.2%. There was no association between cannabis detection and overall mortality in the study's regression models, but AIDS-related deaths were more frequent in patients that were positive for cannabis. (If patients with compromised immune systems are smoking cannabis from the illicit market, patients may be inhaling bioaerosols, mold, fungus, pesticides, heavy metals, or other contaminants that aren't tested on cannabis from the illicit market). The study concluded that cannabis use did not confer an increased risk of death in patients with severe opiate, cocaine, or alcohol dependence.[xxiv]

An Experimental Randomized Study on the Analgesic Effects of Pharmaceutical-grade Cannabis in Chronic Pain Patients with Fibromyalgia

A 2018 randomized, placebo-controlled study by scientists on behalf of the International Association for the Study of Pain, examined the effects of inhaled pharmaceutical grade cannabis

in 20 chronic pain patients who are living with fibromyalgia (FM). Four different cannabis varieties, with exact knowledge of THC and CBD content, (one variety with no CBD or THC content/ placebo), were utilized in this experiment. The authors indicate that CB 1 and CB 2 receptors are present in the nervous and immune system, with CB 1 receptors mainly located in the central nervous system, and CB 2 receptors are mainly found on immune cells. THC is a partial CB 1 receptor agonist, while CBD (non-psychoactive cannabinoid) is a CB 2 receptor antagonist and an agonist at the 5HT receptors (serotonin receptors/ found in the central and peripheral nervous system) and vanilloid receptors type 1 (receptors that function as detectors and regulators of body temperature; with similar efficacy as capsaicin). The researchers examined the relief of experimental pressure pain, electrical pain, spontaneous pain (mainly endpoints), and the subjective and psychotropic effects of inhaled cannabis. This study was a single-center, double-blind, placebo-controlled, 4-way crossover study, with acronym Spirocan, was performed at the Anesthesia and Pain Research Unit of the Department of Anesthesiology at LUMC. Announcements of the study through local newspapers ant the website of the association of patients with FM, were utilized to secure 20 female patients living with FM. Exclusion criteria included: less than 18 years of age, any medical, neurological, or psychiatric illness, use of strong opioids or other painkillers except paracetamol and/or ibuprofen, benzodiazepine use, any known allergies to study medication, illicit drug or alcohol use, recent use of cannabis, pregnancy, breast feeding, and the presence of pain syndromes other than FM. The patents' urine was screened for illicit drug use on the morning of each of the four study days; in case of a positive test, the patient was excluded from the study. Patients were instructed to not eat six hours and drink for at least two hours before the study visit; no caffeine was allowed for 24 hours before the study visit. Patients visited the research unit on five days: first day – initial medical screening and instruction in the inhalation process, followed by the next few days of cannabis research where the patients received one of four possible cannabis varieties (in random order) with at least two weeks between visits. The four cannabis varieties developed in the Netherlands include:

(1) Bedrocan: 22% THC (220mg per gram) and less than 1% CBD.
(2) Bediol: 6.3% THC (63mg per gram) and 8% CBD (80mg per gram).
(3) Bedrolite: 9% CBD (90mg per gram) and less than 1% THC.
(4) Placebo: derived from the Bedrocan cannabis variety after selective removal of the cannabinoids by solvent extraction. After removal of the cannabinoids, the specific terpene profile (responsible for smell and taste) was restored in a subsequent manufacturing step. Consequently, the placebo had a moisture content and terpenoid profile matching the active variety (Bedrocan).

Tests were conducted on the study medication (cannabis varieties) to ensure proper cannabinoid profile, water content, and unwanted elements (adulterants, microbes, heavy metals, and pesticides). During the study, all varieties were refrigerated at 2 to 8° C in triple-layer laminated foil pouches. Patients were dosed with cannabis vapor. All cannabinoids are mostly present in their acid forms; application of heat is required for decarboxylation of the cannabinoid acids into their active forms. All four varieties were vaporized using the Volcano Medic vaporizer – a safe and reliable method of intrapulmonary administration of cannabinoids; plant material was heated to 210° C to allow for conversion of the THC and CBD acids into THC and CBD vapor for inhalation. On each occasion, blood was drawn before inhalation and every 5, 10, 20, 30, 40, 50, 60, 90, 120, and 180 minutes after the beginning of inhalation. All subjects rated their FM pain on an 11-point visual analogue scale (from 0 = no pain to 10 = most severe pain imaginable) at

baseline (before cannabis inhalation) and at 1, 2, and 3 hours after inhalation. A pressure pain test and an electrical pain test were performed. The Bowdle questionnaire was used to evaluate psychedelic effects (drug high, alterations in internal perception, and alterations in external perception). The Bond and Lader questionnaire was used to calculate alertness (alert, strong, clear-headed, coordinated, energetic, quick-witted, attentive, proficient, and interest), contentment (contented, happy, amicable, gregarious, and tranquil), calmness (calm and relaxed); a high score indicates impairment. Randomization was performed by the pharmacy using a computer-generated randomization list. The researchers and patients remained blinded until data analysis was complete (June 2018). The study was independently monitored ensuring that all good clinical practice requirements were met. More patients responded to Bediol (containg high doses of THC and CBD) with a decrease in spontaneous pain by 30%; the two other varieties and similar responses to the placebo variety; the reduction in spontaneous pain scores was correlated with the magnitude of drug high; pressure pain threshold increased significantly in patients treated with Bedrocan and Bediol; Bedrolite (high in CBD) was devoid of analgesic activity in any of the spontaneous or evoked pain models; CBD increased plasma concentrations of THC but had an antagonistic effect on analgesia when combined with THC.

Limitations of the study are the short treatment period and lack of validation of the experimental measures in FM. In conclusion, the analgesic efficacy of active treatment was limited to cannabis varieties that contained THC, and was observed exclusively in the evoked pressure pain model. None of the active variety treatments were effective in reducing spontaneous pain scores more than placebo. The researchers suggest that further studies are needed to assess efficacy and safety in clinical trials with prolonged treatment periods and explore the role of psychotropic effects in the development of pain relief. A link to the recorded data charts and graphs:

https://download.lww.com/wolterskluwer_vitalstream_com/PermaLink/PAIN/A/PAIN_2018_12_13_DAHAN_PAIN-D-18-00813_SDC1.pdf [xxv]

Cannabinoids and Pain: New Insights from Old Molecules

A 2018 review from the University of Belgrade examined studies that included medical cannabis as treatment for chronic pain (including safety in short and long-term treatments, and adverse side effects) in human and animal models. The National Academy of Sciences, Engineering and Medicine (NASEM) has evaluated more than 10,000 scientific abstracts and established that there is "conclusive or substantial evidence" for the use of cannabis in treating chronic pain in adults. As well as, "moderate evidence" that cannabinoids are effective in improving short-term sleep outcomes in patients with chronic pain. Another meta-analysis of individual patent data from five randomized trials (178 participants) presents evidence that inhaled cannabis may provide short-term reductions in chronic neuropathic pain (diabetes, HIV, trauma) for one in five-six patients; in these trials, THC (9-tetrahydrocannabinol) content ranged from 3.5 to 9.4%. A dose-related effect of cannabis was found, with higher THC contents producing more pronounced pain relief. In other studies, pain relief was found with lower vaporized/ inhaled THC concentrations (1-7%) in randomized, placebo-controlled, double-blind crossover studies from 2015 and 2016. It was found that higher plasma levels of THC and/or the THC metabolite significantly correlated with improvements in clinical symptoms of pain. It was

noted that a systemic review of eleven randomized controlled studies involving 1219 patients in which oral synthetic cannabinoids (dronabinol, nabilone, and nabiximols) were compared with standard pharmacological and/or non-pharmacological treatments or placebo in patients with neuropathic pain (including MS). Studies showed that oral, synthetic cannabinoids are modestly effective in reducing chronic neuropathic pain, and that a minimum of two weeks treatment is required for pain relief. Synthetic cannabinoids were not adequate in reducing pain in patients with rheumatic diseases. Authors noted that more research with controlled clinical trials on the use of inhaled cannabis for the treatment of pain is needed. It was also noted that inhaled cannabis could be effective against chemotherapy-induced neuropathic pain in patients with cancer. The analgesic effect is experienced shortly after the first breath and can be maximized by self-titration (patients adjust cannabis dosage themselves). However, self-titration of oral cannabis is not recommended due to the unpredictable appearance of side effects. The main disadvantage of smoking cannabis is inhalation of combustion byproducts with possible adverse effects in the respiratory tract (NASEM). Therefore, vaporization is considered a better alternative for the inhalation of cannabis. About 25–27% of the available THC becomes available to the systemic circulation after inhalation. In chronic-pain patients on opioid therapy, vaporized cannabis increases the analgesic effects of opioids without affecting significantly the plasma opioid levels suggesting that the effects are probably due to pharmacodynamic (drug affects organism) rather than pharmacokinetic (organism affects drug) interactions.

2017 findings from available short-term use (days to weeks) of cannabis/cannabinoids for pain treatment is acceptable; short-term use was associated with an increased risk of adverse events, but were mostly mild and well tolerated. The psychoactive effects of inhaled cannabis were dose-dependent, rare, and mild in intensity. Oral synthetic cannabinoids treatment was associated with limited tolerability; producing more cannabinoid-related side effects than placebo, but were mild to moderate and short-lived. One controlled (open-label) study has evaluated the safety and tolerability of cannabis (a standardized botanical cannabis product that contains 12.5% THC) used for one year in 215 patients (from seven clinics across Canada) with chronic non-cancer pain, in 2015. The authors concluded that cannabis is tolerated well and relatively safe when used long-term. The beneficial effects persisted over time, indicating that cannabis use for over one year does not induce analgesic tolerance. Authors note that taking into account all long-term safety studies conducted up until 2017, appear to show that cannabis (natural plant material) is better tolerated than oral synthetic cannabinoids. By inhalation, cannabis (THC) avoids the first passage metabolism in the liver, and the effect of inhaled cannabis is proportionate to the plasma levels of THC.

In conclusion, a recent meta-analysis of clinical trials of medical cannabis for chronic pain found substantial evidence encouraging its use in pharmacotherapy of chronic pain. Also, it was shown that medical cannabis may only moderately reduce chronic pain, similar all other currently available analgesic drugs. Inhaled (smoked or vaporized) cannabis is constantly effective in reducing neuropathic pain and this effect is dose-related and can be achieved with a concentration of cannabis THC lower than 10%; compared to oral cannabinoids, the effect of inhaled cannabis is more rapid, predictable and can be titrated. Compared to inhaled cannabis, the effectiveness of oral synthetic cannabinoids in reducing the sensory component of neuropathic pain seems to be less convincing and oral synthetic cannabinoids in general may be

less tolerable. However, oral synthetic cannabinoids treatment has suggested improvement in sleep, quality of life, and patient satisfaction. Current evidence supports the use of medical cannabis in the treatment of chronic pain in adults. Monitoring and follow-up of patients is obligatory. Studies are linked in the attached review.[xxvi]

Cannabinoids in Pain Treatment: An Overview

A 2018 review by healthcare practitioners from Stanford and the University of Iowa provide a clinical overview focusing on pain management with medical cannabis. The mechanisms of the endocannabinoid system, along with the pharmacology of cannabinoids, are examined. Even though more than 100 phytocannabinoid compounds have been identified, only the two most explored phytocannabinoids, delta 9-tetrahydrocannabinol (THC) and cannabidiol (CBD), are discussed here. Additionally, *Cannabis sativa* and *Cannabis indica* are two species of cannabis that are studied for pharmacologic use and discussed further in this manuscript.

The endocannabinoid system (ECS) regulates receptors and are referred to as cannabinoid receptor type 1 (CB1) and cannabinoid receptor type 2 (CB2). The phytocannabinoids and endocannabinoids bind to these receptors to activate a response. CB1 receptors are found in the brain, such as the cerebellum, brainstem, and limbic areas. They are also found in the spinal cord, the trigeminal ganglion, macrophages, mast cells, and epidermal keratinocytes. The CB1 receptors regulate the cannabinoid neurotransmitter effects within the central nervous system. CB2 receptors are mostly found in the periphery in the hematopoietic stem cells, macrophages in the spleen, and other immune cells.

These receptors function by:

(1) regulating neuroimmune interactions protecting neurons from pathogens

(2) interfering with inflammatory mediators that increase the sensitivity of sensory neurons to noxious stimuli

(3) responding to peripheral nerve injury

THC via oral route:

Oral use of THC creates a slow and erratic absorption. First-pass hepatic metabolism reduces the bioavailability of oral THC because much of the THC is metabolized before it reaches the sites of action. The onset of action is 30 minutes to 1 hour, with a peak effect of 24 hours. The duration of the psychoactive properties are 4-6 hours and duration of the appetite stimulant effect is greater than 24 hours.

THC via inhalation:

When THC is inhaled, approximately 50% of the THC in an herbal cannabis cigarette is absorbed through the lungs and rapidly enters the bloodstream to affect the brain. The peak plasma concentration can be within 3-10 minutes. Ninety percent of THC is distributed to the plasma. The lipid solubility of THC causes the drug to rapidly penetrate the fat tissues and highly vascularized tissues. This means that greater amounts of the drug are found in the tissue than circulating in the plasma.

CBD:

The pharmacokinetics and pharmacodynamics of CBD are comparable to THC. The peak plasma concentration is dependent on route, with an average half-life of 24 hours during intravenous administration of CBD. There is similarity in metabolism except for a higher percentage of unchanged CBD excreted in the feces.

In a 2018 Cochrane Database review examining cannabis-based medicines for chronic neuropathic pain in adults, the authors concluded that potential benefit outweighs potential harm for its use in chronic neuropathic pain. A recent systematic review of 19 preclinical and 9 clinical studies concluded that preclinical studies provided robust evidence of the opioid-sparing effect (reduced opioid doses without loss of analgesic efficacy) of cannabinoids, whereas only one of the nine clinical studies identified provided very low-quality evidence of such an effect. Over the past several years there has been discussion regarding the use of medical cannabis as a solution to the opioid crisis; one study found an association between the decrease in opioid mortality and cannabis legalization in states that have medical cannabis legislation. The discovery of the endocannabinoid system as a modulator of nociception (the sensory nervous system's response to certain harmful or potentially harmful stimuli) has expanded the wealth of research opportunities for modulating this system and to expand the role of phytocannabinoids in health care/ pain management.[xxvii]

Effect of Adding Medical Cannabis to Analgesic Treatment in Patients with Low Back Pain Related to Fibromyalgia: An Observational Cross-over Single Centre Study

In a 2019 article from *Clinical and Experimental Rheumatology*, observational cross-over study, 31 patients were screened, treated with three months of standardized analgesic therapy (SAT): 5mg of oxycodone hydrochloride equivalent to 4.5mg oxycodone and 2.5mg naloxone hydrochloride twice a day and duloxetine 30mg once a day. Following three months of SAT, the patients could opt for medical cannabis treatment (MCT) and were treated for a minimum of six months. Patients reported outcomes included: FIQR (Revised Fibromyalgia Impact Questionnaire), VAS (Visual Analog Scale), ODI (Oswestry Disability Index), and SF-12 (12-Item Short Form Survey) and lumbar range of motion (ROM) was recorded using the modified Schober test. A recent meta-analysis has concluded that most randomized clinical trials of

cannabinoids demonstrate that in fifteen of the eighteen trials that met the inclusion criteria demonstrated a significant analgesic effect of cannabinoid as compared with placebo without serious adverse effects. Adverse effects most commonly reported were generally well tolerated, mild to moderate in severity and led to withdrawal from the studies in only a few cases. Previous survey of 1300 patients indicate that MCT is more effective than SAT in treating fibromyalgia (FM), with 60 percent of respondents describing SAT as ineffective. Endocannabinoid deficiency has been suggested to lead to the ameliorative effect of MCT in fibromyalgia, a disease in which endocannabinoid tone appears dysregulated. All humans possess an underlying endocannabinoid tone that reflects of levels of anandamide. If endocannabinoid function were decreased, it follows that a lowered pain threshold would be operative, along with derangements of digestion, mood, and sleep among the almost universal physiological systems sub served by the endocannabinoid system. Participants who met the inclusion criteria were recruited from an orthopedic pain clinic. One of the authors conducted a thorough physical examination that included neurological testing, postural assessment, joint mobility, strength, etc. The inclusion criteria were:

1. Symptomatic LBP of more than 12 months, duration between T12 and the gluteal fold.

2. History of symptomatic FM for at least 12 months.

3. Failure of opiate therapy of at least 12 months.

Exclusion criteria included:

1. A self-reported history of malignancy.

2. Improvement in pain to less that 4 VAS after opiate therapy.

3. Refusal to undergo medication by duloxetine and opiates.

4. Inability to sign an informed consent form allowing the data to be used for research purposes.

5. Severe cardiovascular disease preventing MCT administration according to a cardiologist.

6. Severe psychiatric disease preventing MCT administration according to a psychiatrist.

Participants were not asked to refrain from receiving other forms of therapy and analgesics during the study. Medications consumption decreased following MCT therapy. The decrease was more marked following 6 months of MCT therapy. Adverse events during MCT therapy included: red eyes in 28 of 31 patients, increased appetite in five of 31 patients, and sore throat in three out of 31 patients. The adverse events were mild and did not require MCT alteration. Adverse events during SAT therapy included depression in two out of 31 patients, loss of appetite in eight out of 31 patients, hemorrhoids in four out of 31 patients, constipation in 15 out of 31 patients, zombielike feeling in five out of 31 patients. One patient had to be operated for hemorrhoids and in another six patients SAT was stopped due to side effects. MCT was more tolerated, with less severity of adverse effects than SAT. This study appears to indicate that

supplementation of analgesic therapy with MCT alleviate pain in FM patients suffering from lower back pain (LBP), as well. The decrease in opiate consumption is also an advantage of the MCT therapy.[xxviii]

Low-dose Vaporized Cannabis Significantly Improves Neuropathic Pain

It is common knowledge that pharmacologic management of neuropathic pain can be challenging. With the lack of pharmacology alternatives, this study looks at validating how unconventional analgesics such as cannabis may address unmet needs. It is noted that more than a decade ago, the National Institutes of Health (NIH) Workshop on the Medical Utility of Marijuana concluded that neuropathic pain is a condition in which currently available analgesics are, at best, marginally effective, and suggested that cannabis might hold promise for many sufferers of this malady.

This was a randomized controlled trial approved by the Human Subjects Institutional Review Boards at the UC Davis Medical Center (UCDMC) and the Veterans Affairs of Northern California Health Care System (VANCHCS). The cannabis was harvested at the University of Mississippi under the supervision of the National Institute on Drug Abuse (NIDA). The study used medium dose (3.53% delta-9-THC), low-dose (1.29% delta-9-THC), and placebo cannabis. The dosing relationship for analgesia, psychoactive and cognitive effects was looked at.

Participants were scheduled for three, 6-hour experimental sessions over 3-14 days. Assessment was made based upon 13 different scales and assessment measures; at baseline and hourly up to 6 hours after administration of vaporized cannabis.

The results indicated that the number needed to treat (NNT) to achieve 30% pain reduction was 3.2 for placebo vs. low dose, 2.9 for placebo vs. medium dose and 2.5 for medium vs. low dose. This study adds to a growing body of literature supporting the use of cannabis for the treatment of neuropathic pain. It provides additional evidence of the efficacy of vaporized cannabis as well as establishes low dose cannabis (1.29%) as having a favorable risk-benefit ratio.[xxix]

The effectiveness of cannabinoids in the management of chronic nonmalignant neuropathic pain: a systematic review

This study is a systematic review that assessed the effectiveness of cannabis extracts and cannabinoids in the management of chronic nonmalignant neuropathic pain (Pain arising from damage to the central or peripheral nervous system I.e. MS, Chemotherapy, Alcoholism).

It was carried out by database search of three evidence-based medicine sources: Medline, PubMed, Embase, and Web of Science, through communication with the Canadian Consortium for the Investigation of Cannabinoids (CCIC), and by searching printed indices from 1950. Only randomized placebo-controlled trials (RCTs) involving cannabis and cannabinoids for the treatment of chronic nonmalignant pain were selected. Outcomes considered were reduction in pain intensity and adverse events.

Of the 24 studies that examined chronic neuropathic pain, 11 studies were excluded. The 13 included studies were rated using the Jadad Scale to measure bias in pain research. Evaluation of these studies suggests that cannabinoids may provide effective analgesia in chronic nonmalignant neuropathic pain patients with conditions that are refractory to other treatments. Further high-quality studies are needed to assess the impact of the duration of the treatment as well as the best form of drug delivery.[xxx]

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

The results from this 239-question cross-sectional survey, looked to gather comprehensive information on cannabis use from registered Canadian medical cannabis patients.

This study performed in 2017, provides a unique perspective on the use of a standardized, government regulated source of medical cannabis by patients. 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.[xxxi]

Medical Cannabis: Effects on Opioid and Benzodiazepine Requirements for Pain Control

This was a single-center, retrospective cohort study looking at the use of medical cannabis for intractable pain and the impact on the daily number of opioids and benzodiazepines patients use. A secondary objective of this study was to determine if there are any observable differences in pain scores between the different currently available medical cannabis products and the impact on changes in pain scores over time. 224 patients were screened with the outcomes observed using the patient-reported pain, enjoyment, and general activity (PEG) screening tool.

Some evidence exists to support the use of medical cannabis for pain, which may reduce the amount of analgesics required for pain control, such as opioids and benzodiazepines. Although benzodiazepines are not FDA approved for the indication of pain, there is some limited evidence that they may be useful for some chronic pain conditions, and they are commonly co-prescribed with opioids. Despite regulatory barriers and other limitations to adequate research, published evidence variably supports medical cannabis for pain.

Information for this study was obtained through the patient's electronic health record and the Medical Cannabis Registry. All available daily doses of morphine and diazepam (based upon milligram equivalent measure) were calculated as baseline at the start of the study and at 3 months and 6-month intervals.
The results show a statistically significant decrease in morphine milligram equivalents from baseline to both 3 and 6 months. With the results being non–statistically significant with the Diazepam milligram equivalents from baseline to 3 and 6 months.

Over the course of this 6-month retrospective study, it was found that patients using medical cannabis for intractable pain were able to decrease morphine dose. This result adds to the currently mixed body of evidence suggesting that medical cannabis may be effective for treating pain, though because this study was performed on a retrospective bases further prospective studies are needed to confirm or deny the opioid-sparing effects. With limited data guiding the use of medical cannabis use for chronic pain and, given the high percentage of patients using the product for intractable pain, the importance of further research cannot be overstated.[xxxii]

Impact of Medical Cannabis on Patient-Reported Symptoms for Patients with Cancer Enrolled in Minnesota's Medical Cannabis Program

This study looked at the impact of participating in the Minnesota medical cannabis program in managing Cancer patient symptoms.

The study found that within 4 months of starting medical cannabis, there was a significant reduction in the severity of symptoms across all eight measures that were looked at in the study (anxiety, lack of appetite, depression, disturbed sleep, fatigue, nausea, pain, and vomiting) compared with baseline. Clinically meaningful improvements were most evident for vomiting, with the least clinically meaningful improvements observed for fatigue and pain.

Although, **this study does not specifically look at chronic pain**, this study estimates the magnitude of potential improvement that may be found in patients with cancer using cannabis extraction products. This estimated magnitude of patient-perceived improvement may be particularly useful in guiding expectations in a randomized clinical trial setting. Clinical trials are in a better position to adopt the use of validated tools in measuring symptom improvement. Zylla et al launched a prospective, randomized, observational study of patients with cancer requiring opioids and are tracking results longitudinally for all patients using validated symptom surveys to better define the benefits/risks of medical cannabis.[xxxiii]

Cannabinoids for the Treatment of Chronic Non-Cancer Pain: An Updated Systematic Review of Randomized Controlled Trials

An updated systematic review of randomized controlled trials examining cannabinoids in the treatment of chronic non-cancer pain was conducted according to PRISMA guidelines for

systematic reviews reporting on health care outcomes. Eleven trials published since our last review met inclusion criteria. The quality of the trials was excellent. Seven of the trials demonstrated a significant analgesic effect. Several trials also demonstrated improvement in secondary outcomes (e.g., sleep, muscle stiffness and spasticity). Adverse effects most frequently reported such as fatigue and dizziness were mild to moderate in severity and generally well tolerated. This review adds further support that currently available cannabinoids are safe, modestly effective analgesics that provide a reasonable therapeutic option in the management of chronic non-cancer pain.[xxxiv]

Randomized, controlled trial of cannabis-based medicine in central pain in multiple sclerosis

Research supports that cannabis can be beneficial in conjunction with or in place of opioids for chronic pain. In fact, studies have demonstrated that cannabis can be efficacious for several types of pain, especially neuropathic pain.

In this study of 66 patients with multiple sclerosis and neuropathic pain, patients were instructed to use a 1:1 whole-plant cannabis-based oromucosal spray as needed up to a maximum of 48 sprays in 24 hours. Each spray was 2.7mg THC and 2.5mg CBD. Of the 64 patients who completed the trial, 34 received the cannabis. Research results revealed that, cannabis-based medicine is effective in reducing pain and sleep disturbance in patients with multiple sclerosis-related central neuropathic pain and is mostly well tolerated.[xxxv]

A preliminary controlled study to determine whether whole-plant cannabis extracts can improve intractable neurogenic symptoms

In this series of studies with 24 patients with pain (including multiple sclerosis, spinal cord injury, and limb amputation), patients were instructed to administer a 1:1 spray as needed to achieve relief but to stop when unwanted side effects occurred. Researchers stated that patients using cannabis achieved relief significantly better than those using the placebo.[xxxvi]

An Exploratory Human Laboratory Experiment Evaluating Vaporized Cannabis in the Treatment of Neuropathic Pain from Spinal Cord Injury and Disease

In this particular study using vaporized cannabis with a placebo, 2.9% THC, or with 6.7% THC, 42 patients with neuropathic pain associated with spinal cord injury or disease were given 4 inhalations and a second dose 3 hours later (totals averaging between 4 and 8 inhalations). Researchers stated that both the lower and the higher concentrations of THC in the vaporized cannabis demonstrated significant analgesic effects.[xxxvii]

Conclusion:

Access to medicinal cannabis has the potential to alleviate pain, decrease opioid mortality rates, ease symptoms of treatments of chronic pain, ease withdrawal from opioids, and is viable option for addiction treatments and harm reduction in Minnesota. Cannabis use is not associated as a risk factor for treatment outcomes in methadone maintenance treatments. Medicinal cannabis may assist in addiction cessation. One may not overdose on medicinal cannabis. Approving chronic pain may help address the opioid epidemic in Minnesota (harm reduction), by allowing patients a safer avenue for treatment. It should be noted that some medications are prescribed off-label (medications approved by the FDA for other illnesses and/or symptoms) for pain management by healthcare providers. It is recommended that **moderate or severe persistent, chronic pain** be an approved qualifying condition for Minnesota's Medical Cannabis Program.

Section G: Letters in Support of Adding the Medical Condition

"I support the addition of chronic pain because the statutory definition of intractable is silly."

- [redacted]

"Dear Health Commissioner Malcolm, as someone who suffers from chronic pain, and is also allergic to opiate painkillers, cannabis is the only option for me when I'm having severe pain. Over-the-counter painkillers such as ibuprofen and Tylenol do little to mask the pain and cause a host of other health issues. I know I am not alone in these sentiments. I cannot stress enough how important cannabis can be to chronic pain patients as a source of relief from the daily entourage of symptoms. Please consider supporting expanding medical Cannabis. Thank you."

- [redacted]

"I have been a patient on the registry for 3years it gives quality of life where there was none its saved my life please help others who suffer."

- [redacted]

"Please consider adding more health issues to the MN cannabis program. We also need more stores around the state. It also needs to be cheaper. I afford the program and I don't qualify for a discount. Thank you."

- [redacted]

"I believe that the spectrum needs to be broadened to include chronic pain as well as the other already defined categories, there are many more patients that could benefit from this qualification. There is no question in my mind that something that comes naturally from a plant is healthier than a pill made in a lab. Thank you for your time. [redacted] *"*

- [redacted]

"Dear Commissioner Malcolm. As a person who was diagnosed with Chronic pain syndrome since my accident in 2015, I implore you to add the amendments that are being requested. Prescription medication has failed me or given me undesirable and life-threatening side effects. At the moment I am using hemp oil which has given some relief. I would like to have the chance to try medical marijuana oil to see if it will help in day to day life. All we are asking for is what other states have already approved. I was born and raised in Minnesota and would like to stay here. If legislation does not support what I need, I may have to move where it is supported. Thank you for your time. Sincerely, [redacted] *"*

- [redacted]

"Please stop limiting access to pain relieving substances. If you truly care about people and their health, why would you even consider not letting patients have access to the pain relief they are seeking? Please find a way to help people find the relief they desire. Thank you."

- [redacted]

"I have Scoliosis and need access to safe medical marijuana. It helps lot for me even post work, my back pain. They helped me to sleep ready for work next day."

- [redacted]

"I had bariatric surgery about 7 years post op and I am sensitive to medicines. I really do not take much because of this surgery. I cannot take anything with aspirin such as ibuprofen. I CAN take acetaminophen but don't care to ruin my liver using this. I have nothing else to use for pain. I need something for arthritis type pain and back pain. For headaches and other minor pains. Please consider adding the oral uptake. Using a mint or lozenges for pain would be great. There are many people in this state who would use for Traumatic Brian Injury. We have several pro sports teams in this state and many minor league teams. We have accident victims and other victims who could be on the program with this condition. Thanks for your considerations."

- [redacted]

"As someone who has suffered chronic back pain since early childhood, fast acting medical marijuana is my last hope. I have gone to physical therapy, seen multiple doctors, I have always

been given the option of opioids. Highly addictive, and easy to overdose on opioids. I believe adding my condition would not only save our social system billions, but thousands of lives too. Please consider the benefits of expanding access to a range of medical issues."

- [redacted]

"Dear Health Commissioner Malcolm, I write this letter to urge you to consider adding the conditions of Chronic Pain and Traumatic Brain Injury to the list of conditions that qualify for the Minnesota medical cannabis program. Cannabis has shown promise in reducing dependence on opioid painkillers for those with pain issues. It has also shown efficacy in treating side effects of TBI; my father suffered a TBI as the result of a massive stroke 24 years ago. By approving oral uptake as an alternate delivery method of cannabinoids, you will open the market to a group of people who need instant relief and who may not be able to inhale or swallow as easily as other patients utilizing the methods available in Minnesota now. Please consider this."

- [redacted]

"I have been on the MN medical Cannabis program since 2015. I t has saved my life I am off all the other meds for pain that cause serious side effects and addiction. I think an oral delivery would be much better than oral currently I vape."

- [redacted]

"Let's please make some common sense rules regarding medical marijuana. It has changed my life immensely by making it possible for me to get off of Opioid pain medication and become an active participant in my life again."

- [redacted]

"I think any reasonable and affordable solution to chronic pain, traumatic brain injury, and other various medical conditions should be available. Marijuana is not harmful."

- [redacted]

"Please make it possible for people in Minnesota to receive pain relief and TBI symptom relief. With the war on opioids, many people have been left living extremely poor quality of life. It is miserable. We weren't meant to suffer on this earth. It is sometimes left in the hands of people who have no concept of pain 24/7. Thank you."

- [redacted]

"I support the new addition of chronic pain and oral uptake to Minnesota's Medical Marijuana Program. As a person who suffers from chronic pain due to degenerative disc disease and arthritis in both hips and lower back, my options are running out to control the pain. Although I regularly exercise through walking, swimming, resistance training and stretching, the pain is constant and never goes away. Because I took too much Aleve to try and control the pain, I developed a gastric ulcer and am now unable to use Naproxen or Ibuprofen anymore. The only option I have for pain relief is opioids, which I refuse to take due to the addictive problems they represent, or Tylenol which, in long-term use, can cause liver problems. Please allow people with chronic pain to at least try to control it through the use of cannabis products which have shown to have very few, if any, side effects and can be safely taken for long periods of time without detrimental effects to other body parts. Thank you."

- [redacted]

"Commissioner Malcolm I am a Woman who has worked in the Roofing industry for over a decade which I loved. But now I live with major pain on a daily basis I have Facet Arthropathy Lumber, Osteoporosis, Degenerative Disc Disease and low back pain daily it stops me from being active and I get Depressed and anxiety. Please Help [redacted]"

- [redacted]

"I have dealt with pain going back to 1990. I have 4 surgeries, injections, testing and way too Many pain meds up to 60mg morphine plus several per day. Two months ago, and was allowed by my pain doctor to try CBD gummies. Within 3 days I noticed less pain. Then I started the Mn cannabis program. After two Months, I am No longer taking any morphine. I am down to 3 oxy Max per day. At my visit with my pain doctor last week I was informed that he can't recommend this program to any of his patients. Essentia Health in Duluth, Mn has numerous patients taking narcotics. I feel like it is criminal to keep these meds away from patients in pain. Maybe it won't work for everyone. This program needs to be made available with more locations. I have to drive 1 1/2 hours each way to get refills. Also, I can only get a 30-day supply. This requires me to have someone drive me every month. I won't be able to get transportation to Hibbing this winter. I am hoping Duluth will soon be opening a pharmacy. Duluth is a hub for medical care. Unlike the Hibbing office which appears to be dealing more with individuals that have been using other drugs. (based solely on what I've witnessed. If you want this program to grow, you need to be accessible to more people. This could be accomplished by being on a bus route. I believe in this program. I've heard from too many people saying they can't use it because they have to be drug tested for the COAT program. This needs to change Feel free to contact me if I can be of further assistance. [redacted]"

- [redacted]

"We have been screaming about the opioid addictions lately... how some want to hold the makers responsible. but many DO have chronic pain. Wouldn't it better to let them use Marijuana which is NOT addictive, not opiates?? I know I myself would love to test it out for some pain I am left with because of a bout with Lyme's. I never want to even think of opiates, but cannabis, I would try. Thank you."

- [redacted]

"I'm a chronic pain patient who has benefited much from my use and more need to have the ability Not to mention the companies providing the product need new revenue."

- [redacted]

"I can't tell you how much cannabis saves my life, literally. This illness and my others are debilitating and cause suicidal thoughts that only are relieved by cannabis. I would die without it. Best, [redacted] *"*

- [redacted]

"Dear Commissioner Malcolm, in a world where opioid prescriptions are written out in excess - abuse and addiction is rampant. In addition, there are many maladies that involve pain that don't fall into the palliative care sphere. It would be preferred to have something less addictive to treat chronic pain and traumatic brain injury that didn't involve chemicals with long lists of side effects or opioids. I believe that cannabis-based products are a good answer to this issue. As someone who deals with generalized anxiety and depression I take as SSRI to manage this as natural remedies have not been helpful in overcoming them. I'm troubled by the fact that pharmaceuticals are the only option legally available in order to treat or lessen the symptoms. Giving patients more options, especially ones that are potentially less addictive, is the right direction to take. There are also people who have issues swallowing due to myriad of reasons - making pill swallowing or edible delivery of cannabis-based medicine all but impossible. Opening up the methods to include newly developed oral uptake would be beneficial to many. This method also lessens the time needed to deliver the relief to the patient. Please consider supporting the expansion of medical cannabis in these areas. Thank you, [redacted] *"*

- [redacted]

"Chronic pain is one of the most urgent use cases for medical marijuana - let's get it done."

- [redacted]

"I support Sensible Minnesota's petitions for medical cannabis expansion."

- [redacted]

"Greetings, Commissioner, as a patient who is using Medical Cannabis for several qualifying conditions, I ask you to consider expanding the qualifying conditions, as well as, the oral uptake forms. Medical Cannabis has helped me in so many ways, and I'm certain it can help others. Also, the quicker delivery form of the oral uptake would be a benefit for all who are suffering. Thank you for taking the time to read my letter. I hope one day soon, people will realize the benefits of Cannabis, vs demonizing it as a gateway drug. I'm far too old for that! Sincerely, [redacted] *"*

- [redacted]

"I have had back pain for the past 30 years as a result of work-related injuries. I have tried several medications including opioids and would like to be able to try cannabis as I know this medicine is not addictive and would hopefully help alleviate my pain."

- [redacted]

"Dear Commissioner Malcolm- I'm writing in support of Expanding Minnesota's medical marijuana program to include chronic pain, TBI and oral uptake. My partner is on medical marijuana for irretractable pain and over the last 2 years I've seen his life become his again. Prior to this program he was prescribed high doses of opioids and was unable to work or engage in many social aspects of our lives. I was living with a man who had horrible pain with no relief. Since having access to medical marijuana, my partner has reclaimed his life. He's returned to work, is able to get pain relief many times a day and as the ability to engage socially in our lives. This program allows him a quality of life that wasn't available to him otherwise. In addition, I have a brother who has a TBI and chronic pain and I believe expanding medical marijuana to these conditions would benefits thousands of Minnesotans that currently can't find relief. I, too, live with chronic pain due to scleroderma and ceased my pain management program several years ago because the option was opioids or other medications that affected my cognitive abilities. My choices at that time were to quit my job to manage my pain (I couldn't do my job on some of these meds) or deal with the pain and continue to work. I continue to work today, but would benefit from medical marijuana without the horrible side effects that exist with the other medications I've been prescribed in the past. I truly hope Minnesota expands the medical marijuana program to help more people find the relief my partner has and can reclaim portions of their lives that have been severely impacted by their medical conditions. Thank you for your consideration. [redacted] *"*

- [redacted]

"I have chronic pain from rheumatoid arthritis and a back injury and cannabis has been useful for me in the past in Montana. I don't like smoking--it irritates my airways so I would appreciate being able to take it through oral uptake."

- [redacted]

"I suffer the daily challenges of the co-morbid conditions of major depression and chronic migraine disease. Either one of which is entirely debilitating and prevents me from working, the combination makes it impossible. What I do need to see to help with my diseases are oral uptake delivery systems, and chronic pain included in the qualification categories. I have virtually tried everything both western and eastern medicine have to offer, along with homeopathic, physical therapy treatments, and non-medicinal treatments injections, chiropractic's, off-label meds, and basically, I tried everything except wrapping garlic around my wrists. I did opt out of tying that one. We need more trials, more options, more studies using cannabis in addition to other drugs to see how harmonic they are."

- [redacted]

"To whom it may concern, I was diagnosed with MS about 11 years ago. I have problems with muscle spasms and pain that cannabis has helped me greatly with. Please allow people with other conditions and pain issues have access to cannabis as well; people should have the right to try a medicine that is NOT physically addicting to see if it will work for them. Sincerely, [redacted]"

- [redacted]

"I've been using medical marijuana for Ankylosing Spondylitis for two years. The inflammation in my joints causes me to have intractable pain but chronic pain as well. The sciatica is relentless and it's difficult to find a comfortable sleeping position. I use my medical marijuana, Tangerine, before bed. The times I have forgotten to take it, I did not sleep well. It would be more convenient to use a lozenge form of cannabis. I currently use a vape pen. Thank you for considering the petitions for medical marijuana approval for chronic pain, traumatic brain injury and oral uptake form of the medication. It's a medication-why are we making it so difficult?"

- [redacted]

"I'm 65. I've been trying to battle [?]. But first I had to battle a Vietnam vet who couldn't shake his training when he got home. I have had 25years of severe pain. Pain leads to a lot of things...like more pain. I set out to remove hydrocodone from my life. This was so wonderful that this came along. I am healthier. I am calmer. I'm a better wife. My new husband I'm not sure could handle this nor I. There are no breaks on this ride. Chronic pain, Traumatic brain injury, [?] nerve injury. I plan now what I will do, where I will go and when that day comes, I succeed more times than not. Thank you. I do rattle on."

- [redacted]

"With regards to Commissioner Malcom, when studies prove this is a safe alternative to other addictive pain management options, I see it can only be in the best interests of patients to have medical cannabis as an option. Personally, it has changed my life. I also think it is a fantastic way to combat opioid addiction. I also appreciate the fact that I can get helpful medication without having to worry about getting caught up in the for-profit prison industrial complex. As a side note, medical cannabis through oral use is helping me quit smoking! Thank you for your consideration. [redacted]*"*

- [redacted]

"I have found Cannabis to be a Better, More Qualitative Pain-Reducer than ALL the opiates I've ever been Prescribed! Please Seriously Consider this when decision time comes! Thank you! Either way I will continue to use Smokable Cannabis INSTEAD of Opiates to relieve my Intractable and Chronic Pain!"

- [redacted]

"Dear Commissioner, I am a disabled Vietnam veteran. I am a medical cannabis user in MN. I am very pleased with the use of the cannabis to relieve my pain. I very much support the use of medical cannabis for TBI and chronic pain. I would also like to be able to use the medical cannabis as an oral uptake for more easy delivery of the medication. Thank you, [redacted]*"*

- [redacted]

"I have suffered from chronic pain for more that 12 yrs., since a serious assault. I do not want to take opioids if I don't have to, but that's all medical wants to cover. Why does the government keep vital medicine out of the hands of the people that need it most?!?!?"

- [redacted]

"Please Help ME get off oral Oxycodone & Methadone-It's killing ME!!!!!! Thank You!"

- [redacted]

"To whom it may concern, as somebody who works in a large field of those with special needs and disabilities, I have seen the comorbidity rates of my clients and friends with issues, which require them to be in immense pain or trouble to exist through life. Having also family members who do suffer through chronic pain issues, and I use the word "suffer" to demonstrated that they are not able to function or participate in their lives the way that they should be able to, the limitations of certain medications and treatments make it feel as though there are no good choices that will not leave you ragged at the end of it all. With medical marijuana being more open to those with disabilities and other health issues, you allow those patients and people another choice at tackling the issues they go forth with. I have seen the effects of medical marijuana and cannabis for those with Autism spectrum disorder, where many of their behavioral and sensory issues have been lessened and you are able to see more of their personality, than you would have ever seen before. I strongly urge you to look not at the political side that is associated with this cause, but with the humanitarian side, to humanize those who are suffering from pain and have no other outlet other than prescription pain pills and "hoping for the best". I hope you found this short letter worth your time, and I wish you the best counsel on your decisions." - [redacted]

"I fully support an expanded battery of conditions for the usage of medical grade marijuana. There is a tremendous amount of research that supports the use of both THC and CBD to aid in chronic pain, TBI, and for oral administration. The more people that can benefit from the use of medical Marijuana the more that others will see the benefits of the drug."

- [redacted]

****See attached additional letters of support****

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Addendum

Chronic Pain Description

There are a number of different methods for classifying and describing types of pain. The following describes three broad pain categories:

(1) **Nociceptive pain**, which is pain from tissue damage and triggers signals to the brain by way of the nervous system. (IASP-pain.org [Internet]. International Association for the Study of Pain. Everyone is familiar with nociceptive pain – a stubbed toe, a broken finger, a dog bite, a tumor or inflammatory arthritis – these are all examples of nociceptive pain. Nociceptive pain is caused by damage or disruption to nerves.

(2) **Neuropathic pain**, which is pain that arises from damage to the central or peripheral nervous system and which is caused by disease or injury (IASP-pain.org [Internet]. This type of pain can include anything that damages neurons- including multiple sclerosis, chemotherapy, alcoholism and phantom limb pain. This type of pain is often described by patients as a feeling of burning, tingling, numbing, stabbing, electrical- aka "pins and needles", or burning (www.panscience.com/articles/pain-types.php. For example, neuropathic pain can occur when diabetes damages nerves in the hand and feet, producing a painful burning sensation. Typically, neuropathic pain signals are disproportionate, and sometimes disconnected from the original disease or injury.

(3) **Nociplastic pain**, which is a catch-all for types of pain that don't fit well into the other two categories. Fibromyalgia, non-specific low back pain, irritable bowel syndrome, and pain associated with and exacerbated by centralized and peripheral sensitization are all examples of nociplastic pain. Nociplastic pain arises from altered nociception, despite no clear evidence of actual or threatened tissues damage and no clear evidence of disease or lesion of the somatosensory system causing the pain. The somatosensory system refers to the conscious perception of touch, pressure, pain, temperature, position, movement, vibration which arise from the muscles, joints, skin and fascia. (www.panscience.com [first published 2011] & IASP Taxonomy, 2017).

In November 2017, the International Association for the Study of Pain (IASP) Council accepted the recommendation of a Presidential Terminology Task Force to approve the third descriptor of pain. The task force defined "Nociplastic pain" as "pain that arises from the altered nociception despite no clear evidence of actual or threatened tissue damage causing the activation of peripheral nociceptors or evidence for disease or lesion of the somatosensory system causing the pain."

Pain associated with all three of these categories can be characterized as acute or chronic pain. Acute pain, which is categorized by intense or urgent type of pain that resolves in the short term and is most commonly triggered by tissue damage. For example, acute pain can be caused by an illness, an injury, or by surgery.

Whereas, chronic pain, being characterized by a persistent pain that – while less intense than acute pain- can last for months or even longer. Often, the cause of chronic pain is unknown. For example, after an injury heals, chronic pain can remain and might even become more intense. Chronic pain might not even be associated with an obvious injury or illness. (Radicle Health Cannabis Therapeutics: Chronic Pain 2018). Pain—especially severe, chronic pain—interferes with multiple aspects of the individual's life and has many consequences.

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BOX S-1
Underlying Principles

- ***A moral imperative.*** Effective pain management is a moral imperative, a professional responsibility, and the duty of people in the healing professions.
- ***Chronic pain can be a disease in itself.*** Chronic pain has a distinct pathology, causing changes throughout the nervous system that often worsen over time. It has significant psychological and cognitive correlates and can constitute a serious, separate disease entity.
- ***Value of comprehensive treatment.*** Pain results from a combination of biological, psychological, and social factors and often requires comprehensive approaches to prevention and management.
- ***Need for interdisciplinary approaches.*** Given chronic pain's diverse effects, interdisciplinary assessment and treatment may produce the best results for people with the most severe and persistent pain problems.
- ***Importance of prevention.*** Chronic pain has such severe impacts on all aspects of the lives of its sufferers that every effort should be made to achieve both primary prevention (e.g., in surgery for a broken hip) and secondary prevention (of the transition from the acute to the chronic state) through early intervention.
- ***Wider use of existing knowledge.*** While there is much more to be learned about pain and its treatment, even existing knowledge is not always used effectively, and thus substantial numbers of people suffer unnecessarily.
- ***The conundrum of opioids.*** The committee recognizes the serious problem of diversion and abuse of opioid drugs, as well as questions about their long-term usefulness. However, the committee believes that when opioids are used as prescribed and appropriately monitored, they can be safe and effective, especially for acute, postoperative, and procedural pain, as well as for patients near the end of life who desire more pain relief.
- ***Roles for patients and clinicians.*** The effectiveness of pain treatments depends greatly on the strength of the clinician–patient relationship; pain treatment is never about the clinician's intervention alone, but about the clinician and patient (and family) working together.
- ***Value of a public health and community-based approach.*** Many features of the problem of pain lend themselves to public health approaches—concern about the large number of people affected, disparities in occurrence and treatment, and the goal of prevention cited

above. Public health education can help counter the myths, misunderstandings, stereotypes, and stigma that hinder better care.

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BOX 1-4
Pain by the Numbers

- **100 million**—approximate number of U.S. adults with common chronic pain conditions
- **$560 to 635 billion**—conservative estimate of the annual cost of chronic pain in America
- **$99 billion**—2008 cost to federal and state governments of medical expenditures for pain
- **60 percent**—percentage of women experiencing their first childbirth who rate pain as severe; 18 percent of women who have caesarean deliveries and 10 percent who have vaginal deliveries report persistent pain at 1 year
- **80 percent**—percentage of patients undergoing surgery who experience postoperative pain; fewer than half report adequate pain relief:
- — of these, 88 percent report the pain is moderate, severe, or extreme;
- — 10 to 50 percent of patients with postsurgical pain develop chronic pain, depending on the type of surgery; and
- — for 2 to 10 percent of these patients, this chronic postoperative pain is severe
- **5 percent**—proportion of American women aged 18 to 65 who experience headache 15 or more days per month over the course of 1 year
- **60 percent**—percentage of patients visiting the emergency department with acute painful conditions who receive analgesics:
- — median time to receipt of pain medication is 90 minutes, and
- — 74 percent of emergency department patients are discharged in moderate to severe pain
- **2.1 million**—number of annual visits to U.S. emergency departments for acute headache (of 115 million total annual visits)
- **62 percent**—percentage of U.S. nursing home residents who report pain:
- — arthritis is the most common painful condition, and
- — 17 percent have substantial daily pain
- **26.4 percent**—percentage of Americans who report low back pain lasting at least a day in the last 3 months

SOURCES: (Costs) Appendix C; (Childbirth) Melzack, 1993; Kainu et al., 2010; (Surgery) Apfelbaum et al., 2003; Kehlet et al., 2006; (Headache) Scher et al., 1998; (Emergency care) Todd et al., 2007; (Emergency: headache) Edlow et al., 2008; (Nursing homes) Ferrell et al., 1995; Sawyer et al., 2007; (Low back pain) Deyo et al., 2006.

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http://nationalpainreport.com/marijuana-rated-most-effective-for-treating-fibromyalgia-8823638.html

Research demonstrates efficacy when using cannabis to help treat fibromyalgia and migraines. For example, the National Pain Foundation conducted a survey in 2014 of over 1,300 patients suffering from fibromyalgia. Thirty percent of respondents reported using cannabis to treat the condition.

Of the nearly 400 participants who reported using cannabis:
62% reported that cannabis is very effective at providing relief
33% reported that cannabis provided some relief
5% reported that cannabis provided no relief

Respondents were also asked about Cymbalta, Lyrica, and Savella, which are FDA-approved medications for fibromyalgia:
8% reported that these drugs were very effective at providing relief
32% reported that these drugs provided some relief
60% reported that these drugs provided no relief

7/19/19

To whom it may concern,

I am writing this letter as a Licensed Alcohol and Drug Counselor that also works as a harm reductionist with the opioid using population, a large percentage of our patients suffer from chronic pain issues and will for their lifetime. Working at a methadone and Suboxone clinic I see patients come in to our facility in severe withdrawal. Until the patient is stable on their medication they often have symptoms of withdrawal that could be compared to the flu times 10. What I have witnessed over the past 4 years working with this population is that THC assists heavily not only with opioid withdrawal, but it heavily lessens their chronic or acute pain levels when using THC. The use of THC helps the person to not use opioids such as prescription medication, heroin and numerous synthetics like Fentanyl, and by using marijuana this also helps them to be at no risk of overdose and death compared to the risks of opioids specifically illicit street opioids. With the clients I work with about 60% of them use marijuana to help cope with severe to minimal chronic/acute pain, opioid withdrawal and cravings, as well as many mental health symptoms with a high number being heavy anxiety and PTSD. I do have 3 patients that are on the medical marijuana program but find it difficult to maintain due to cost, most have to fill in with illicit street marijuana due to financial cost of program, all 3 patients live with daily chronic pain, and numerous others we work with also suffer from chronic pain and use illicit street marijuana to help medicate pain levels, if they could obtain medical THC for their pain management they may no longer need the methadone they are currently using or other opioids.

As a person that works with addiction and specifically opioids I spend much of my days training first responders, community, family, active users and treatment providers to use Naloxone to reverse and opioid overdose, not once has anyone died due to using marijuana nor overdosed. This drug has so many properties that are helpful for people who use drugs specifically opiates, being in the current epidemic we are in with regards to opioids, many are dealing with chronic pain that could be helped by medical marijuana. Often when working with clients I will create treatment plans that state, "I will smoke more marijuana for my pain." Using harm reduction techniques like this for opioid dependent patients with chronic pain has proven for over 4 years to be extremely successful with my patients, having them choose a lesser harmful drug to replace one that could potentially kill them or to be debilitated from pain and/or become dependent on opioids, marijuana would be the and will also help with withdrawal and cravings has given most of my patients the means to become successful at no longer using opioids.

I firmly believe that marijuana use for chronic pain is the best way to help those suffering, to alleviate the deaths we are having daily in the state, and nationwide from overprescribed opioids for pain, is the safer option for those with chronic pain issues instead of prescribing opioids that could be more harmful be it long or short term for the person. In my professional opinion, marijuana for chronic pain could lessen the daily deaths from opioids if it were to be added to the list of diagnosis for THC use medically.

Thank you,

[redacted]

P.O. Box 18741
Minneapolis, Minnesota 55418
Sensible policies, safer communities.

sensiblemn

July 28, 2019

Commissioner Jan Malcolm
Minnesota Department of Health
Office of Medical Cannabis
PO Box 64882
St. Paul, MN 55164-0882

Re: Petition to add Chronic Pain as a Qualifying Condition for Medical Cannabis

Dear Ms. Malcolm:

I write today in support of Sensible Minnesota's petition to add moderate to severe, persistent and chronic pain as a qualifying condition for medical cannabis in Minnesota. Currently, intractable pain is a qualifying condition, but requires that the patient have effectively exhausted all other treatment options and that the source of the pain cannot be removed. This language has prevented thousands of patients from qualifying for medical cannabis and has made health care providers weary to certify their patients under this qualifying condition.

We know that medical cannabis is an effective treatment for pain conditions, and we support a more expansive definition to allow more pain patients access to medical cannabis products. According to a report published by Minnesota's Office of Medical Cannabis, in the first five months that intractable pain patients could access medical cannabis, 56% saw a reduction in pain and 7% noted a reduction of other pain medications as the most important benefit from medical cannabis. A total of 64% mentioned pain reduction as a benefit.

It is also important to note that Minnesota is amidst an opioid epidemic, with 1,946 emergency room visits for opioid-involved overdoses in 2018 and 422 opiate overdose deaths in 2017. In states with medical cannabis access, opioid prescribing rates for Medicaid and Medicare Part D patients notably decreased. One of the most difficult parts of reducing the use of opiates is managing the patient's pain – something medical cannabis is effective in doing.

Sensible Minnesota is dedicated to saving lives in Minnesota. While medical cannabis is not the panacea to the opioid epidemic or the magic bullet for pain treatment, it is a tool that can reduce the prevalence of opioid use and curtail the upward trend of opioid-related overdose deaths in Minnesota.

On behalf of the organization, I strongly urge you to add moderate to severe persistent chronic pain as a qualifying condition for medical cannabis in Minnesota.

Sincerely,

Gunnar Aas
Vice President, Sensible Minnesota

Marijuana Policy Project
P.O. Box 21824 • Washington, DC 20009
202-462-5747 • www.mpp.org

July 26, 2019

Commissioner Jan Malcolm
Minnesota Department of Health
Office of Medical Cannabis
P.O. Box 64882
St. Paul, MN 55164-0882

Re: In support of the petition to allow medical cannabis for chronic pain

Dear Ms. Malcolm:

My name is Karen O'Keefe, and I am the director of state policies at the Marijuana Policy Project, the largest marijuana policy reform organization in the United States. MPP has been working to enact compassionate and sensible marijuana policies for more than 20 years. It was our honor and pleasure to work with patients and their loved ones as a leading partner in Minnesotans for Compassionate Care, which led the medical marijuana advocacy campaign in Minnesota until the enactment of the law in 2014.

However, the law's passage was bittersweet because the program was exceptionally restrictive and left most patients behind. Since then, we are grateful to the Department of Health for granting a number petitions to approve additional serious medical conditions, including intractable pain — "pain whose cause cannot be removed and, according to generally accepted medical practice, the full range of pain management modalities appropriate for this patient has been used without adequate result or with intolerable side effects." Unfortunately, though, this restrictive definition still excludes large numbers of pain patients, and many try far more dangerous medications before medical cannabis.

Chronic pain is a serious issue, and it is something medical cannabis can alleviate. The Institute of Medicine found chronic pain costs up to $635 billion per year in medical treatment and lost productivity in the U.S.[1]

Medical cannabis' efficacy at treating chronic pain is well documented. In early 2017, the National Academies of Sciences, Engineering, and Medicine issued a report after a review of thousands of abstracts on medical cannabis research. It found, "[T]he use of cannabis for the treatment of pain is supported by well-controlled

[1] National Academies of Sciences, Engineering, and Medicine. 2011. Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research. Washington, D.C.: The National Academies Press, Conclusion 4-1.

clinical trials..." and "There is substantial evidence that cannabis is an effective treatment for chronic pain in adults."[2]

A survey published in the *Hawaii Journal of Medicine and Public Health* reported:

> Cannabis is an extremely safe and effective medication for many patients with chronic pain. In stark contrast to opioids and other available pain medications, cannabis is relatively non-addicting and has the best safety record of any known pain medication (no deaths attributed to overdose or direct effects of medication). Adverse reactions are mild and can be avoided by titration of dosage using smokeless vaporizers.[3]

In contrast, both over-the-counter and prescription medications for pain can be extremely damaging to organs and even deadly.

More than 47,000 Americans died in 2017 from opiate overdose deaths.[4] That was an increase of 5,000 in just one year. In 2016, prescription opioids were involved in an estimated 40% of opiate deaths.[5] Many patients who use medical cannabis reduce or eliminate their need for prescription opiates.

Data from Minnesota's medical cannabis program shows that 63% of enrolled intractable pain patients who had been using opiates were able to reduce or eliminate their use of opiate painkillers within six months.[6] Similarly, in Michigan — where chronic pain is a qualifying condition — medical cannabis patients reported a 64% reduction in opiate use.[7] Meanwhile, a study of New Mexicans suffering from chronic pain found enrolling in the state's medical cannabis program made pain patients significantly "more likely either to reduce daily opioid prescription dosages between the beginning and end of the sample period (83.8 percent versus 44.8 percent) or to cease filling opioid prescriptions altogether (40.5 percent versus 3.4 percent)."

Yet, despite the dangers opiates pose, Minnesota's medical cannabis program

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[2] National Academies of Sciences, Engineering, and Medicine. 2017. *The health effects of cannabis and cannabinoids: Current state of evidence and recommendations for research.* Washington, D.C.: The National Academies Press, Conclusion 4-1.

[3] Charles Webb, MD and Sandra Webb, RN, "Therapeutic Benefits of Cannabis: A Patient Survey," *Hawaii Journal of Medicine and Public Health* (2014).

[4] Henry J. Kaiser Family Foundation, "Opioid Overdose Deaths and Opioid Overdose Deaths as a Percent of All Drug Overdose Deaths," Timeframe: 2017.

[5] What is the U.S. Opioid Epidemic?, U.S. Department of Health and Human Services. Accessed July 24, 2019. https://www.hhs.gov/opioids/about-the-epidemic/index.html

[6] "Medical cannabis study shows significant number of patients saw pain reduction of 30 percent or more," Minnesota Department of Health, March 1, 2018. https://www.health.state.mn.us/news/pressrel/2018/cannabis030118.html ("The study also found that of the 353 patients who self-reported taking opioid medications when they started using medical cannabis, 63 percent or 221 reduced or eliminated opioid use after six months.")

[7] KF Boehnke, et al., "Medical Cannabis Use Is Associated With Decreased Opiate Medication Use in a Retrospective Cross-Sectional Survey of Patients With Chronic Pain," *Journal of Pain*, June 2016.

pushes pain sufferers to first try opiates and other painkillers before cannabis. It provides intractable pain patients only qualify if "the full range of pain management modalities appropriate for this patient has been used without adequate result or with intolerable side effects."

Over-the-counter pain medications also pose risks, particularly when they are used on a regular basis. As the FDA explains,

> There is the potential for gastrointestinal bleeding (bleeding in the stomach or elsewhere in the digestive tract) associated with all NSAIDs. The risk of bleeding is low for people who use NSAIDs intermittently. The risk of stomach problems goes up for people who take them every day or regularly, especially for people who are older than 65, people with a history of stomach ulcers, and people who take blood thinners or corticosteroids (prednisone).[8]

The FDA also notes that all NSAIDs except aspirin increase "the risk of heart attack or stroke. These serious side effects can occur as early as the first few weeks of using an NSAID, and the risk might rise the longer people take non-aspirin NSAIDs." In addition, each year, acetaminophen overdoses result in about 56,000 ER visits and 458 deaths from acute liver failure.[9]

Many chronic pain patients are well aware of the risks posed by NSAIDs and opiates, and some instead needlessly suffer with untreated or under-treated pain. Others try more dangerous treatment options. And still others use untested cannabis on the sometimes-dangerous illicit market.

If a physician believes a patient could benefit from medical cannabis for chronic pain, Minnesota law should not stand in way of that option. We respectfully urge you to approve the petition to approve chronic pain as a qualifying condition for medical cannabis.

Sincerely,

Karen O'Keefe

Karen O'Keefe
Director of State Policies
Marijuana Policy Project
323-568-1078
kokeefe@mpp.org

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[8] The Benefits and Risks of Pain Relievers: Q & A on NSAIDs with Sharon Hertz, M.D., U.S. Food and Drug Administration. www.fda.gov/consumers/consumer-updates/benefits-and-risks-pain-relievers-q-nsaids-sharon-hertz-md

[9] Lee, WM, "Acetaminophen and the U.S. Acute Liver Failure Study Group: lowering the risks of hepatic failure," *Hepatology*, 2004.

sensible changemn

[redacted]
Minneapolis, Minnesota 55418
Sensible policies, safer communities.

Commissioner Jan Malcolm
Minnesota Department of Health

Re: Sensible Minnesota Petition for the Addition of Chronic Pain

Dear Commissioner Malcolm:

I write today on behalf of Sensible Change Minnesota in support of the petition for the addition of Chronic Pain as a qualifying condition. As you will read in the petition, most states permit patients with pain to access medical cannabis as a treatment. In the midst of an opiate epidemic, it is our belief that Minnesota should put forth all options for pain management that can reduce the use of opiates.

As you are aware, Minnesota includes "intractable pain" as a qualifying condition, which is helpful to many patients. Unfortunately, this does not provide access to all pain patients, due to the statutory definition under Minn. Stat. § 152.125, subd.1:

> *"Intractable pain" means a pain state in which* ***the cause of the pain cannot be removed or otherwise treated with the consent of the patient and in which, in the generally accepted course of medical practice, no relief or cure of the cause of the pain is possible, or none has been found after reasonable efforts****. Reasonable efforts for relieving or curing the cause of the pain may be determined on the basis of, but are not limited to, the following:*
>
> *(1) when treating a nonterminally ill patient for intractable pain, evaluation by the attending physician and one or more physicians specializing in pain medicine or the treatment of the area, system, or organ of the body perceived as the source of the pain; or*
>
> *(2) when treating a terminally ill patient, evaluation by the attending physician who does so in accordance with the level of care, skill, and treatment that would be recognized by a reasonably prudent physician under similar conditions and circumstances.*
>
> Emphasis added.

Due to the limitations presented by the statutory definition, we have seen much confusion from lawmakers and health care providers alike. The general definition of "intractable pain" would include chronic pain, but the statutory definition, "intractable pain" is insufficient to serve pain patients in Minnesota who could benefit from medical cannabis.

While there are many compelling arguments for the addition of chronic pain as a qualifying condition, the most compelling is the reduction in use of opiates to treat pain patients.

[redacted]
Minneapolis, Minnesota 55418

Research indicates that there was a reduction in opiate prescribing for both Medicare Part D and Medicaid in states where medical cannabis is available. This not only helped keep opiates out of home medicine cabinets, it also provided cost savings for government healthcare programs. The studies on this topic are included with the petition submitted by Sensible Minnesota.

In 2019, I worked with Representatives Hamilton, Edelson, and Liebling, as well as Senators Jensen and Franzen, in an attempt to make this addition via the legislature. The primary feedback we received was that this decision is best left to you, as the Commissioner of Health, in the petitioning process. As such, this petition is submitted, and it is our hope that you will use your authority to add chronic pain as a qualifying condition.

Sincerely,

Maren Schroeder
Policy Director, Sensible Change Minnesota

cc: Governor Tim Walz