MDH Minnesota 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, 2018.
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. Please refer to our website to see which medical conditions were reviewed in prior years (http://www.health.state.mn.us/topics/cannabis/rulemaking/addconditions.html).
- ☐ 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, 2018 the Review Panel will provide the Commissioner of Health a written report of findings.
- ☐ The Commissioner will approve or deny the petition by December 3, 2018.

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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.*

Traumatic Brain Injury (T.B.I.)

T.B.I. - diffuse ICD-10-CM S06.20

T.B.I. - focal ICD-10-CM S06.30

*see attached

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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.

SIG [redacted] 07/29/2018

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

[redacted]

Co-petitioners:

[redacted]

[redacted]

Section B: Medical Condition You Are Requesting Be Added

Clinical Information:

Traumatic Brain Injury - diffuse, ICD-10-CM diagnosis code S06.20
Traumatic Brain Injury - focal, ICD-10-CM diagnosis code S06.30

Traumatic Brain Injury (referred to throughout as "TBI") is an acquired brain injury which occurs when a sudden trauma causes damage to the brain. TBI can result when the head suddenly and violently hits an object, or when an object pierces the skull and enters brain tissue. Focal and diffuse are ways to classify brain injury; focal injury occurs in a specific location, while diffuse injury occurs over a more widespread area. TBI symptoms can be classified as mild, moderate, or severe, depending on the extent of damage done to the brain.

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

Symptoms of TBI

TBI patients have symptoms that are categorized under three main categories: physical, sensory, and cognitive/mental. The categories can be further divided into four groups: thinking/remembering, physical, emotional/mood, and sleep.[3] These symptoms vary based on the severity of TBI.

Those that suffer from mild TBI may experience a loss of consciousness lasting anywhere from a few seconds to a few minutes, or they may have no loss of consciousness but instead

experience a state of being dazed, confused, or disoriented.[1] They may also experience other physical symptoms such as headache, nausea and vomiting, dizziness or loss of balance, fatigue or drowsiness, and sleep issues (difficulty sleeping, or sleeping more or less than usual).[2]

Mild TBI patients also experience sensory, cognitive, and emotional symptoms. Possible sensory symptoms include a sensitivity to light or sound, blurred vision, ringing in the ears, or a bad taste in the mouth[2], and potentially a change in the ability to smell.[1] Possible cognitive symptoms include difficulty concentrating, remembering new things, or thinking clearly.[3] Emotional symptoms include mood changes or mood swings, or feeling depressed or anxious.[1]

In moderate to severe cases of TBI, symptoms may include any of mild TBI, as well as other symptoms that may appear within the first few hours to days after the initial head injury.[1] These symptoms may include physical symptoms such as a loss of consciousness lasting from several minutes to hours, persistent and/or worsening headache, repeated nausea or vomiting, convulsions or seizures, dilation of one or both pupils, inability to awaken from sleep, weakness or numbness in fingers or toes, or loss of coordination.[1] Cognitive symptoms of moderate to severe TBI may include slurred speech or increased confusion, restlessness, or agitation.

Standard Treatment Side Effects

Anticonvulsants, given to TBI patients to decrease the risk of seizures[4], commonly cause feelings of being tired or sleepy; upset stomach or stomach discomfort; dizziness or lightheadedness; blurred vision or double vision; poor coordination or balance; unsteady walking; or headache.[5] Less common but more severe symptoms include rash; problems with the liver or pancreas; a serious drop in the number of white blood cells or platelets in the body; aplastic anemia; liver failure; sores, blisters, or ulcers in the mouth; blisters on the skin; excessive or inexorable bleeding; stomach pain and tenderness; fever; or unusual infections.[5]

Side effects of diuretics, given to TBI patients to reduce pressure in the brain[6], may include increased urination and mineral loss; hyperkalemia (too much potassium) or hypokalemia (too little potassium; hyponatremia (low sodium in the blood); dizziness; headaches; dehydration; muscle cramps; joint disorders such as gout; or impotence.[7]

According to the Mayo Clinic Warfarin (Coumadin, Jantoven), a commonly used anticoagulant or blood thinner given to TBI patients to reduce the chance of blood clots, has less serious side effects including bleeding from the gums after brushing teeth; bleeding between menstrual periods; diarrhea, vomiting or inability to eat for more than 24 hours; or fever.[8] More serious side effects caused by blood thinners include severe bleeding including heavier than normal menstrual bleeding; red or brown urine; black or bloody stool; severe headache or stomach pain; joint pain, discomfort, or swelling; vomiting of blood or material

that looks like coffee grounds; coughing up blood; bruising that develops without injury; dizziness or weakness; or vision changes.[8]

Selective Serotonin Reuptake Inhibitors (SSRIs), an antidepressant used in the treatment of depression and mood instability in TBI patients[9], have many side effects. These side effects may include dry mouth; sweating; headache; sedation; aggression; dizziness; tremor; nausea; diarrhea; constipation; indigestion; vomiting; abdominal pain; muscle pain; sleepiness or drowsiness; insomnia; fatigue; anorexia; anxiety; agitation; manic switch; nervousness; decreased libido; upper respiratory infection; rhinitis; sinusitis; impotence; ejaculation difficulties; weight gain; weight loss; hyponatremia; or fever.[9]

Side effects of muscle relaxants, given to TBI patients to reduce muscle spasms[9], may include sedation, drowsiness, or sleepiness; fatigue; body weakness; dizziness or lightheadedness; dry mouth; depressed mood; or low blood pressure.[10] All patients prescribed muscle relaxants experience at least one of these symptoms, and many experiences all of them.

Anti-anxiety medications, used to lessen the feelings of nervousness and fear in TBI patients[9], cause side effects such as insomnia; lightheadedness; involuntary movement; anxiety; fatigue and tiredness; nausea and vomiting; diarrhea; irritability; dizziness; weakness; unsteadiness; drowsiness; loss of muscular coordination; headache; muscular pain; slurred speech; confusion and disorientation; depression; impaired thinking and judgment; memory loss or forgetfulness; upset stomach; or blurred or double vision.[11] More rare side effects include mania; hostility and rage; aggressive or impulsive behavior; and hallucinations.[11] Long term side effects include increased risk of depression and suicidal thoughts or feelings; and emotional blunting or numbness.[11]

The medications chosen above are commonly prescribed medications used in the treatment of TBI. This is not an exhaustive list of side effects, but rather an example of the side effects faced by patients currently treated by these types of medications.

Section D: Availability of Conventional Medical Therapies

TBI can be treated with brain surgery, medications to decrease symptoms, and rehabilitation.[12] Surgery usually takes place soon after injury and can be used to place an intracranial pressure monitoring device; remove or drain bleeding in the brain; repair bleeding vessels or tissue; remove damaged tissue; repair skull fractures; or in cases of extensive swelling and damaged brain tissue, remove brain tissue to make room for living brain tissue. The overall goal of surgical treatment is to prevent secondary injury by helping maintain blood flow and oxygen to the brain and minimize swelling and pressure.

According to the Eunice Kennedy Shriver National Institute of Child Health and Human Development, many medications can be used to treat symptoms of TBI and lower some of the risks associated with it.[4] Anticonvulsants (anti-seizure drugs) may be given in the first week after injury to decrease the risk of seizure and protect the brain from any additional damage that could be caused by a seizure. Anti-seizure treatments are continued only if a seizure occurs.[6]

Anti-anxiety medication, antidepressants, and stimulants can all be given to treat the mental or psychological symptoms of TBI including, but not limited to, nervousness, fear, depression, agitation, mood instability, inability to concentrate, and inattentiveness.[4]

Anticoagulants are often given to TBI patients to decrease the chance of blood clots[4], and diuretics are given to reduce the amount of fluid in tissues and increase urine outputs which, when given to TBI patients, will help reduce the pressure inside the brain.[6] Muscle relaxants are occasionally given to reduce muscle spasms.[4]

Rehabilitation therapies are used for TBI patients after all initial threats are neutralized through hospitalization. These rehabilitation therapies include physical therapy, occupational therapy, speech therapy, cognitive therapy, psychological counseling, and vocational counseling. Physical therapy aims to build physical strength, coordination, and flexibility. Occupational therapy helps a person learn or relearn how to perform daily tasks. Speech therapy works the ability to form words and other communication skills. Cognitive therapy is among the most common types of rehabilitation for TBI patients and is designed to improve memory, attention, perception, learning, planning, and judgment. Psychological counseling helps TBI patients earn coping skills, work on relationships, and improve emotional well-being. Vocational therapy focuses on a person's ability to return to work, find appropriate opportunities, and deal with challenges in the workplace.[4]

Section E: Anticipated Benefits from Medical Cannabis

As discussed below, research suggests cannabis can provide several benefits for TBI patients. Activation of cannabinoid receptors, often done by introducing cannabis into the body, can result in modulation of cell death, excitotoxicity, neurological motor impairments, post-traumatic convulsions or seizures, TBI-induced behavioral deficits such as learning and memory, and anxiety; improved neurological performance; reduced edema; reduced blood brain barrier (BBB) disruption; reduced inflammation and gliosis; control of immunomodulatory responses; and neuroprotective effects.

Endocannabinoids: A Promising Impact for Traumatic Brain Injury

This study performed by Schurman and Lichtman assesses the therapeutic potential of cannabinoids and manipulations of the endocannabinoid (eCB) system to alleviate TBI pathology, in particular, manipulations of endocannabinoid degradative enzymes such as fatty acid amide hydrolase (FAAH), monoacylglycerol lipase (MAGL), and α/β hydrolase domain-6 (ABHD6). CB_1 and CB_2 receptors and their internal ligands have shown promise in modulating cellular and molecular hallmarks of TBI pathology such as; cell death, excitotoxicity, TBI-induced behavioral deficits such as learning and memory, neurological motor impairments, post-traumatic convulsions or seizures, and anxiety, all of which respond to manipulations of the endocannabinoid system.[14]

Investigations of cannabinoids on traumatic central nervous system (CNS) cell death have demonstrated efficacy in two areas: weakened neurodegeneration and reduced lesion volume. Neurodegeneration, commonly measured by reductions in specific neuronal markers, has been found to be abated in mice by CB_2 receptor agonists, as well as by inhibitors of FAAH and MAGL.[14] Furthermore, FAAH inhibitors have been found to produce reductions in lesion volume, and increased production of a structurally protective protein, Hsp70, and Hsp72, a negative regulator of apoptosis (cell death).[14]

Several studies investigating the effects of cannabinoids in laboratory animal models of TBI have focused on expression changes of metabotropic, α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA), and *N*-methyl-D-aspartate receptor (NMDA) glutamatergic receptors, finding that post-injury administration of the JZL184 MAGL inhibitor reversed TBI-induced reductions of certain NMDA and AMPA receptor expression, but had no impact on others, and a certain CB_1 receptor antagonist did not alter injury-induced lowered expression of certain metabotropic receptors, but reversed others, suggesting long term changes in glutamatergic function following administration of cannabinoids post-injury. Also noted in this study was that the excitotoxicity resulting from TBI is part of the series of events that lead to the release of damaging reactive oxygen species (ROS).[14] Antioxidants are known to prevent oxidation of free radicals and therefore protect against the cellular damage in response to sudden ROS elevation. eCBs have been linked to the neuroprotective production of antioxidants. Combined, these data suggest that MAGL represents a promising target to reduce the damaging effects of injury-induced excitotoxicity.[14]

TBI has been well documented in producing both neuroinflammation and cerebral blood flow pathology, as well as interfering with BBB integrity. Manipulations of the eCB system have proved effective in downregulating inflammation in many experimental models such as inflammatory pain and multiple sclerosis, and the use of cannabinoids following TBI have thus far been linked to two predominant features of inflammation: decreased inflammatory cell activation and decreases in pro-inflammatory cytokine production.[14] Cannabinoids are known to

exert vascular effects such as producing vasodilation as well as hypotension. Given this, their manipulation holds promise as protectants against cerebrovascular damage.[14]

Inhibition of eCB hydrolytic enzymes FAAH, MAGL, and ABHD6 have been shown to protect against TBI-induced memory impairments, suggesting that anandamide and 2-Arachidonoylglycerol (2-AG) elevation post-TBI may offer protection from TBI-induced learning and memory deficits.[14] TBI induced neurological motor impairments currently represent the most frequently studied behavioral outcome measure in TBI-cannabinoid literature. A variety of eCB system manipulations have thus far been found to be protective against the neurological motor deficits associated with models of TBI.[14] The eCB system has also been shown to play a protective role against seizures.[14] It was concluded that the eCB system possesses promise in the treatment of diverse TBI pathology.

Cannabinoid Agonist Rescues Learning and Memory After a Traumatic Brain Injury

In this study, the hypothesis is that post-traumatic brain injury administration of a CB_1 receptor agonist can rescue deficits in learning and memory. This was done by subjecting young adult male rats to a moderately severe controlled cortical impact brain injury, with a subset given postinjury i.p. injections of a cannabinoid receptor agonist.

Through novel object recognition tasks, the Morris water task, and lesion volume observations, it was found that the administration of a CB_1 receptor agonist after a moderately severe experimental TBI rescued learning and memory abilities in young male rats.[15]

An Endogenous Cannabinoid (2-AG) is Neuroprotective After Brain Injury

This study performed by Panikashvili et. al. shows that after injury to the mouse brain, 2-arachidonoylglycerol (2-AG), an endogenous cannabinoid, may have a neuroprotective role in which the cannabinoid system is involved. To do this, mice were subjected to closed head injury (CHI) using a weight-drop device, or to sham surgery. It was found that after CHI in mice, the level of endogenous 2-AG was significantly elevated.[16] After administration of synthetic 2-AG to mice after CHI, it was found that significant reduction of brain oedema, better clinical recovery, reduced infarct volume, and reduced hippocampal cell death compared with controls.[16] These results demonstrate temporal and local changes in brain levels of the endogenous cannabinoid 2-AG after TBI and record its neuroprotective effects.[16]

Cannabinoids in Neurodegenerative Disorders and Stroke/Brain Trauma: From Preclinical Models to Clinical Applications

Fernández-Ruiz et. al. discusses the evidence supporting that different cannabinoid compounds may be neuroprotective in brain trauma, among other ailments. Cannabinoids have been proposed as promising neuroprotective agents for the treatment of TBI. The most common models are those caused by closed (concussion) or open (stab wound) head injury. The cannabinoids having beneficial effects in these models included dexanabinol (HU-211), a synthetic compound having a chemical structure of a classic cannabinoid but no activity at cannabinoid receptors, nonselective synthetic cannabinoid agonists such as HU-210, phytocannabinoids such as Δ9-tetrahydrocannabinol (Δ9-THC), which binds not only CB_1 and CB_2 receptors, but also cannabidiol (CBD), eCBs such as 2-AG, and selective CB_2 receptor targeting ligands.[17] The benefits found in these models involved the activation of CB_1 receptors and included improved neurological performance, reduced edema, reduced BBB disruption, reduced inflammation and gliosis, and control of immunomodulatory responses.[17] It was also found that CB_2 agonists had a strong anti-inflammatory profile which is one of the most consistent mechanisms leading to reduction of lesion size.[17]

Inhibition of 2-AG Hydrolysis Differentially Regulates Blood Brain Barrier Permeability After Injury

Acute neurological insults caused by TBI are often associated with breakdown of the BBB followed by infiltration of peripheral immune cells, cytotoxic proteins, and water. Piro et. al. demonstrates that the neurovasculature exhibits a unique transcriptional signature following inflammatory insults, and pharmacological inhibition of MAGL using a newly characterized inhibitor rescues the transcriptional profile of brain vasculature and restores its functional homeostasis.[18] Through induction of general and localized BBB disruption of mice, this study supports considering MAGL inhibitors as potential therapeutics for BBB dysfunction and cerebral edema associated with inflammatory brain insults.[18]

Conclusion:

This is a sampling of the research indicating positive correlations between activation of cannabinoid receptors and treatment of symptoms associated with traumatic brain injury. In summary, the endocannabinoid system plays a significant role in neuroprotection, and cannabinoid receptor agonists, such as cannabis, are beginning to prove to be a favorable treatment for TBI, without the side effects. In addition to providing many neuroprotective effects, cannabinoid receptor agonists also rescue learning and memory after a TBI and serve as an anti-anxiety and antidepressant medication for TBI patients. It has proved to be a promising possibility for the treatment of TBI. It is recommended that TBI be a qualifying condition for medicinal cannabis treatment in Minnesota.

Section F: Scientific Evidence of Support for Medical Cannabis Treatment

The following scientific literature is enclosed:

Schurman, L. D., Lichtman, A. H. (2017). Endocannabinoids: A Promising Impact for Traumatic Brain Injury. *Frontiers in Pharmacology*, 8, 69. doi: 10.3389/fphar.2017.00069

Arain, M., Khan, M., Craig, L., Nakanishi, S.T. (2014). Cannabinoid Agonist Rescues Learning and Memory After a Traumatic Brain Injury. Annals of Clinical and Translational Neurology, 2(3), 289-294. doi: 10.1002/acn3.163

Panikashvili, D., Simeonidou, C., Ben-Shabat, S., Hanuš, L., Breuer, A., Mechoulam, R., Shohami, E. (2001). An Endogenous Cannabinoid (2-AG) is Neuroprotective After Brain Injury. Letters to Nature, 413(6855), 527-31. doi: 10.1038/35097089

Fernández-Ruiz, J., Moro, M.A., Martínez-Orgado, J. (2015). Cannabinoids in Neurodegenerative Disorders and Stroke/Brain Trauma: From Preclinical Models to Clinical Applications. Neurotherapeutics, 12(4), 793-806. doi: 10.1007/s13311-015-0381-7

Piro, J.R., Suidan, G.L., Quan, J., Pi, Y., O'Neill, S.M., Ilardi, M., Pozdnyakov, N., Lanz, T.A., Xi, H., Bell, R.D., Samad, T.A. (2018). Inhibition of 2-AG Hydrolysis Differentially Regulates Blood Brain Barrier Permeability After Injury. Journal of Neuroinflammation, 15(1), 142. doi: 10.1186/s12974-018-1166-9

Section G: Letters in Support of Adding the Medical Condition

***see attached.**

[redacted]

Minnesota Medical Cannabis Testimony-TBI/Concussions

"Having played American football for the majority of my life, I learned early on the physical toll that sport can have on your body. It wasn't until I was a sophomore in high school, when I would suffer a series of concussions in practice, that I realized that traumatic brain injuries were in no way normal and shouldn't be treated as such. After the injuries, I had been recovering for about a month, and things felt pretty good. I was nearing my return to the playing field, and to school, when I started suffering from intense migraines, exacerbated by an extreme sensitivity to light and sound. These symptoms, compounded with insomnia and lack

of an appetite, would keep me out of my regular public-school setting for the majority of my sophomore and junior years of high school.

Throughout this excruciating process, I spent time in the hospital on "painkiller cocktails", and had nerve block therapy along my neck, among countless other western medical treatments. None of them worked. It wasn't until my senior year of high school that I was able to try medical cannabis. I had tried cannabis from time to time prior to receiving my medical card, but that was just to alleviate pain. Once I had access to medical cannabis, I was able to treat my symptoms with products that were specifically developed for such purposes. I would take CBD supplements to treat inflammation in my neck, heavy [Cannabis] indica to help me sleep, and if the pain seemed insurmountable, I would eat a small edible to help me manage pain and improve my mood.

Thankfully after six years, much of this pain has subsided. I still deal with occasional migraines, but I have learned exactly what I need to do to manage such pain without it consuming my entire day. I owe a great deal to cannabis for being the primary treatment method for such a variety of symptoms, and I am thankful I grew up in a state, Michigan, that accepts Traumatic Brain Injury as a qualifying condition."

"Dear Health Commissioner,

I write you today as a Minnesotan and U.S. Army Veteran in order to urge you to consider adding TBI as a qualifying condition for Minnesota's medicinal cannabis program on behalf of all Minnesotan Veterans suffering from this condition.

In 2008, I joined the United States' Army. I deployed to Afghanistan with the 101st Airborne Division from 2009 – 2010 in support of Operation Enduring Freedom X. The result of those experiences left me with PTSD, but I was never diagnosed with TBI. Others were not as fortunate as I. Especially veterans operating in combat roles, I recognize a difference in my experience VS. theirs, which directly correlates to the severity of and susceptibility to TBI and other associated conditions.

I write today advocating on behalf of my fellow veterans suffering from TBI. Minnesota veterans suffering from TBI deserve to have every treatment option available to them, and I urge the commissioner to include this condition as a qualifying condition for Minnesota's medicinal cannabis program.

Veterans who stood up and fought for this country overseas, now need policy makers to stand up for them here at home. I appreciate your time as well as your consideration."

Very Respectfully,

[redacted]

[redacted]

"What do I say to you Jan, Commissioner of Health? What words can I type that will reach you on such a level you can see our pain?
I have typed out [redacted] story so many times for various articles wrote about us or posts on Facebook to bring awareness, that I feel it is not what you need to see.
Maybe you should see that MRI of my son's brain. I just saw the new one today. I am horrified. I am shocked. I am angry! I am so many emotions that only the mother of son like [redacted] would understand.

So how do I get you to understand, at least in part, how much cannabis is needed in his life?

Two years ago, we moved to Colorado so that my son could have legal access to all forms of cannabis. Life was not easy in any way for us there besides the cannabis. So, we came back to Minnesota for better medical and mental health care. Sadly, that meant giving up our medication.

While in Colorado we had our own grow. Healing with cannabis starts from the moment you place that seed into the dirt. She is the most amazing being. Cannabis gives off and takes energy like no other plant. So, you can go into your grow, wrap your arms around one of the ladies, and cry your heart out. She will take that energy and she will grow. You will feel the energy difference of each plant and it will give you an idea of how her flower will make you feel and heal. Each phase of growing your own medication is therapeutic, healing. There is so much I could say and so many amazing stories I could tell. Maybe, someday I can tell them to you.

I know this letter is simply to help get more conditions added to the approval list. I really despise such a thing. Why is one condition worse than the other? Why are we playing games with people's lives? Cannabis is one of the few things that when ingested, will cross the blood brain barrier to heal. So, every condition that affects the brain should be on the approval list.

Simply being alive and wanting to live a happy, healthy, productive life should qualify you to consume cannabis. All of cannabis in its natural form.

I digress. The need to request you to approve conditions is my topic.

Since moving back to Minnesota and not having access to fresh cannabis to make and use oils, creams, and to be vaped or smoked - [redacted] has started to deteriorate. His seizure activity is at an all-time high for him. He is again suffering with hypothalamic storms and serotonin syndrome. He is unable to clear his thoughts, control his behaviors, or stop the Tourette's moments. He is giving up on himself, dipping ever deeper into depression and pain. Self-harming is coming back. The overloads have increased to a point he is destroying doors and breaking bones again.

In Colorado [redacted] was able to go to school, work a job, laugh, learn to drive, enjoy life. He learned how to grow his own medication. The more time he spent with the those plants the better his mentality was. An education was possible, learning was happening every day. Now its not.

Some of my story - Due to doctors not listening to me, assuming they knew better, I rotted for about 2 years. By the time I got to Colorado I was declining quickly because I had also had a brain injury in March of 2016. Little did I know then that it kick-started my Chiari Malformation Type 1. So along with that causing me confusion, pain, and weird system failures my uterus was rotting from adenomyosis. I had had an ablation that the doctors felt was enough for me. I begged for 4 years for an ultrasound.
I was dropping weight quickly. I dry heaved most of each day for 9 months. For four months I gave birth every day from beginning to birth pains. My mind was so often so confused or anxious or unable to process emotions - I self-harmed via hitting my forehead on the wall or floor. I had enough estradiol in me for 3 full term pregnant women. This caused even more damage to my brain. It was horrifying on such an epic level I cannot describe it to you.

I ate great amounts of Feco or you could say RSO (Rick Simpson Oil). I made infused coconut oil with trim or fresh flower. I smoked, slathered it on, held those ladies, and prayed for release. If not for cannabis I would have starved to death. Without cannabis the rotting would have taken my life. Without cannabis I would not have been able to mentally handle the immense amount of pain my body and brain was going through. Cannabis helped me to get myself to a doctor that finally listened, yet still did not properly care for me. I had a botched hysterectomy in June 2017. Afterwards for 10 days I was creating blood clots. I was never given a blood thinner even though that should be protocol for high estradiol. By the time I got to the ER I was mottling. I was then given far too much thinner than my little body could handle. My vascular neurologist said that this too caused more damage to my brain.

I had to move back to Minnesota in order to receive proper medical care. Colorado has one of the worst health care systems in America. I was having surgery to remove what was left behind or never repaired to begin with as soon as I got back. Since last January CentraCare in St. Cloud has unearthed every medical condition I have that no other doctor ever bothered helping me look for.

I should not have had to fight so hard to get doctors to do a simple ultrasound - it would have saved me 2 years of utter hell. Many years of pain, headaches, confusion, emotional issues, etc. could have been dealt with.
Labor Day 2017 found me in a car accident that caused damage to my thoracic. A couple of those vertebrae are pushing hard against my mediastinum - recently figured that debilitating issue out. It is not playing well with the Chiari.

Due to all these health issues I am unable to tolerate eating. Again, I am starting to waste away. My mind cannot seem to trigger me to be hungry and when it does my stomach wants to reject it. Most nights are spent begging for sleep - Chiari is famous for being #5 out of

the top 10 weirdest conditions in the world because we do not sleep. So, if you look up Chiari malformation type 1 and what having the mediastinum smashed does to a person's body, you would understand why I am desperate for relief.

I can't describe [redacted] pain in his head, but I can mine. It burns. My brain feels like there is a fire in the cerebellum. When this happens then the back of my sinuses starts to burn. My arms feel like ice are in the veins. My diastolic tries to match my systolic. I then have heart palpitations, REM, more pain in my head like it will blow out the side and explode from the back of my skull. At this point I curl into a ball and cry because I know what's coming. So, then I seize hard, go into a paralyzed state, repeat and hope cerebral fluid doesn't flow. Of course, it is much worse than these words can describe. In fact, just typing this out has caused my brain to burn to a point I know I will seize later tonight if I do not take control of it. I may not be able to because I do not have the one medication I need in my home - cannabis.

I am unable to really live a life right now. I went from doing therapeutic massage therapy, walking 4-6 miles 5 days a week, PiYo almost every day. I could kinda think, kinda get things done, kinda live a decent life with my children before hell hit. The thing is that I can get a good deal of myself back if I just had access to various strains of cannabis in order to access all the different cannabinoids and terpenes my body is starved for.

With an enzyme deficiency that causes [redacted] to be unable to process narcotics, his serotonin syndrome issues that SSRIs created, benzos mean rage, his utter refusal to take any more medications due to the many horrors they created - what is my son to do for all that he goes through? How do we stop what the damage to his brain is creating?

I was raised by an abusive alcoholic who loves her narcotics. My now ex-husband was an abusive opioid addict for most of our 23-year marriage.
Do you think I want to put an opioid in my body? Should I put that chemical into an already damage brain and nervous system?

I cannot think on even a flexeryl so why would I want more? The tegretol is keeping seizures at bay but increase my issues with anxiety and sleep.
Without cannabis we are losing this battle.

We are humans and should have a right to choose how we want to heal our bodies. [redacted] and I choose to use cannabis to heal out minds, reduce our symptoms, clear our thoughts, calm the nervous system, reduce inflammation within our brains and bodies, and give us a quality of life we would not have if not for cannabis.

Please consider adding Traumatic Brain Injury to the list of approved conditions.
If you would like to know more about [redacted] journey please just google us. I was dubbed Minnesota's Marijuana Mom a few years ago while I fought a very public battle. My case went international and landed us in magazines and on a few shows. My family was torn up, torn apart, and stomped on as we fought to rise above what was being done to us simply because I

wanted my son to live. I refused to allow my son's brain to kill him. This battle went on in Minnesota while the laws were being passed. Surely, I thought TBI would be one of the first conditions to be approved. I guess they say anything worth having is worth fighting for. My son, myself, the entire rest of our family that is affected by all this - WORTH FIGHTING FOR."

Sincerely, [redacted]

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Sensible Minnesota

P.O. Box 18741
Minneapolis, Minnesota 55418

Sensible policies, safer communities.

July 25, 2018

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

Re: Petition to add Traumatic Brain Injury as a Qualifying Condition for Medical Cannabis

Dear Ms. Malcolm:

This letter is submitted on behalf of Sensible Minnesota in support of our petition for the addition of Traumatic Brain Injury (TBI) as a qualifying condition for medical cannabis in Minnesota. TBIs can occur in many ways and have a wide range of symptoms depending on where and how the trauma occurred. We hope Minnesota will allow those patients, whose doctors feel it is appropriate, to use medical cannabis as a treatment for TBI.

Our organization has heard many stories from soldiers, domestic violence survivors, car crash victims, athletes, and others about the benefits of cannabis in treating this condition. Research indicative of positive physiological responses, including neuroprotection, lends weight to TBIs inclusion as a qualifying condition.

We respectfully ask you to approve the inclusion of TBI as a qualifying condition in Minnesota's medical cannabis program and are confident that despite the wide-ranging variables on TBI severity, health care providers will make responsible decisions in certifying their patients for this life changing treatment.

Sincerely,

President, Sensible Minnesota

July 26, 2018

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

Re: Petitions to add Opioid Use Disorder and Traumatic Brain Injury as Qualifying Conditions for Medical Cannabis

To Whom it May Concern:

I am a U.S. Army veteran, a Minnesotan, and a medical cannabis patient. For over a decade, I served as a Counterintelligence Special Agent for the US Army's Special Operations Community.

My first deployment to Iraq was from April 2007 through July 2008, where I was involved in two IED explosions and diagnosed with a "mild traumatic brain injury" (TBI) and a shoulder injury. When I returned, I was placed on chronic opioid medication for pain management. From August 2008 to October 2009, I received 46 prescriptions for various opioid preparations, including:

- 8/20/2008-11/6/2008 – nine prescriptions;
- 11/12/2008-1/6/2009 – eight prescriptions;
- 1/12/2009-4/19/2009 – twelve prescriptions;
- 5/12/2009-7/14/2009 – seven prescriptions; and
- 7/17/2009-11/1/2009 – ten prescriptions.

The physical ailments quickly caught up to the anxiety, but that morphed into something I didn't recognize and couldn't control. I became extremely hostile and violent, and I wanted everyone to feel my pain and know what I live with. The Army pumped me full of happy pills for sadness and pain pills for the aching muscles, the ailing bones, constipation, sweating, dizziness... The pills just never ended.

I was once again deployed to Iraq from October 2009 to October 2010, and during this deployment sustained a third TBI. International deployments, austere environments, and national emergency response activations piled on stress and anxiety. I continued using prescribed opioids to control the pain while continuing my military career.

My third deployment was to Afghanistan from 2013 to 2014. While deployed, my opioid dependence escalated, and I was able to obtain heroin. Despite my addiction, I was a model soldier, even receiving one of six Bronze Stars awarded for this deployment, an award rarely given to soldiers of my rank.

After returning from deployment, on October 14, 2014, I attempted suicide by overdosing on opiates. Fortunately, the attempt failed, and I entered an intensive PTSD treatment program for 2

months. The program focused on prescribing more pharmaceuticals with side effects including suicidal ideations, depression, and anxiety. I was then medically retired from the Army in June of 2015 due to symptoms from my traumatic brain injuries and post-traumatic stress disorder.

Upon retirement from the Army, I found cannabis and began the road to recovery and getting my life back. Over the past three years, with cannabis, I have built my own business as an organic farmer, volunteer within the community, and am here to support and care for my family.

I joined the medical cannabis registry in October 2016 and am grateful that I have safe and legal access to medical cannabis. This is an option that anyone suffering from opioid use disorder, traumatic brain injury, or post-traumatic stress disorder should have to treat their condition and set them on the road to better health.

Despite being shot 3 times with an AK-47 and hit with 21 improvised explosive device (IED) blasts, which resulted in five traumatic brain injuries, three deployments, and nearly a decade of opioid abuse, I am here today to tell you that cannabis saved my life. I hope it can save others' lives too.

Sincerely,

[redacted]