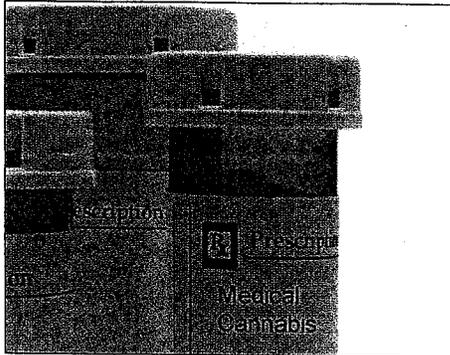


# CANNABIS AS MEDICINE

Some observations about a controversial treatment.



By K. Allan Ward, MD

*Editor's note: be clearly advised that Practical Pain Management neither endorses, supports, or condemns the use of cannabis in pain treatment. We have chosen to publish this article from among others we have received on this subject because it presents what appears to be factual information from Montana, a state that fundamentally has sanctioned its use.*

In this article, we will use the term *cannabis*, since *marijuana* is a term which is considered racist and derogatory to many international readers. Cannabis has achieved semi-legal status in the United States for use as a medicine in 14 states,<sup>1</sup> although its status by federal classification remains Schedule I under the Controlled Substances Act:

- A) A drug or other substance that has a high potential for abuse.
- B) A drug or other substance that has no currently accepted medical use in treatment in the United States.
- C) There is a lack of accepted safety for use of the drug or other substance under medical supervision.<sup>2</sup>

Therefore, prescribing cannabis is impossible under present DEA regulations and knowingly prescribing controlled substances to a person who is using cannabis—regardless of whether for medicinal or discretionary purposes—will potentially violate DEA licensure for the provider. Two synthetic prescription medications currently exist in the U.S. that can be prescribed. This conflict in its legal status between state and federal regulation remains a gray area and will be discussed in this article. The author lives in Montana, which legalized the medical use of cannabis in 2004. We will discuss how its use in pain medicine might be approached without forfeiting DEA licensure.

## The Montana Experience

Presently, there are more than 14,000 registrants in Montana with more than 11,000

giving 'chronic pain' or 'chronic pain and muscle spasms' as the reason for registration.<sup>3</sup> There are more than 2,500 "medical caregivers" who are registered to grow and provide cannabis to the patients. Montana law also allows for a registered caregiver to grow and provide cannabis to the registered user.

At the time of publication, no providers in Montana have had to either forfeit their DEA license or been subjected to state licensing board discipline for prescribing controlled substances with cannabis use. One provider has been censured for inappropriately providing registration in a series of clinics held on weekends with hundreds of registrations in each clinic. One provider in Montana has provided more than 3,000 registrants with certification to use medical cannabis. In most cases, after registration is obtained, the "patient" has no formal followup with the provider until the next year for renewal. Cities and counties in Montana have varied widely in their approach to the issue of medical cannabis. Some have local laws banning its use. Others have formal regulation of the provider storefronts. An informal survey by local journalists has not revealed a significant difference in criminal activity in the municipalities with a high tolerance for use. The overarching concern has been the bogus acquisition and use of cannabis by young persons, some of who are still in high school.

## Online Survey of Cannabis Users

The author performed an open-ended

online survey of cannabis users in Montana. The survey was advertised by giving an interview which was published in the five largest newspapers in Montana and spread to the internet news sources for medical cannabis and cannabis reform. There were 360 participants, with 292 of them being Montana medical cannabis registrants. Of the 292 responding as Montana registrants, only 13% were between the age of 21 and 30 years while actual MT registration statistics indicate that more than 25% of the registrants are in that age range. Because of the methods used, and comparison to the known registrants from Montana state sources, the survey may not be representative of the actual registrant population. 79% of the respondents have a caregiver but 48% also grow their own cannabis.

## Background of Cannabinoids

A synthetic form of the main psychoactive ingredient of cannabis—tetrahydrocannabinol-delta-9 (THC)—has been available by prescription in the USA since 1986 (dronabinol, marketed as Marinol<sup>®</sup>) and was downgraded from Schedule II to Schedule III in 1999<sup>4</sup> when it was noted that it has little street value because its cost exceeds the cannabis available.<sup>5</sup> It is listed for use in nausea and vomiting associated with cancer chemotherapy and appetite improvement for patients with AIDS. An additional synthetic cannabinoid, racemic-nabilone (marketed in the USA as Cesamet<sup>®</sup>), has approval for chemotherapy-related symptoms. Some providers

TABLE 1. Survey Results of 292 Medical Cannabis Registrants in Montana

DEMOGRAPHICS		TREATMENT OUTCOMES		OTHER REPORTED ISSUES	
Female	38%	Improved pain relief	88%	Required medical treatment for drug overdose	5%
Male	67%	Reduced anxiety	70%		
Currently employed	55%	Reduced muscle spasms	61%	Treated for emotional difficulties by a counselor, psychologist or psychiatrist	37%
21 to 30 year-old	13%	Decrease in medication use	74%		
31 to 40 year-old	24%	<b>ADVERSE SIDE-EFFECTS</b>			
41 to 50 year-old	22%	Decreased short-term memory	38%		
51 to 60 year-old	30%	Poor ability to concentrate	23%	Charged with driving under the influence of alcohol	10%
<b>CANNABIS INGESTION</b>		Delays in reaction time	10%		
Smoking	85%	Anxiety	8%	Consume tobacco	41%
Eaten in food	60%	<b>ONSET OF CANNABIS USE</b>		Take prescription medications (of these, 56% take controlled substances)	55%
Vaporizer	42%	Before age 18	50%		
Tinctures	32%	Between 18 and 25	30%		
Cannabis Tea	17%	<b>FREQUENCY OF USE</b>		Experience extreme intoxication when using cannabis with prescription medications or alcohol	14%
<b>PREFERRED METHOD OF USE</b>		3 or more daily with a reported cost of \$200-\$400 per ounce	53%		
Smoking	54%	<b>DRUG EXPERIMENTATION AMONG RESPONDENTS</b>		Endered unable to perform some activities when using cannabis	15%
Eaten in food	17%	Mushrooms	88%		
Vaporizer	22%	Cocaine	63%		
Tinctures	6%	LSD	57%		
Cannabis Tea	1%	Amphetamines	39%		

have used both medications for chronic pain. In Canada and Europe, a cannabis-based medical extract is approved for use as an oromucosal (mouth) spray (Sativex®). This product is entirely derived from the cannabis plant itself—with specially grown cannabis plants—and an extensive quality control process involved in production. A book was written about the development of this product,<sup>6</sup> which has entered Phase 3 drug testing in the USA.

A synthetic cannabinoid receptor inverse agonist—rimonabant (Acomplia®)—was approved in Europe for use in obesity, but with reports of “serious psychiatric disorders” associated with its use, was withdrawn from the market in 2009.<sup>7</sup> It was never marketed in the United States.

Cannabinoid receptors were identified in 1988.<sup>8</sup> There are two general receptor types, CB1 (generally in the CNS) and CB2 (generally in the immune system).<sup>9</sup> These effects are widespread, and act upon the gastrointestinal, cardiovascular and skeletal system.<sup>10</sup> The major endogenous cannabinoids in humans are anandamide and 2-arachidonoyl glycerol (2-AG).<sup>11</sup> Cannabis has a widespread variation on

its constituents, and has been cultivated for thousands of years. The desired content for discretionary use is the psychoactive substance, THC, which is primarily a CB1 agonist. Another major constituent is cannabidiol (CBD), which has little or no psychoactive effects.<sup>6</sup> Almost all of the cannabinoids have anti-inflammatory effects.<sup>7</sup> It is felt that the combination of active ingredients in cannabis exert an entourage effect<sup>5</sup> which explains better results with cannabis than the single-agent CB1 agonists currently available in the United States.

### Discussion

Because of the prevailing federal policy which regulates controlled-substance prescribing and dispensing, we have been given a legal opinion by counsel that knowingly providing controlled substance prescriptions or dispensing intrathecal controlled-substances to cannabis users could result in a loss of licensure, although we are not aware of this actually occurring. We have a policy of including a paragraph in service agreements for intrathecal pumps and controlled-substance prescribing that states we will not prescribe controlled-sub-

stances for persons continuing to use cannabis. From a technical standpoint, it doesn't appear that cannabis has significant drug interactions with opioids. Additive effects on motor control and mental status do occur. Studies regarding alcohol use with cannabis have shown significantly higher risks in operating motor vehicles.<sup>12</sup>

### Concerns and Benefits of Cannabis

The safety profile of cannabis is well-established. The toxicity of the substance is extremely low; it is essentially impossible to consume a toxic amount of cannabis. The primary concern of medical and health organizations is that smoking anything is an unhealthy practice, so other routes of administration need to be employed if cannabis is to be used for medical conditions.

Psychiatric side-effects can be severe in persons with pre-existing psychiatric conditions such as bipolar disorder and schizophrenia, especially when cannabis is used in adolescence, with cannabis use before age 15 resulting in a four-fold increase in psychosis by age 25.<sup>13-15</sup> There are reports of cannabis-induced psychosis, although this may be an early appearance of psy-

chosis which can improve with abstinence.<sup>16</sup> It appears that cannabis use under the age of 20 may have negative effects on the maturing nervous system.

There are many small studies that have touted cannabis use for seizures, polyneuropathy, anxiety and chronic pain. Its use for symptom management in multiple sclerosis, including pain, spasticity and possibly fatigue, is established.<sup>17</sup>

**Case Report 1.** The patient was a 69-year-old female with widely metastatic breast cancer, seen in pain clinic for severe back pain, with radiation of pain into the left foot. MR imaging demonstrates a left paracentral disc protrusion at the lumbosacral junction. She has significant nausea with the use of oral opioids. She is given a transdermal fentanyl patch (0.025 mg per hour), which is tolerated somewhat better but still causes nausea. She has lost more than 40 lbs during and after the chemotherapy and describes anorexia. A fluoroscopically-guided caudal epidural steroid injection provided about 25% relief. She was started on Cesamet® (nabilone) 1 mg twice daily, which improved her nausea and also improved her appetite. The effects lasted for about 9 hours, so she began to take the medication at 1 mg three times daily. This provided good relief of her pain and nausea, with an improved appetite. She was pleased with the combination of the fentanyl and nabilone.

**Case Report 2.** The patient is a 74-year-old female with a history of a left thalamic stroke, with no residual weakness or functional deficits. She developed a severe hemidysesthesia after the stroke, affecting her right side, with facial involvement. She has been diagnosed with Alzheimer-type dementia as well. She has been tried on gabapentin, pregabalin, amitriptyline, nortriptyline, duloxetine and transdermal fentanyl, none of which have been helpful. She is being given Aricept® (donepezil) and Namenda® (memantine HCl) combination therapy. She is taking transdermal fentanyl (0.025 mg per hour, changed every 3 days). She has had some moderate relief with naproxen, but this was withdrawn when she had mild kidney failure. A friend shared some cannabis-containing cookies that gave her very good relief and allowed her to sleep for six hours. Her provider will not give her the permission to use

medical cannabis with the fentanyl. Subsequently, she was given a prescription for Marinol® (dronabinol), 5 mg. Her first dose made her sleep for more than 18 hours. This was adjusted to the 2.5 mg dosage, which was less sedating, and gave fair pain relief. The patient noted that the cannabis-containing cookies were superior.

**Case Report 3.** I was asked to see this patient as a pain consult. The patient is a 52-year-old male, a disabled nurse with three previous spine surgeries. He has been prescribed 80mg of extended-release oxycodone 3 times daily, with 4mg of immediate-release hydromorphone every 4 hours for breakthrough pain, up to 5 times daily. Additionally, he is taking carisoprodol 350mg 5 times daily and diazepam 10mg 3 times daily. He has refused to obtain a primary-care provider for his medical needs, and refused to consider any change in the oral medications. Unbeknownst to the provider, and having failed to mention it in an initial interview, the patient had obtained a medical cannabis registration and was using cannabis regularly. A routine initial urine drug screen demonstrated a positive cannabis use. Upon being made aware of this, the patient stated that he had the right to use the cannabis since he had a registration. He was offered the alternative of dronabinol, but refused it. As a result, he sought another provider for his treatment.

### Summary

Cannabis use in public policy remains controversial because of state and federal law contradictions. These issues involve both discretionary use and the legitimate medical use of cannabis, either as a botanical product or as a medical extract. The pain practitioner has a special concern, since it appears that cannabis has profound and unique effectiveness for some painful and disabling conditions.

In Montana, 299 persons died of prescription drug overdoses in 2009, with less than 25% of them having been prescribed the medications that were the cause of death.<sup>17</sup> Although far less dangerous than any other controlled-substances (no deaths are known to have been caused by cannabis overdose), pain providers that prescribe controlled-substances and recommend cannabis use may—until a more uniform policy nationwide is estab-

lished—be subject to loss of DEA licensure. We would hope that the future brings more clarity to these policies. ■

*K. Allan Ward, MD, is a graduate of University of North Dakota School of Medicine. He is a board-certified physiatrist, with subspecialty certification by that board in pain medicine. He is also a diplomate of the American Board of Electrodiagnostic Medicine. He serves as a consultant for Great Falls Orthopedic Associates in Great Falls, Montana. His work includes office and interventional pain management.*

### Notes and References

1. As of early 2010, states with medical cannabis waivers include Alaska, California, Colorado, the District of Columbia (D.C.), Hawaii, Maine, Michigan, Montana, Nevada, New Jersey, New Mexico, Oregon, Rhode Island, Vermont and Washington. A pending referendum in California will pass overall legalization. Montana is considering a legislative overhaul of the current law because of concerns mentioned in this article. The reader should seek current information on this, as state laws are changing rapidly.
2. [www.justice.gov/dea/pubs/csa.html](http://www.justice.gov/dea/pubs/csa.html). Accessed 24 Aug 2010.
3. [www.usdoj.gov/dea/ongoing/marinol.html](http://www.usdoj.gov/dea/ongoing/marinol.html). Accessed 24 Aug 2010.
4. Calhoun SR, Galloway GP, and Smith DE. Abuse potential of dronabinol (Marinol). *Journal of Psychoactive Drugs*. 1998. 30(2): 187-196.
5. Guy GW, Whittle BA, and Robson PJ. (eds.) *The Medicinal Uses of Cannabis and Cannabinoids*. Pharmaceutical Press. 2004.
6. Howlett AC. The cannabinoid receptors. *Prostaglandins Other Lipid Mediat*. Aug 2002. 68-69: 619-31.
7. Graham ES, Ashton JC, and Glass M. Cannabinoid receptors: a brief history and "what's hot." *Front Biosci*. 2009. 14: 944-57
8. *Ibid.* ref 5: pp 103-129.
9. Lambert DM, and Fowler CJ. The endocannabinoid system: drug targets, lead compounds, and potential therapeutic applications. *J Med Chem*. 2005. 48(16): 5059-5087.
10. Formukong, Evans, and Evans, "Analgesic and anti-inflammatory activity of constituents of Cannabis sativa L." *Inflammation*. 1988. 12(4): 361-371.
11. [www.dphhs.mt.gov/medicalmarijuana/mmpcurrentpatientcount.pdf](http://www.dphhs.mt.gov/medicalmarijuana/mmpcurrentpatientcount.pdf). Accessed 24 Aug 2010.
12. *Ibid.* ref 5: pp 329-366.
13. Van Os J, Bak M, Hanssen M, Bijl RV, de Graaf R, and Verdoux H. Cannabis use and psychosis: A longitudinal population-based study. *American Journal of Epidemiology*. 2002. 156: 319-327.
14. Arseneault L, Cannon M, Poulton R, Murray R, Caspi A, and Moffitt TE. Cannabis use in adolescence and risk for adult psychosis: longitudinal prospective study. *British Medical Journal*. 2002. 325: 1212-1213.
15. Henquet C et al. Prospective cohort study of cannabis use, predisposition for psychosis and psychotic symptoms in young people. *British Medical Journal*. 330, 11-14.
16. Arendt M et al. Cannabis-induced psychosis and subsequent schizophrenia-spectrum disorders: follow-up study of 535 incident cases. *British Journal of Psychiatry*. 2005. 187: 510 - 515.
17. Unpublished data from the MT Department of Criminal Investigation, courtesy of Mr. Mark Long, department chief.

## **A discussion on medical cannabis regulation in Montana**

By K. Allan Ward MD. Staff consultant, Benefis Pain Clinic. Specialist, pain medicine, physical medicine & rehabilitation.

The opinions shared here are my own, and are not shared by any organization of which I am formally affiliated.

There is a widespread abuse of the voter-mandated proposition for the use of medical cannabis in Montana. However, in spite of this, MT has not seen any catastrophic rise in traffic fatalities, violent cannabis-related offenses, or deaths.

Medical evidence for cannabis in the treatment of spasticity, pain, polyneuropathy, adult failure to thrive and multiple sclerosis are extensive<sup>1</sup>. Numerous studies attest to its safety and tolerability, although the preferred smoking method is a concern<sup>2</sup>.

A recent report in the most respected medical journal in the world, The Lancet, has established a list of dangerous drugs based upon both personal and societal effects, separately and taken together. While there is no doubt that the risks of certain "hard drugs" are obvious on a personal level, including heroin (diamorphine), methamphetamine and crack cocaine, alcohol presents the greatest risk due to its legal status and ubiquitous use. Similarly, tobacco has great risks due to its effect upon individuals. The study is not easy reading, but it may be fairly summarized in placing cannabis below the mentioned drugs<sup>3</sup>. 299 persons died of prescription drug overdose in MT, 2009. 221 persons died in motor vehicle accidents in MT in 2009<sup>4</sup>. Of these, 94 were alcohol-impaired<sup>5</sup>.

As a practicing pain physician, also providing cares for narcotic addicts, I must conclude that cannabis is not of the same category as opioids in terms of risk. Aside from driving fatalities, cannabis is not a significant risk for overdose-related deaths. I have performed a study of more than 350 cannabis users in MT<sup>6</sup>. The study indicates that cannabis is useful in treating pain, insomnia and a number of neurological disorders. Side-effects primarily involve altered mental status. A majority of patients of working age were employed. Most stated that they would avoid driving if they were impaired. In comparing these statistics to my own clinic data, and that of other physicians prescribing narcotics for chronic pain, cannabis use is more likely to sustain employment than opioids.

I would conclude that cannabis should be viewed as another valuable medication for treating certain conditions, notably cancer and multiple sclerosis, but also some types of pain. It has significant side-effects that are not life-threatening. Its effective use should be assessed in a fashion similar to other controlled substances. These standards have been published online by the MT Board of Medical Examiners<sup>7</sup>. The present status in MT essentially has exempted the cannabis patient from these standards. MT, along with the other states that have medical cannabis legislation, have contradictory statutes to the federal law, which classifies cannabis and its derivatives as a Schedule 1 dangerous drug with "no medical use"<sup>8</sup>.

I would propose that regulations relating to cannabis should view it as being about the same as milder narcotics, and that medical supervision use the same standards as the narcotics. The recommended steps should include a history and physical, a diagnosis that establishes legitimate use, and ongoing follow-up to confirm safe and effective use. The present system seems to place the follow-up upon the shoulders of either the patient-user or the cannabis caregiver, neither of whom are medically qualified to make that determination. The only requirement is an annual recertification, which is hardly a sufficient method to determine legitimate, safe use.

If the balance between appropriate use and safe regulation is to occur, it must be fair-minded. To place regulatory burdens that exceed more dangerous drug prescribing is unjust, and will probably lead to further underground, illegal commerce in cannabis. I would respectfully submit that proposed regulations recognize the need for cannabis treatment being viewed as an equivalent to the present opioid prescribing standards proposed by the medical licensing board of MT. The present status in our state has allowed opportunistic abuse of the present statute. As a result, many persons under the age of 40 have obtained a "marijuana card" to legally use cannabis with no valid medical purpose. This abuse threatens the population that benefits from its safe and appropriate use. I would submit that a middle ground can be legislated.

Dr. Ward is a board-certified specialist in physical medicine and rehabilitation, with subspecialty certifications in pain medicine and electrodiagnostics. He practices as a consultant in central Montana with the Benefis Pain Clinic and Great Falls Orthopedic Associates. His practices includes the diagnosis and treatment of pain, narcotic addiction and peripheral nerve condtions. He welcomes interaction with legislators, and would be pleased to discuss his survey findings and experiences:

[mail\\_drop@dr.com](mailto:mail_drop@dr.com)

Office phone: 406 455 2132

### **References**

<sup>1</sup>Marijuana Medical Handbook: A practical guide to the Therapeutic Uses of Marijuana. D. Gieringer, E. Rosenthal, GT Carter. 2008: Quick Trading Company. This is a concise review of many issues surrounding cannabis use.

<sup>2</sup>Cannabis and cannabinoids: pharmacology, toxicology and therapeutic potential. F. Grotenhermen, E Russo. 2002: Haworth Press. Current digital printing with Routledge. Dr. Russo lived in Montana for most of his professional life. This book is technically daunting, but remains the best resource in understanding the breadth of issues and challenges in establishing cannabis within the medical treatment environment.

<sup>3</sup>The Lancet, Vol 376: pages 1558-1565 (6 Nov 2010).

<sup>4</sup>Montana Traffic Safety Problem Identification. MT Dept of Transportation, page 3.

<sup>5</sup>Same as above, table 21, page 40.

<sup>6</sup> Practical Pain Management, Sept 2010, pages 38-42. Cannabis as medicine. This is a brief review of my study.

<sup>7</sup>[http://bsd.dli.mt.gov/license/bsd\\_boards/med\\_board/pdf/chronic\\_pain.pdf](http://bsd.dli.mt.gov/license/bsd_boards/med_board/pdf/chronic_pain.pdf)

<sup>8</sup>[http://www.justice.gov/dea/pubs/abuse/drug\\_data\\_sheets/marijuana\\_DrugDataSheet.pdf](http://www.justice.gov/dea/pubs/abuse/drug_data_sheets/marijuana_DrugDataSheet.pdf)

**K. Allan Ward, M.D.**

Box 29 \* Great Falls MT 59403-0029  
cell: 406 899 8360 \* [pain\\_doctor@doctor.com](mailto:pain_doctor@doctor.com)

TO: House Human Services Committee  
FROM: Dr. Allan Ward  
RE: HB 68 – Recommended Improvements

I write to support HB 68 – but also to strongly urge some important improvements in this proposal.

I am one of Montana's few pain specialists. I work with patients from all over the state, along with their primary care physicians, who refer the patients for my assistance. I myself have never made a medical cannabis recommendation, as I prefer to leave that judgment to the primary care physicians (many of whom have done so). But I have studied the voluminous, published professional literature on cannabis with intense interest and, in addition, have conducted the only serious study I know of on the results experienced by Montana cannabis patients.

HB 68 offers, in my view, a thoughtful and workable framework for controlling Montana's medical cannabis program in sensible and much-needed ways. But I also believe it would punish the state's many genuine pain patients for the sins of those who have operated shoddy and unacceptable "clinics." The behavior of physicians and clinics can be controlled and regulated in smarter, more direct ways – and HB 68 contains such proposals.

Chronic pain is much more common than many lay people – and even than many physicians – understand. In Montana, particularly in our vast more rural areas, it can be very difficult for people to find and receive adequate pain treatment. Meanwhile, both the scientific literature and the experience of Montana patients demonstrates that cannabis can allow patients to reduce or eliminate their need for riskier opiates – and that cannabis patients as a rule can function more productively in society than can the typical patient who is dependent on narcotics for pain relief.

I hope you will take the time to read my attached analysis and my published article on the Montana research I mentioned, which appeared in the peer-reviewed journal, *Practical Pain Management*, late last year. Please note that most cannabis patients are gainfully employed, contributing members of society, whereas most narcotics patients cannot function as well.

I urge you to amend HB 68 to eliminate the requirement that pain patients receive recommendations from two separate physicians. There is no need in my judgment to treat cannabis any differently than heavier prescription drugs. A two-doctor requirement would be a financial burden to most patients, but would not ensure better decisions by physicians. HB 68's other new requirements of physicians – that they be residents of the state; that they affirm a physical exam or thorough review of medical records before considering a cannabis recommendation; that they continue to see the same patients for regular follow-up – these provisions would eliminate the “shoddy recommendation” problem that has tarnished the state's medical cannabis program, but without punishing one class of patient unfairly.

Thank-you for your consideration. Please feel free to contact me at the email or phone listed above should you have any questions or wish to discuss these issues.