



HAZE OF CONFUSION

How employers and insurers are affected
by a patchwork of state marijuana laws

June 2019

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Introduction

The spread of marijuana legalization continues apace.

As of June 18, 2019, more than 30 states, the District of Columbia, Guam and Puerto Rico have programs that allow qualifying patients to access medical marijuana products. Another 13 states permit non-intoxicating medical products.

Eleven states and D.C. permit recreational marijuana, where adults over the age of 21 can possess and use the drug. Recreational marijuana sales are booming.¹

But what is the impact of legal marijuana on workplace safety, employer duties and obligations and workers compensation insurance? There are few straightforward answers. Every state's laws and regulations governing these issues are different, not to mention that federal law prohibits marijuana outright. To complicate matters further, state laws and regulations are constantly changing. Employment and insurance activities once prohibited are often now permitted – or required.

This report examines the following questions:

- How does marijuana intoxication work and how might it impact workplace safety?
- What accommodations, if any, are employers expected to provide for workers that use marijuana?
- Does workers compensation insurance provide benefits to injured employees testing positive for marijuana? What about reimbursement to injured workers for medical marijuana?

Nothing in this report should be construed as providing interpretation or guidance related to local, state and federal law. Information is as of June 15, 2019.



Marijuana and U.S. law

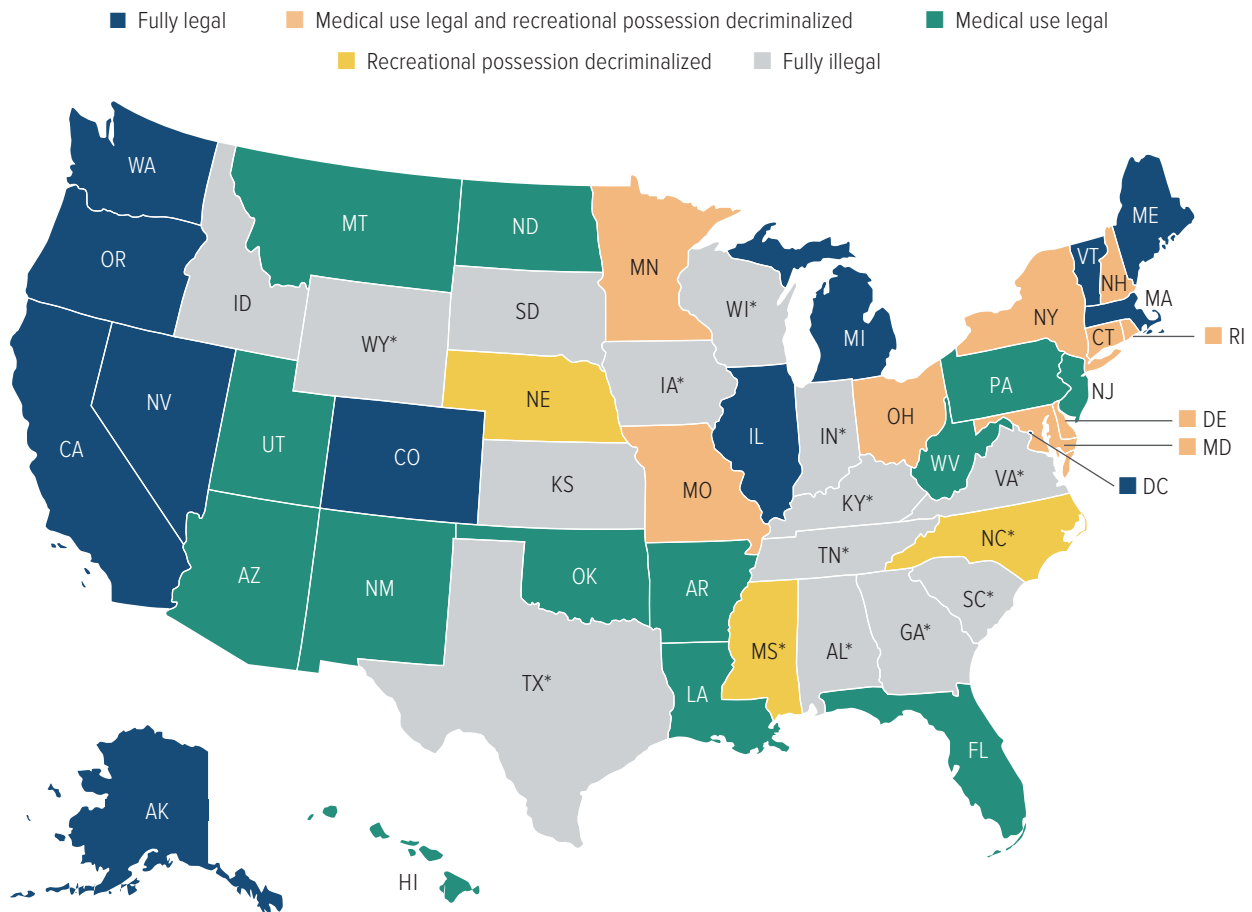
U.S. federal law first regulated marijuana under the Marihuana Tax Act of 1937.² The plant was subsequently subjected to U.S.-wide prohibition under the Controlled Substances Act of 1970 (CSA), which established a scheduling system for substances regulated under federal law.³ Marijuana is currently a Schedule I drug under the CSA, which defines Schedule I drugs as substances that have “no currently accepted medical use in the United States, a lack of accepted safety for use under medical supervision and a high potential for abuse.” Other substances under Schedule I include heroin, LSD and peyote.⁴

Despite the restriction of marijuana under federal law, in 1996 California became the first state to pass legislation

permitting a medical marijuana program. Since then more than 30 states and the District of Columbia have passed legislation permitting so-called comprehensive medical marijuana programs, which typically allow qualifying patients to access, possess and use marijuana and marijuana-related products.⁵ An additional 13 states have passed legislation permitting so-called limited access programs, which restrict patient access to products with low levels of delta-9-tetrahydrocannabinol (THC), the active chemical that induces user intoxication, or to non-intoxicating cannabidiol-only (CBD) products. (Please see page 16 for a discussion on THC and CBD.)

Since 2012 several states have also passed legislation permitting anyone over the age of 21 to possess and use marijuana regardless of their medical status, referred to as “recreational marijuana”.⁶ Most of these states also have or are developing regulations for a commercial market to support recreational marijuana sales.

Current marijuana laws by state



*CBD/Low THC medical program.
Source: *National Journal*; Ballotpedia, 2019.

Marijuana intoxication and workplace safety

Marijuana is an intoxicant. This has raised concerns about workplace safety where legalized medical and recreational marijuana is widespread.

Unfortunately, the unique nature of marijuana intoxication, the complications in determining user impairment and a lack of reliable data on workplace marijuana use make it difficult to determine how marijuana might affect workplace safety.

How marijuana intoxication works

The THC in marijuana causes intoxication. Common experiences include feelings of euphoria and relaxation; some users also report heightened sensory perceptions and altered perceptions of time.⁷

Most studies agree that marijuana intoxication impairs coordination, memory, associative learning, attention, cognitive flexibility and reaction time.⁸ Cognitive and psychomotor skills are thereby degraded to some degree – but by how much remains a matter of study and is subject to various factors, including the method of consumption; the type of marijuana product consumed; product potency; and user characteristics.

Marijuana and related products can be consumed in several ways, including:

- Inhalation (either by smoking or vaporizing) of dried plant matter or concentrates (such as hashish or kief)
- Oral ingestion (edibles, capsules, infusible oils)
- Sublingual ingestion (lozenges)
- Topical application (lotions, salves, oils)

Smoking often causes almost immediate intoxication, with impairment typically lasting two to four hours. Intoxication onset is more delayed for other methods – sometimes up to two hours for edibles (e.g. “special brownies”) – and impairment may last much longer.

Product potency is linked to THC levels. Potency varies considerably across marijuana products and can influence the degree of impairment. Smokable marijuana plant matter can range anywhere from 8 percent to 30 percent



Marijuana intoxication impairs coordination, memory, associative learning, attention, cognitive flexibility and reaction time.

THC, whereas high-quality hash oil could reach up to 80 percent THC.⁹ There is evidence that marijuana products have become more potent over time.¹⁰

User characteristics will also influence impairment. For example, chronic users may experience less acute impairment than non-chronic users.¹¹

Determining marijuana impairment: “THC persistence”

A key issue in determining the prevalence and effects of workplace marijuana impairment is “THC persistence.” Unlike alcohol, THC levels in a user’s body may not be an accurate indication of impairment.

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Compared with marijuana, determining alcohol impairment is relatively straightforward. The human body processes alcohol at a rate that allows blood alcohol concentration (BAC) to correlate closely with intoxication, making it an effective and accurate benchmark for measuring impairment.¹²



It is not currently possible to determine worker impairment based on THC levels alone.

The human body processes THC differently than alcohol. THC and its metabolites can remain in a user's blood-stream or urine for days or weeks, long after intoxication has ended. Chronic users may have low THC levels even without having recently consumed any marijuana. Furthermore, peak impairment can occur when THC levels have already begun to decline, and user-reported impairment can continue long after THC levels have dropped to low levels.

For these and other reasons it is not currently possible to determine worker impairment based on THC levels alone. Nor is there a "breathalyzer" equivalent for marijuana impairment, in part due to the various difficulties of measuring impairment based on THC levels.¹³

Workplace safety and legalized marijuana

Marijuana's intoxicating effects have caused concern that workers using marijuana, whether off-duty or on-duty, may endanger themselves and their colleagues, particularly in safety-sensitive occupations.

Marijuana and workplace accident risks: Conflicting findings. A RAND Corporation survey found that studies which examine the extent to which marijuana use increases the risk of occupational accidents often reach conflicting conclusions.¹⁴ One study found evidence of an association between on-duty impairment and occupational injuries, which stands to reason given marijuana's intoxicating effects. But other studies found no association or correlation between *general* marijuana use (i.e. off-duty use) and occupational accidents, whereas a third study found that the risk of injuries could rise with increasing consumption rates. The RAND survey concluded that "the proportion of occupational injuries attributed to acute substance use [of marijuana and other drugs] is relatively small."

A 2017 National Academies of Science, Engineering and Medicine (NASEM) report also surveyed the current state of knowledge and found conflicting results.¹⁵ Some studies found statistically significant increases in risk

for occupational injuries associated with marijuana use; others found no such increase. The various limitations and conflicting findings led NASEM to conclude that there is "insufficient evidence to support or refute a statistical association between cannabis use and occupational accidents or injuries."


There is some evidence that workers who test positive for marijuana are more likely to be involved in a workplace accident.

Marijuana and real-world injuries: Conflicting and insufficient data. However, there is some evidence that workers who test positive for marijuana are more likely to be involved in a workplace accident.¹⁶ There is also evidence that the rate of marijuana positivity in urine testing has been increasing.¹⁷ An analysis of Colorado self-reported marijuana use data between 2014 and 2015 found that the prevalence of current marijuana use among certain safety-sensitive occupations, including construction/extraction and farming/fishing/forestry, is higher than the overall state prevalence.¹⁸

But other studies have not found a link between marijuana legalization and workplace injuries. For example, one recent study found evidence that medical marijuana legalization may be associated with a *decline* in workplace fatalities among workers aged 25 to 44.¹⁹

Other studies have not found a link between marijuana legalization and workplace injuries.

Furthermore, the Canadian research organization Institute for Work and Health (IWH) has noted that test positivity rates are for conducted tests only and not for the entire worker population, which makes it difficult to extrapolate to overall worker marijuana use.²⁰ The IWH further noted that THC persistence makes it difficult, if not impossible, to determine whether a worker with a positive test was intoxicated at the time of an accident. In short, even though marijuana is an intoxicant, it is an open question whether an increase in positivity rates and a high prevalence of current marijuana use translates to an increase in workplace intoxication or impairment and, by extension, an increase in workplace accidents and injuries.

 **THC persistence makes it difficult, if not impossible, to determine whether a worker with a positive test was intoxicated at the time of an accident.**

To conclude: marijuana is an intoxicant and impairs the skills critical to safety-sensitive tasks such as operating a motor vehicle or complex machinery. However, it remains to be seen whether marijuana legalization is associated with an increase in workplace accidents and injuries, and to what extent general marijuana use increases the risk of workplace accidents.

Medical marijuana and workplace accommodation

How is the spread of marijuana legalization impacting an employer's ability to maintain a safe workplace? Back when marijuana was illegal under both state and federal law, employers would typically prohibit employees or employment candidates from using marijuana as a condition of employment.

As states have begun to permit medical marijuana, the situation has gotten more complicated.

On-duty medical use

No state that permits medical marijuana requires employers to accommodate on-duty marijuana use and possession, or to tolerate impairment. States will often explicitly make clear that medical marijuana laws do not affect an employer's drug-free workplace policy.

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Off-duty medical use

States differ on whether an employer must accommodate off-duty medical marijuana use. Various courts have also taken conflicting positions.

This legal patchwork has created significant difficulties for employers, particularly for those who engage in safety-sensitive operations or who require drug tests of prospective and current employees.

Some states protect patients from discrimination or adverse employment actions based solely on their off-duty marijuana use or on their status as medical marijuana cardholders. There can be exceptions if the employer would be violating federal law or if permitting off-duty marijuana use could cost the employer

federal benefits, or if the employee undertakes safety-sensitive tasks.

Thirteen states extend some employment protections to medical marijuana cardholders (either by statute or by court decision). They are: Arizona, Arkansas, Connecticut, Delaware, Illinois, Maine, Massachusetts, Minnesota, Nevada, New York, Pennsylvania, Rhode Island and West Virginia.²¹

For example, Arizona's medical marijuana law prohibits employers from discriminating against job applicants and employees based on their status as medical marijuana cardholders or for testing positive for marijuana, unless the employee was also impaired during the scope of their employment.²²



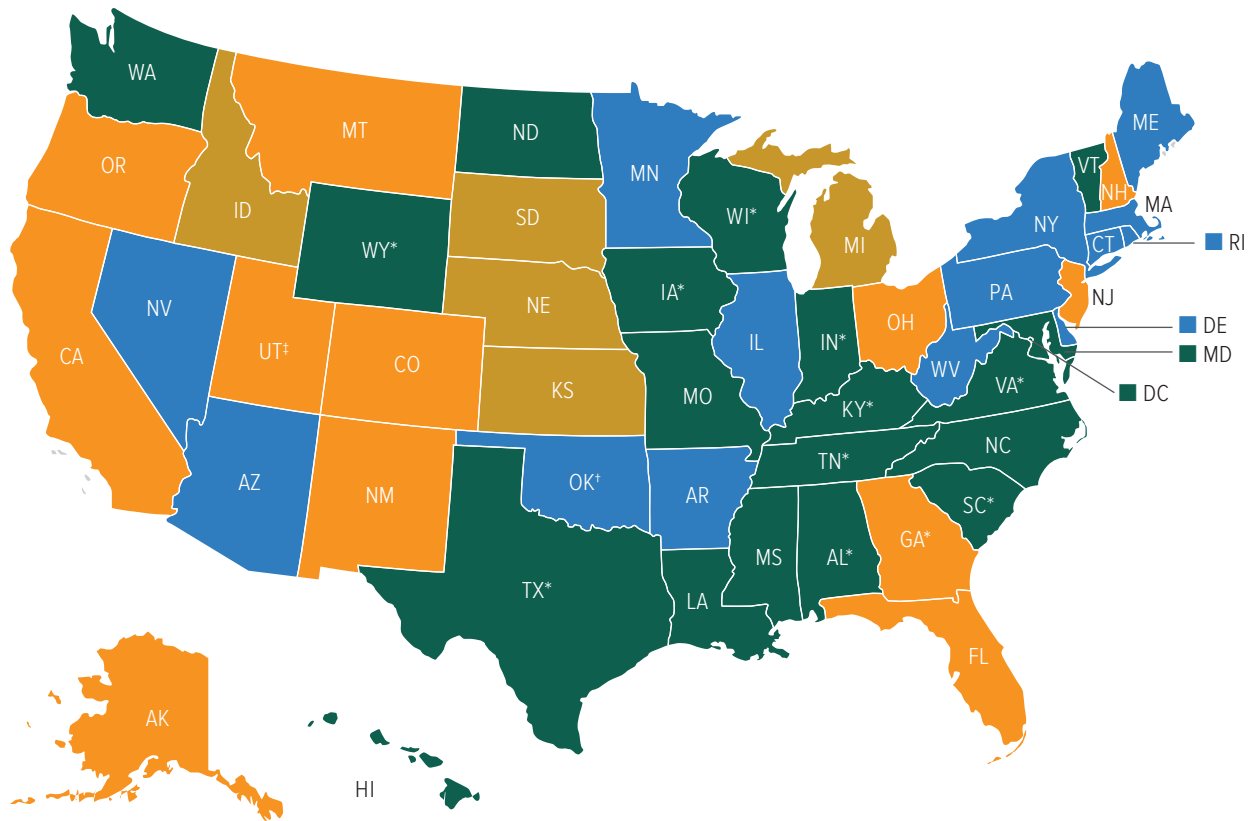
Recreational marijuana and the workplace

No state protects on-duty recreational marijuana use. State laws will often explicitly state that recreational marijuana laws do not affect an employer's drug-free workplace policy.

Furthermore, only one state, Nevada, protects prospective employees for off-duty recreational marijuana use. The law prohibits employers, with some exceptions for safety-sensitive positions, from denying employment to a prospective employee due to a drug test indicating the presence of marijuana.²³ However, no state requires an employer to accommodate off-duty recreational marijuana use by its employees. For a brief time, Maine was the only state that required off-duty accommodation. The state's original recreational marijuana law included provisions prohibiting employers from refusing to enroll or from penalizing a person for the sole reason that they consumed marijuana offsite. This provision was controversial at the time, in part because drug tests do not accurately determine when someone consumed marijuana.²⁴ On May 2, 2018, subsequent legislation removed the provision.²⁵

Off-duty medical marijuana use and employment protections

■ Antidiscrimination/reasonable accommodation for off-duty use ■ Laws do not protect off-duty use ■ Laws do not address off-duty use ■ No medical marijuana program



*CBD/Low THC medical program.

†Oklahoma has not yet released its final medical marijuana rules.

‡Provides limited protections to state employees.

Source: Insurance Information Institute, 2019.

Some of these states also require employers to provide “reasonable accommodations” to medical marijuana cardholders. For example, Nevada’s medical marijuana law requires employers to make reasonable accommodations for the needs of a medical marijuana patient, as long as this accommodation does not pose any risk to persons or property, or places an “undue hardship” on the employer.²⁶

Sometimes, these protections may fall under existing state disability laws. For instance, New York’s medical marijuana law includes a provision that affirms that medical marijuana patients have a disability.²⁷

Courts may also extend protections. For example, while Massachusetts medical marijuana law does not explicitly protect medical marijuana users, the Massachusetts

Supreme Judicial Court found that state disability discrimination laws could. In a 2017 case the court found in part that a medical marijuana user’s qualifying condition could constitute a “disability” and as such the user could be protected under the state’s handicap discrimination law.²⁸

Courts in Connecticut, Delaware and Rhode Island have also extended some protections to medical marijuana cardholders.²⁹

Again, none of these states in any way require employers to accommodate the on-duty use of medical marijuana or to accommodate working under the influence of marijuana.

However, **14 states with medical marijuana programs do not protect patients from adverse employment actions.**

They are: Alaska, California, Colorado, Florida, Georgia, Michigan, Montana, New Hampshire, New Jersey, New Mexico, Ohio, Oregon, Utah and Washington. (Ten states do not address the issue at all.)

In contrast with the Massachusetts Supreme Judicial Court decision, courts in other states have found that state medical marijuana laws do not provide employment protection, typically arguing that off-duty marijuana use violates federal law.

Courts in other states have found that state medical marijuana laws do not provide employment protection.

For example, in 2015 the Colorado Supreme Court sided with an employer in a case involving an employee who was fired after failing a drug test for medical marijuana.³⁰ In that case the plaintiff alleged that he was wrongfully terminated under the state's "lawful activities statute," which protects employees against adverse employment actions when engaging in "lawful activities" off employment premises and outside of working hours. However, the court found that the plaintiff's medical marijuana use was not a "lawful activity" since such activity is prohibited under federal law.

Courts in Montana, New Jersey, New Mexico, Oregon and Washington state have also upheld certain employment actions against medical marijuana users.³¹



Medical marijuana accommodation and federal law

As a Schedule I drug, no marijuana use (medical or otherwise) is protected under federal law, and federal law does not protect medical marijuana users from adverse employment actions. For example, courts have generally found that federal laws such as the Americans With Disabilities Act do not protect medical marijuana users.


No marijuana use (medical or otherwise) is protected under federal law.

The U.S. Federal Motor Carrier Safety Administration (FMCSA) affirmatively *requires* employers to test a prospective commercial vehicle operator for drugs, including marijuana, and enforces a zero-tolerance policy for positive marijuana testing. Other safety-sensitive jobs have federally mandated drug testing requirements, including for marijuana. Additionally, under the Drug-free Workplace Act of 1988, all federal contractors receiving more than \$100,000 or any organization receiving a federal grant must "establish and maintain a drug-free workplace policy."³²

In October 2018 the U.S. Occupational Safety and Health Administration (OSHA) published a memorandum clarifying its 2016 final rule on post-incident drug testing, including marijuana. The memorandum states that most instances of workplace drug testing are permissible, including random drug testing; testing under a state workers compensation law; and testing in the course of an investigation of a workplace incident.³³

Could medical marijuana impact employment practices liability insurance (EPLI)?

EPLI policies can vary widely from insurer to insurer, but often cover businesses against claims by employees alleging discrimination or wrongful termination subject to certain coverage triggers. As marijuana and employment issues evolve, EPLI could begin to be affected, especially if states and/or courts begin to take a more affirmative stance that disability laws and other accommodation laws cover medical or recreational marijuana use.



Marijuana and workers compensation: A legal patchwork

Legal marijuana is not only a concern for employers and employment-practice liability insurers. Legal marijuana has also raised significant issues for workers compensation insurers and self-insured employers.

There are at least three workers compensation issues to consider related to marijuana use:

- Does workers compensation cover a workplace injury in which the injured employee tested positive for marijuana?
- Does workers compensation reimburse medical marijuana expenses incurred by an injured employee?
- If so, how does reimbursement work?

The answers to these questions will largely depend on the state. For one, workers compensation is regulated on the state level. For another, medical marijuana laws can vary widely from state to state. And how workers compensation boards and courts interpret state statutes can also vary considerably. A discussion of each question follows.

Does workers compensation cover a workplace accident in which the injured employee tested positive for marijuana?

Workers compensation laws in most states restrict benefits if an employee was intoxicated at the time of injury or if the intoxication was a “proximate cause” of the injury. Some states limit compensation if an injured employee refuses to take a drug test.

However, it is currently difficult to determine whether an injured worker was impaired by marijuana when an accident occurred.

As stated previously, unlike alcohol, **THC levels in a user’s body may not be an accurate indication of impairment.** THC and its metabolites can remain in a user’s bloodstream or urine for days or weeks, long after intoxication has ended.

Many states will “presume” that a positive drug test indicates that an employee was impaired.



For these and other reasons it is not possible to determine employee impairment based on THC levels alone. Nor is it possible to determine accurately when a user consumed marijuana based on the THC levels in their body.

States have taken different stances on how THC persistence and marijuana impairment impact workers compensation benefits.

For instance, many states will “presume” that a positive drug test indicates that an employee was impaired; however, some of these states will also allow employees to rebut the presumption with other evidence. Such “rebuttable presumptions” can affect how a positive drug test will determine workers compensation benefits. For example, the Oklahoma Court of Civil Appeals ruled in favor of an injured worker who tested positive for marijuana, writing that “the presence of an intoxicating substance in the blood does not automatically mean that person is intoxicated.”³⁴

An earlier Ohio case came to a similar conclusion.³⁵

Does workers compensation cover medical marijuana expenses incurred by an injured employee?

This simple question has few simple answers. States, courts and workers compensation authorities have differed significantly on how to treat medical marijuana reimbursement. And the regulatory and legal environment is evolving rapidly.

The issue can change dramatically even within a state. In some cases, a workers compensation board will find that marijuana *is* reimbursable, only for that decision to be overturned by a court. This happened in Maine.³⁶ In other cases, the opposite happens. A court will find that regulators *should have* found that marijuana is reimbursable. This happened in New Hampshire.³⁷

In many cases the question becomes whether reimbursement can be compelled for a substance that is illegal

under federal law. The answer depends on the nuances of each case, the relevant state laws in question and the analysis of each individual judge or commission.

In the Maine case mentioned above, the state Supreme Court held that an employer was not required to reimburse for medical marijuana, since such a requirement could create a conflict between federal and state law. But in New Mexico the state Court of Appeals upheld a decision that required an employer to reimburse, writing that the employer failed to cite any federal law that it would be violating in doing so.³⁸



States, courts and workers compensation authorities have differed significantly on how to treat medical marijuana reimbursement.

Reimbursement: A handful of states hold that medical marijuana is a permissible and reimbursable treatment under workers compensation. Whether workers compensation insurers are *required* to reimburse medical marijuana expenses depends on the state.

- **Connecticut:** In 2016 the state’s Workers Compensation Commission affirmed a trial commissioner’s finding that medical marijuana constitutes a “reasonable and necessary medical treatment” and is therefore reimbursable.³⁹ The Connecticut Supreme Court is reviewing this case.
- **Minnesota:** In 2015 the Minnesota Department of Labor and Industry adopted a rule that removed marijuana from its “illegal substances” list for the purposes of reimbursement for medical treatment.⁴⁰
- **New Jersey:** In 2017 an administrative judge found that a private employer was required to reimburse an injured worker for medical marijuana.⁴¹ A 2018 workers compensation judge made a similar finding.⁴²

- **New Hampshire:** In 2019 the New Hampshire Supreme Court held that the state’s compensation appeals board had erred when it determined that a workers compensation insurer was prohibited from reimbursing for medical marijuana under state statute, since such marijuana use was found to be “reasonable, medically necessary and causally related to [the] work injury.”⁴³ However, the court remanded the question of whether such reimbursement would violate federal laws back to the board.
- **New Mexico:** Beginning in 2014 several state court cases determined that medical marijuana is a reasonable and necessary treatment and therefore could be reimbursed. State rules also provide general provisions for medical marijuana reimbursement, as well as a fee schedule for such reimbursement.⁴⁴ New Mexico is the only state to provide a fee schedule. The maximum reimbursable amount for a calendar year is \$11,058.⁴⁵
- **New York:** The state’s Workers’ Compensation Board determined that medical marijuana is reimbursable if certain criteria are met.⁴⁶

More states may soon join this list. For example, the Maryland Legislature is currently considering a bill that would require reimbursement.⁴⁷

Unclear whether reimbursable: Many state medical marijuana laws specifically exempt certain entities from the reimbursement requirement, usually health insurance providers. For example, Colorado code states that “[n]o governmental, private, or any other health insurance provider shall be required to be liable for any claim for reimbursement for the medical use of marijuana.”⁴⁸

It has been argued that these types of exemptions do not include workers compensation insurers. Consider the New York Workers’ Compensation Board decision cited above. In that decision the board acknowledged that New York state law states that nothing requires “an insurer or health plan under [the public health law] or the insurance law to provide coverage for medical marijuana.” The board found that this exemption only applies to health insurers and *not* workers compensation insurers.

Others have argued these exemptions *could* include workers compensation carriers. Consider a California case currently being litigated. Under California code, the state’s medical marijuana program does not require a “health insurance provider” to be liable for reimbursing medical marijuana.⁴⁹ As in New York, a California workers compensation judge found medical marijuana to be reimbursable under workers compensation. But the state’s Workers Compensation Appeals Board rescinded the judge’s order, finding that more analysis is needed.⁵⁰



Many state medical marijuana laws specifically exempt certain entities from the reimbursement requirement, usually health insurance providers.

Reimbursement not required: Other state medical marijuana laws specifically exempt workers compensation insurers and employers from being required to reimburse medical marijuana.

For example, Arizona statute specifically states that nothing in its marijuana laws requires “a government medical assistance program, a private health insurer or a workers compensation carrier or self-insured employer providing workers compensation benefits to reimburse a person for costs associated with the medical use of marijuana.”⁵¹

The Maine case cited above similarly held that reimbursement for medical marijuana was not required.

Reimbursement prohibited or ineligible: In contrast, some states specifically *prohibit* reimbursement or make medical marijuana ineligible for reimbursement. For example, in 2017 Florida and North Dakota passed legislation prohibiting reimbursement for medical marijuana.⁵²

Ohio’s Bureau of Workers’ Compensation has stated that preexisting laws make marijuana ineligible for reimbursement. These laws require that covered medications be approved by the FDA, dispensed from a pharmacy and be on the pharmaceutical formulary.⁵³ Medical marijuana does not satisfy these conditions and is therefore ineligible for reimbursement.

If reimbursable, how does reimbursement work?

As of now, an injured worker who qualifies for reimbursement under workers compensation is responsible for any purchases from a licensed medical marijuana dispensary. The worker then bills the workers compensation insurer or employer.

An injured worker who both qualifies for reimbursement under workers compensation is responsible for any purchases from a licensed medical marijuana dispensary.

Cash business: The most likely reason for this arrangement is that federal law effectively restricts marijuana transactions to cash payments or debit card withdrawals.

In 2014 the U.S. Treasury's Financial Crimes Enforcement Network (FinCEN) released guidance clarifying the agency's expectations for compliance under the Bank Secrecy Act for financial institutions seeking to service marijuana-related businesses.⁵⁴ However, the FinCEN guidance does not change marijuana's legal status under federal law nor does it have binding legal authority. Many financial institutions remain wary of opening accounts or lines of credit for such businesses. As of September 30, 2018, only 375 banks (out of more than 4,700) and 111 credit unions (out of more than 5,500) are providing banking services to marijuana-related businesses.⁵⁵

Reimbursement concerns: Dosages and expenses

Proper dosages are poorly understood, non-standardized: Medical marijuana is not a prescription drug. Rather, patients receive physician recommendations or certifications that the patient qualifies for participation under a state program. States typically do not require these recommendations to include dosage parameters.⁵⁶ Indeed, proper dosages for medical marijuana are still poorly understood and are not standardized across the various state medical programs.⁵⁷ Furthermore, the potency of available medical marijuana and the maximum permissible purchasing amount varies by state. There is no standardized "serving" of marijuana, nor are potency levels standardized across products.

All these factors may complicate a compensation payer's ability to effectively control and monitor treatment.

Expenses can vary widely: As previously mentioned, New Mexico is the only state with a fee schedule for medical marijuana. Under the schedule, the maximum reimbursable amount for "one unit" is \$12.02, with one unit equaling 1 gram dry weight equivalent. Maximum quantity per calendar quarter is 230 units.

The cost of marijuana can vary significantly across states.

However, the cost of marijuana can vary significantly across states. States with commercial recreational marijuana markets often have the lowest costs (though local and state taxes can impact the cost at point-of-sale); whereas states without commercial markets or with restricted production capacities will often have more expensive marijuana. This heterogeneity may complicate an insurer's ability to control costs.



There is no standardized "serving" of marijuana, nor are potency levels standardized across products.



Conclusion

As marijuana legalization spreads, concerns related to workplace safety, employee accommodation and workers compensation will only continue. How will medical and recreational marijuana use impact workplace safety? How can and should employers handle medical marijuana use among their employees? How will workers compensation operate in the growing number of states with medical marijuana? Unfortunately, few simple answers are forthcoming. Much depends on the decisions various states, courts and regulators make. Employers and insurers will continue to grapple with a rapidly changing environment, perhaps for years to come.

Appendix: Marijuana as “medicine”

What is marijuana?

Marijuana is a plant of the species *Cannabis sativa L.*, part of the genus *Cannabis L.*⁵⁸

The genus includes both industrial hemp and marijuana, which are chemically distinct from one another.⁵⁹ Marijuana contains appreciable amounts of delta-9-tetrahydrocannabinol (THC), the active chemical that induces user intoxication. Industrial hemp, on the other hand, is typically understood as a cannabis plant containing not more than 0.3 percent THC on a dry weight basis.⁶⁰ These so-called “trace THC amounts” are too low to induce intoxication. Both industrial hemp and marijuana also contain several other, non-psychoactive cannabinoids such as “cannabidiol” (CBD).⁶¹

There is evidence that marijuana has been consumed for thousands of years, often for medicinal purposes. The plant has been used as a patent medicine since at least 1850, when the *United States Pharmacopoeia* described the plant for the first time.

Medical marijuana is not currently a prescription drug. State medical marijuana programs typically provide physicians with a set of medical conditions that could qualify a patient to use marijuana or non-intoxicating CBD products. These conditions vary by state but often include cancer, chronic pain, glaucoma, epileptic seizures, severe nausea and migraines.

Importantly, physicians in these states typically do not “prescribe” marijuana like they do opioids and other drugs. Rather, physicians will “certify,” “recommend,” or “authorize” (the exact wording depends on the state) that a patient qualifies under a state program to purchase marijuana products.

With a “recommendation” in hand, the patient can then purchase products from a dispensary, subject to various state-specific limitations, such as how much marijuana they can buy over a certain period of time.

A “prescription” for a medical drug, on the other hand, has a specific meaning. The Kansas City Medical Society notes that medical drugs are supported by years of study that can provide guidelines for dosages and plans of care. The U.S. Food and Drug Administration (FDA) regulates these drugs. Patients with a prescription receive these drugs from a certified pharmacist.⁶⁴

Not so with marijuana. Though some states do provide physician dosage recommendations, marijuana dosages are not well understood. The FDA has “not approved marijuana as a safe and effective drug for any indication.”⁶⁵ Medical marijuana dispensaries are not pharmacies, though in some states they may employ pharmacists or medical directors on staff. Research on the efficacy of marijuana as treatment for various conditions is ongoing.



THC: Psychoactive cannabinoid chemical found in the resin produced by marijuana plants. This chemical is responsible for a marijuana user’s intoxication.⁶²

CBD (cannabidiol): Non-psychoactive cannabinoid chemical found in marijuana plants. There is some evidence that CBD may have therapeutic uses.⁶³

The FDA has to date approved one marijuana-derived, CBD-based drug, Epidiolex, for treating seizures associated with certain types of epilepsy.⁶⁶ The FDA has also approved two non-psychoactive drugs, Marinol and Syndros, as safe and effective. Both include a synthetic form of THC called Dronabinol. These drugs are used to treat anorexia in AIDS patients and nausea and vomiting from chemotherapy treatment.⁶⁷

Evidence for therapeutic impacts of marijuana use: The U.S. National Institutes of Health has stated that “[w]hether marijuana has therapeutic benefits that outweigh its health risks is uncertain.”⁶⁸ In 2017 the National Academies of Sciences, Engineering and Medicine (NASEM) published a review of the current state of evidence for the health effects of cannabis and cannabinoids.⁶⁹

The review did acknowledge that many of its findings may be limited, mostly because the legal status of marijuana has historically impeded research. Nonetheless, the review’s authors found “conclusive or substantial evidence” that cannabis or cannabinoids can effectively treat, among other things: chronic pain, nausea and vomiting associated with chemotherapy and spasticity from multiple sclerosis. However, they found limited evidence for effectiveness in treating AIDS-related weight loss, anxiety and PTSD symptoms. The review did not find enough evidence to comment on effectiveness for cancer treatment.

Marijuana cannot cause overdose death but it can potentially cause temporary psychosis. There are no documented instances of an adult dying from an overdose of marijuana alone.⁷⁰ However, in rare instances a user may experience a psychotic reaction to the drug or high levels of anxiety – in some cases, these side effects could lead a user to seek medical treatment. Such negative effects are often experienced after consuming edible marijuana products, which are often more potent and take longer to induce intoxication.

Indeed, one of the strongest conclusions in the NASEM report was that it found an association between marijuana use and subsequent development of psychotic disorders, including schizophrenia. However, the authors disavowed finding any causality between marijuana use and psychotic disorders.

Does marijuana substitute for opioids?

Some have suggested that marijuana may be an effective substitute for opioid use to treat chronic pain. There is some evidence that medical marijuana legalization is associated with decreases in opioid prescribing rates, opioid use, overdose deaths and opioid addiction treatment.⁷¹ However, a recent Stanford Medicine study contradicted some of these earlier findings. Researchers in the subsequent study found no evidence that medical marijuana availability reduces fatal opioid-related overdoses.⁷² Furthermore, others have even noted that there is some evidence that marijuana use may *increase* opioid misuse.⁷³ More research is needed before firm conclusions can be reached.

Endnotes

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