Healthe SYSTEMS

Medically Speaking

Marijuana and Pain Management

Robert Goldberg, MD, FACOEM, Chief Medical Officer, Healthesystems

Are physicians ready to embrace this brave new world of medical marijuana? Recent developments in the legalization of medical marijuana and, in select cases, its reimbursement by workers' compensation payers, indicate that medical marijuana is becoming increasingly legitimized in the court of public opinion, by state legislatures, and in a few cases, the state courts.

Clinical catch-up

Currently, physicians remain largely uncomfortable with recommending medical marijuana due to a low knowledge base regarding its benefits and risks for medicinal use and its continuing DEA status as a Schedule 1 illicit substance. Discomfort exists even in Washington state, where marijuana has been legal for medical use for over a decade, and for recreational purposes since 2012.[1] This is to be expected when, as a Schedule I controlled substance, research on the clinical efficacy and safety of marijuana has been very limited, and medical marijuana training is not yet included as a part of the standard medical curriculum.

As the legal landscape rapidly changes, it becomes imperative for medical practitioners to keep pace. In general, there is an increasing need to provide guidance for physicians as it relates to medical marijuana. In June 2016, the Federation of State Medical Boards (FSMB) issued recommendations regarding the use of medical marijuana in patient care.[2] The list includes precautions that should be taken when a physician is considering recommending medical marijuana to their patient. These steps are similar to opioid guidelines in that they emphasize measures for patient evaluation, documentation of a treatment plan, and ongoing monitoring. This is a significant step within the medical community that acknowledges marijuana is well on its way to becoming a legitimate and more broadly accepted treatment option for conditions that include mood disorders, neurological and auto-immune conditions such as epilepsy, Parkinson's disease and multiple sclerosis, and in many states, for the treatment of chronic pain and severe muscle spasm.

What these recommendations are currently unable to provide, however, is clear clinical guidance. Specifically in workers' compensation, it is important to understand the potential benefits and risks of marijuana as it relates to conditions commonly seen in injured workers, including acute and chronic pain. And once those clinical factors are weighed, physicians must also consider the implications of marijuana outside of the clinical setting (e.g., in the workplace) in order to make the most informed treatment decision.

THE STATE OF PLAY

Legal status

Despite its federal Schedule I status, more and more states have enacted laws that allow for the use of marijuana to treat specific medical conditions.

Today, 25 states and the District of Columbia provide statutory language that allows for the comprehensive use of medical marijuana. This includes bills signed in Ohio and Pennsylvania in early 2016 that are not yet operational.[3]

The payer's perspective

Although cases remain few and far between, payer reimbursement for medical marijuana has now become a reality.

The majority of states do not require insurers to reimburse patients for medical marijuana costs, or leave reimbursement to the insurer's discretion. To date there are four states in which workers' comp insurers have issued reimbursement for a medical marijuana claim:

- Connecticut
- Maine
- Minnesota
- New Mexico

Why Consider Medical Marijuana?

Pain persists

Approximately 100 million adults in the United States experience chronic pain of some magnitude, resulting in significant quality of life implications, as well as cost consequences for payers and employers. The overall costs associated with chronic pain are upwards of $500 billion annually. More than half of these costs can be attributed to lost or diminished productivity due to chronic pain.[4]

Up to
$300 BILLION
in annual **lost productivity costs**
attributed to chronic pain

These statistics represent an unmet need to effectively address pain. Yet there have been no significant advances in the development of novel drug therapies for pain management over the last two decades. The fallout from opioids as the "go-to" pain treatment further underscores the urgency for effective alternatives with fewer associated negative consequences.

Understanding cannabis

Marijuana, often referred to as cannabis in scientific literature, is comprised of a variety of chemical components, including cannabinoids – which act on CB1 receptors in the brain, as well as CB2 receptors in the gut, to modulate neurotransmission – and THC, a partial agonist of the CB1 receptor that is responsible for producing the "high" associated with marijuana. The most common form of marijuana in the U.S. is *Cannabis sativa,* which contains more than 60 different cannabinoids.[5]

Research shows that cannabis products with low or no THC are preferable for medicinal use because they may effectively treat health conditions while minimizing the associated euphoric effects. For example the cannabinoid medicine Sativex® (nabiximols), which comprises a 1:1 THC/cannabinoid ratio and is approved for use in several European countries and Canada, demonstrated euphoria in only 2.2% of patients studied.[6]

OPIOIDS AND CHRONIC PAIN: LIMITED EFFICACY, VAST CONSEQUENCES

- Many side effects
- Lack of proven efficacy over long-term
- Not recommended for chronic pain by evidence-based guidelines
- High potential for tolerance, dependence or addiction
- High rates of misuse or abuse
- High overdose rates
- High rates of associated diversion

It is important to understand the potential benefits and risks of marijuana as it relates to conditions commonly seen in injured workers, including acute and chronic pain.

Clinical evidence

Since the DEA rescheduled marijuana as an illicit substance in 1970, there has been limited funding to support clinical studies to fully explore its efficacy as a treatment option for many conditions. This poses a conflict for the medical community: despite the legalization of medical marijuana in half the states, there is an absence of evidence-based guidelines on the subject. Even so, there is a moderate level of emerging medical evidence regarding the benefits of marijuana to treat specific types of pain.

JAMA 2015 systematic review[7]
(79 trials total; 8 assessing pain)

37%
reduction in pain

Sativex vs placebo, 2007; N=125[8]

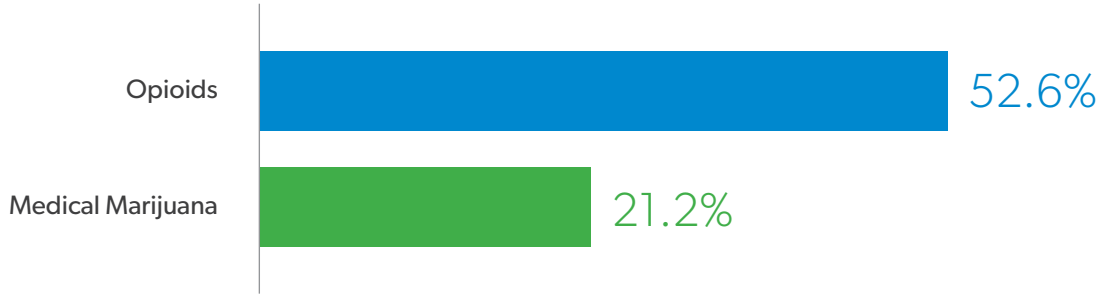
- 3x greater reduction in **pain intensity** (-1.48 vs -0.52)
- 5x greater improvement on **Neuropathic Pain Scale** (-10.07 vs -2.04)
- 20x greater improvement in **pain disability** (-5.61 vs -0.24)
- 45% improvement in **quality of life**

Medical marijuana and opioids

It's not uncommon that opioids and cannabis are often compared to one another, as they work similarly within the body's neurologic system.

However, there are some notable differences between the two substances in terms of their negative consequences. A new cross-sectional study of nearly 900 individuals receiving treatment for chronic pain demonstrated that "problematic use" as defined by DSM-IV criteria was more than twice as prevalent among those using opioids compared with those using medical marijuana.[9]

PROBLEMATIC SUBSTANCE USE IN CHRONIC PAIN[9]

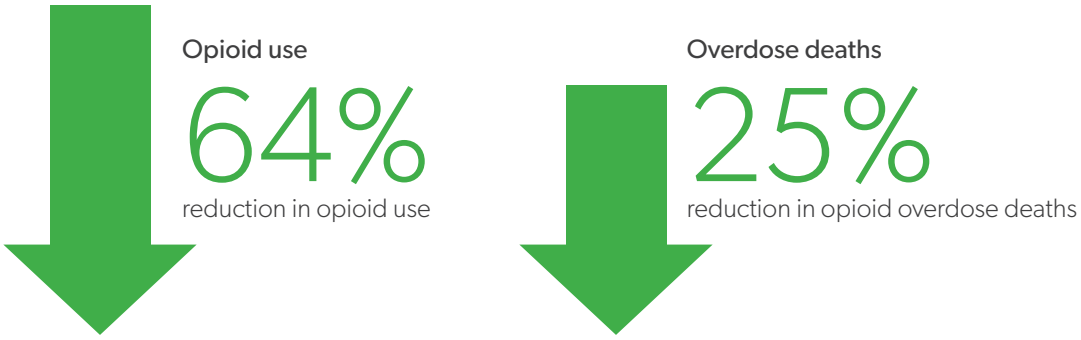


But the most stark difference between medical marijuana and opioids is their respective risk for fatal overdose. Fatalities due to marijuana toxicity are extremely rare, with fewer than 100 deaths reported by poison control centers over the past several years. The Centers for Disease Control and Prevention (CDC) reported zero deaths in 2014 due to marijuana overdose.[10]

NATIONAL OVERDOSE DEATHS, CDC 2014[10,11]

The inclusion of medical marijuana as part of the treatment plan may reduce or eliminate opioid use,[8] which can help counteract some of the negative consequences of opioids. In states where marijuana is legally recognized for medical treatment of select health conditions, prescription opioid overdose deaths are 25% lower than in states where medical marijuana is illegal.[12] While a specific cause-and-effect cannot be determined, the consistent trend points to a very significant and potentially positive benefit.

IMPACT OF MEDICAL MARIJUANA ON OPIOIDS[8,12]



Marijuana's impact may not be limited to opioids. Medicare Part D data from states where medical marijuana is legalized show reduced prescribing for medications to treat conditions including anxiety, depression, pain, seizures, sleep disorders and spasticity - all conditions for which marijuana might be recommended. These reductions represented a savings of $165 million in 2013.[13]

Cautionary Considerations

Marijuana and the workplace

If the opioid epidemic has taught us anything, it is that the risks of any medication should not be underestimated. While medical marijuana offers some potential benefits, it also carries serious risks.

Marijuana can cause neurocognitive impairment that lasts anywhere from hours to weeks, causing a negative impact on attention, concentration and abstract thinking. Common side effects of marijuana use include dizziness, dry mouth, fatigue, euphoria, disorientation, somnolence, confusion, loss of balance and hallucination.

All of these adverse effects pose risk in the workplace, where impairment can cause unsafe working conditions for the worker and those around her, specifically in safety-sensitive tasks, such as operating motor vehicles. Recent data released by the Washington Traffic Safety Commission demonstrated 10% of all drivers involved in fatal crashes had detectable levels of THC in their blood during or shortly after the time of the crash.[14] In addition to safety risks, productivity and overall job performance may also be adversely affected.

When considering marijuana as a treatment option for an injured worker, a more complete view of individual patient circumstances must be considered, such as:

- *Is the patient working while receiving medical marijuana treatment?*
- *If so, what job functions do they fulfill? Are they responsible for safety-sensitive tasks?*
- *What policies does their employer have in place regarding the use of medical marijuana during off-work hours?*

These are all factors that go beyond the purely clinical setting but must be included in the decision to recommend medical marijuana for the treatment of pain. Workplace safety and public health are still paramount.

Medical management

In addition to its legal and workplace complications, medical marijuana presents some unique challenges from a medical management perspective.

Potency, absorption rate and bioavailability of marijuana are all highly variable depending on a variety of factors, including the ratio of THC, the individual ingesting it, and the method of administration. For example, bioavailability of marijuana that is smoked can vary depending on factors

WORKPLACE SAFETY CONCERNS

Cognitive effects:
Inattention, confusion, somnolence

Psychomotor:
Impaired performance in road tests; driving and aircraft simulator studies

Decrements:
Attention, distance and time estimation; coordination in divided tasks

such as the strength of THC in the particular product, the number of inhalations over a period of time, the volume inhaled with each puff, and the duration each inhalation is held. These variations can make it difficult to determine dosing and administration.

And while the FSMB recommends ongoing monitoring of patients receiving treatment with medical marijuana, there is a lack of standardized testing for THC impairment. The American College of Occupational and Environmental Medicine (ACOEM) recommends plasma testing with a cut-off of 5ng/mL.[15] It is important to note that urine drug testing does not correlate clinically and only indicates use within the last 28-30 days.

These challenges cannot be adequately addressed until a federal rescheduling of medical marijuana allows for more rigorous clinical trials to fully determine efficacy, safety and the dose-response curve. Until then, physicians can only exercise their best clinical judgment based on their experience and the information they have at hand. Further education among physicians and workers' compensation professionals will be critical as the medical marijuana landscape continues to rapidly evolve.

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