Minnesota Medical Cannabis Program: A First Look

The Minnesota Legislature’s recent passage of medical cannabis legislation has raised many questions regarding both the science behind the marijuana initiative, as well as the details of implementation of the State’s program. While details of the State’s program remain under development and are at this point unknown, this Pearl will attempt to briefly summarize the issue to help guide discussion moving forward. We will continue to follow this rapidly evolving issue, and will provide further guidance as the details of the State’s medical cannabis program become available.

Background: Cannabis sativa, or marijuana, has been used both recreationally and as a medicinal folk remedy for thousands of years. Physicians in the 19th century used tinctures and extracts of Cannabis to treat a vast array of ailments. By the 1930s, driven largely by popular concerns regarding addiction, the medical use of cannabis was de-legitimized, culminating ultimately in DEA designation as a Schedule I drug (no currently accepted medical use, and high addictive potential) in 1970. Practically speaking, this designation curtailed research on the potential medical benefits of marijuana, although research on adverse health effects continued.1

Pharmacology: The site of action of Cannabis and cannabinoids is on the endocannabinoid system, an endogenous neurotransmitter system in many ways analogous to the endogenous opiate and GABA systems. Identification of the endocannabinoid system has led to development of several branded pharmaceuticals: Marinol (dronabinol)—synthetic THC, the main psychoactive ingredient in marijuana, was approved in 1985 for chemo-related nausea and vomiting, and for AIDS-related wasting syndrome, although use has been limited by a narrow therapeutic window relative to psychoactive side effects, and the availability of more potent and better tolerated anti-emetics. Cesamet (nabilone), a semisynthetic THC analogue, has similar indications and limitations.

Cannabis sativa is a complex mix of cannabinoids, and there is speculation that “other cannabinoids present in marijuana may have important effects that offset THC’s negative effects.”3 This has further fueled interest in “medical marijuana” use (as opposed to the already available branded pharmaceuticals).

The Good: Because of marijuana’s Schedule I DEA designation, research on medical marijuana has generally been limited to very small studies, often of low quality, or even simply anecdotal. There is at least limited evidence of efficacy for medical marijuana in the treatment of cancer-chemotherapy related nausea, glaucoma, spasticity from multiple sclerosis, and AIDS wasting syndrome. Evidence from human studies in the treatment of seizures is currently lacking. Evidence of benefit in treating pain and inflammation is poor. Several studies suggest modest efficacy in treating chronic neuropathic pain, but only when used in combination with other agents.4
It is worth noting that for most of these conditions, well-validated, effective, and often better tolerated agents are available in our current pharmacopeia.

**The Bad:** While the pharmaceutical applications of medical marijuana are thus far poorly validated, the adverse effects have been the subject of considerable scientific scrutiny. Many of the adverse effects of marijuana have “been determined with a high level of confidence.”\(^5\) Cognitive impact on adolescent brain development and unmasking of psychosis in individuals with mental illness may be particularly limiting. Known adverse effects include:

- Addiction (9% of those who experiment with it)\(^5\)
- Withdrawal syndrome (“irritability, sleep difficulties, dysphoria, craving, and anxiety”)\(^5\)
- Abnormal brain development and diminished lifetime achievement (adolescents)
- Psychosis and unmasking of schizophrenia, especially in those with pre-existing mental health conditions
- Impaired motor coordination and increased risk for motor vehicle accidents
- Symptoms of chronic bronchitis if smoked

**The Minnesota Medical Cannabis Law:** As the perception of the potential for medical utility of marijuana has increased, multiple state legislatures have responded to pressure for liberalization of marijuana laws by legalizing medical marijuana, even as the federal government has persisted in maintaining, and to some degree enforcing, its Schedule I status as a controlled substance.

In 2014 the Minnesota Legislature passed legislation intended to allow seriously ill Minnesotans to use medical *Cannabis* to help treat some medical conditions. The legislation provides only a very general framework for how to accomplish this. The details of medical *Cannabis* management in Minnesota are yet to be worked out by the MDH. The expected "go-live" data for this legislation is 1 July 2015. Over the next year, the Department of Health will work out the details of implementation in preparation for this go-live date.\(^6\)

The legislation allows medical *Cannabis* use for Minnesotans whose provider has certified them to be suffering from the following conditions:

- Cancer associated with severe/chronic pain, nausea or severe vomiting, or cachexia or severe wasting
- Glaucoma
- HIV/AIDS
- Tourette’s Syndrome
- Amyotrophic Lateral Sclerosis (ALS)
- Seizures, including those characteristic of epilepsy
- Severe and persistent muscle spasms, including those characteristic of multiple sclerosis
- Crohn’s Disease;
- Terminal illness, with a life expectancy of less than one year, if the illness or treatment produces severe/chronic pain, nausea or severe vomiting, cachexia or severe wasting.\(^6\)

Medical providers will be required to "certify" that a qualifying condition is present prior to patient enrollment in the program. The legislation stipulates that registered patients will pay an annual fee of $200 to participate. Medical *Cannabis* will be produced by two manufacturers and distributed by four distribution centers, which will be managed by the State. The medical *Cannabis* will be provided to
patients as liquid, pill, or vaporized delivery, rather than as dried leaves or a plant form. Patients will be required to participate in a state-mandated registry program, to help the state monitor benefits, risks, and side effects of the medical Cannabis. 

**Unknowns:** Because the State of Minnesota legislation provides an outline for implementation of a medical Cannabis program, but no details for implementation of this program, many of the specifics of management of medical Cannabis remain unknown. At this time the role that individual physicians or providers will play is not clear, beyond the "certification" process. It is not clear what the State of Minnesota Registry process will entail. At this point, even details like how medical Cannabis will be dosed remain uncertain, given that this product will not have a known therapeutic range like the FDA approved pharmaceuticals that are more familiar to us.

The Department of Health fact sheet on medical Cannabis is located at: http://www.health.state.mn.us/topics/cannabis/overview/faq.html

HealthPartners and Park Nicollet Clinical Care Committee will continue to monitor this evolving issue closely and will provide further updates as information becomes known.

**References:**

**Questions:** Please reply to this email, and your question(s) will be directed to the author of this Pearl, Charlie Lais, MD.

This Pearl was reviewed and approved by the HealthPartners and Park Nicollet Clinical Care Committee.

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