Marijuana Legalization in the Midwest: The Impacts Updated

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Introduction

The Midwest HIDTA Region

The Midwest HIDTA's seven-state area consists of Iowa, Kansas, Missouri, Nebraska, North Dakota, South Dakota, and the three Illinois counties of Madison, Rock Island, and St. Clair. The region spans over 428,000 square miles, encompasses 73 HIDTA-designated counties, and is considered the largest of the Office of National Drug Control Policy's 33 HIDTA regions. It is as varied as it is vast, and incorporates major urban cities, separated by suburban sprawl and rural countryside. Within the Midwest HIDTA are more than 4,300 miles of interstate highways and an international border stretching over 300 miles. Its central location and intertwining roadways make the region ideal for drug trafficking organizations and criminal entrepreneurs intent on transporting drugs into or through to other destinations.

Purpose

This is the third report on the impact of marijuana legalization in the Midwest. The purpose of this report is to provide an update to the information presented in the second report, specifically highlighting legislative updates and statistical changes following the publication of the second report. This report will utilize data and trends from states with operational medical and/or adult use marijuana programs in an attempt to mitigate the future consequences of the marijuana programs already implemented by Midwestern states, and those contemplating a program. California, Colorado, Oregon, and Washington will frequently be cited and used for comparison, as their marijuana programs have existed long enough for an adequate amount of data to be collected; whereas Missouri's 2022 adult use marijuana legalization is too recent for accurate data to be compiled. This data includes, but is not limited to:

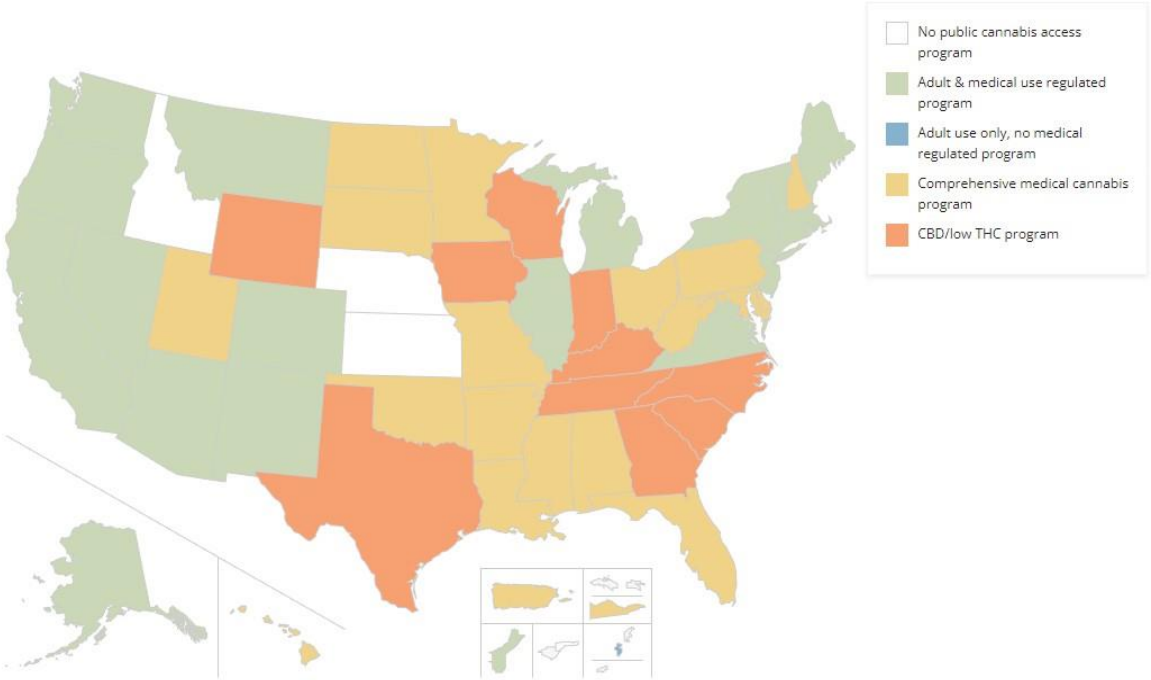
- Marijuana-related crime.
- Marijuana diversion.
- Drugged driving and traffic fatalities.
- Adult and youth marijuana use.
- Impacts on health; and
- Environmental impacts.

Background

As of March 2023, four Midwest HIDTA states have adopted some form of legalized marijuana within their jurisdiction: Iowa, Missouri, North Dakota, and South Dakota.

- Iowa - Authorized the medical use of cannabidiol (CBD) in 2017 for those with a qualifying medical condition.
- Missouri – Medical marijuana approved in 2018, and adult use in November of 2022.
- North Dakota – Medical marijuana approved in 2016.
- South Dakota – Medical and adult use approved in 2020; however, on November 24, 2021, South Dakota Supreme Court ruled the adult use measure was unconstitutional, therefore adult use remains illegal in South Dakota.

Figure 1: Map of State Cannabis Programs as of May 2022



Source: National Conference of State Legislatures

Executive Summary

Marijuana is the most widely available and commonly abused illicit drug within Midwest HIDTA and the United States. The 2022 Midwest HIDTA Threat Assessment reported fifty-one percent of Midwest HIDTA's initiatives ranked marijuana within their top three drug threats. The ongoing legalization of marijuana invokes consequences that are both extensive and underreported, and its impacts on public health, safety, and the economy are observable in many states with legalized access. The Midwest is not immune to the adverse effects of marijuana legalization.

Marijuana decriminalization has created a readily available supply of potent domestically cultivated marijuana for transport into the region. This now includes states within, and bordering, Midwest HIDTA that have legalized various forms of marijuana. Additionally, reports from regional law enforcement agencies suggests that criminal organizations may clash with one another for the right to distribute marijuana from "legal" states in Midwestern territory. This report will examine those and other potential effects in the following sections. Throughout the course of this report, the words "cannabis" and "marijuana" are used interchangeably, dependent upon the source documentation. Regardless of which word is utilized, the reference is being made to a product derived from the plant *Cannabis sativa* that contains tetrahydrocannabinol (THC), whether the end state referred to is the dried leaves, flowering top, tincture, an edible, or a beverage.

Chapter 1: Legal Overview

- Missouri, South Dakota, and North Dakota are the three states in the Midwest HIDTA region with operational marijuana programs.
- Iowa operates an mCBD program,[A] South Dakota and North Dakota both operate medical marijuana programs, and Missouri as of 2022 has authorized medical and adult use marijuana programs.

[A] Iowa's mCBD program now allows for products containing delta-9 THC.

Chapter 2: Marijuana Reporting Systems

- Seed-to-sale tracking systems are ineffective at preventing the diversion of marijuana from "legal" dispensaries and cultivation facilities.
- Despite claims otherwise, no marijuana reporting system is capable of providing total accountability of commercially-grown marijuana.

Chapter 3: National Security/Human Trafficking

- Following the trend towards marijuana legalization, and the dramatic rise of production within the United States of high-potency marijuana, Chinese investors have emerged as a new source of funding and labor for illegal marijuana production.
- Marijuana production sites have been initiated in multiple states, to include New Mexico and Oklahoma. These sites have sometimes been established on tribal lands, taking advantage of what can be confusion amongst law enforcement officials to quickly establish marijuana farms and make substantial profits, utilizing both immigrant and tribal labor.
- The potential for this to occur is especially concerning for the states comprising Midwest HIDTA, as there are a substantial number of tribal lands located within the region.

Chapter 4: Diversion & Illegal Marijuana Grows

- Illegal growing operations and the diversion of marijuana from legal markets are the primary suppliers of marijuana to illicit markets.
- In 2022, Midwest HIDTA enforcement initiatives seized 18,972,335 grams of drugs measured by weight; marijuana, in its multiple forms, represented 73 percent of this total drug weight, 13,807,247 grams.
- Of the 1,111 Domestic Highway Enforcement national seizures involving marijuana in 2022, 66 percent (735) originated from states with adult use marijuana programs and 90 percent (1,003) originated from states with either a medical or adult use marijuana program.
- Seventy-seven percent of the marijuana and marijuana products mailed into Midwest HIDTA between October 2022 and December 2022 originated from California, Colorado, Oregon, and Washington.

Chapter 5: Marijuana-related Crime

- Missouri, North Dakota, and South Dakota experienced increases in violent crime offenses following passage of medical marijuana legalization.
- North Dakota and South Dakota experienced increases in property crime offenses following the passage of medical marijuana legislation.
- Following the legalization of medical marijuana in Missouri in 2018, the number of homicides, violent crime incidents, and weapons violations increased every year since.
- The Drug Enforcement Administration (DEA) found that illicit marijuana markets are increasing in states that have legalized the possession, use, and cultivation of marijuana.

Chapter 6: Impaired Driving & Traffic Fatalities

- Numerous studies have demonstrated that marijuana use impairs an individual's ability to safely operate a motor vehicle.
- Following medical marijuana legalization, the percentage of total traffic fatalities involving a driver testing positive for cannabinoids increased in one of the three Midwest HIDTA states with a marijuana program.

Chapter 7: Accessibility & Use

- 75 percent of states with a legalized adult use marijuana program and 57 percent of states with a legalized medical marijuana program moved up in the national ranking of past month marijuana usage by those aged 12 to 17 from 2017 to 2019.
- Past-month marijuana usage from 2017-2019, for youth aged 12 to 17, increased following legalization in Iowa and Missouri.
- Past-month marijuana usage from 2017-2019, for adults aged 18 and older, increased following legalization in Missouri and North Dakota.
- The Iowa Youth Survey (IYS) found the percentage of past-month marijuana use in grades six to twelve decreased 16.3 percent, from 4.3 to 3.6 percent between 2018 and 2021.

- The Missouri Student Survey found the percentage of past-month marijuana use increased 48 percent between 2018 and 2020.

Chapter 8: Impacts to Health

- Marijuana-related emergency department visits increased in Iowa, Missouri, and North Dakota following the legalization of mCBD/medical marijuana.
- Marijuana-related hospitalizations increased in Missouri and North Dakota following the legalization of medical marijuana.
- Marijuana-related exposure calls to state poison centers increased in Iowa, Missouri, and North Dakota following medical marijuana legalization.
- Frequent marijuana use is associated with several adverse health effects, including brain development, anxiety, depression, psychosis, schizophrenia and suicide.
- Marijuana use in adolescence and young adulthood increases the likelihood of abusing other illicit drugs later in life.

Chapter 9: Environmental Impacts & Concerns

- The marijuana industry accounted for one percent of all electricity used in the U.S. in 2016.
- The cultivation and processing of marijuana emits volatile gases that contribute to ground-level air pollution.
- Water diversion, wildlife poisoning, and the destruction of habitats are common characteristics of illegal outdoor marijuana growing operations.

Chapter 10: Budgetary and Taxation Impacts

- In the states where legalization has occurred, they have learned taxing marijuana is complicated and the revenue stream is inconsistent.
- The societal impacts incurred by legalization (i.e. expanding illicit market sales, workforce shortages, addiction rates, and homelessness), are a common omission by proponents.
- Post-legalization, marijuana industry leaders lobby legislatures to reduce their taxes, despite these very taxes being one of their arguments for legalization.

Chapter 11: Regulatory Overview

- All four of the states where some form of medical marijuana has been legalized, require individuals who are authorized to purchase medical marijuana to carry a medical marijuana identification card.
- All four states where some form of medical marijuana has been legalized, require manufacturing facilities and dispensaries to implement inventory tracking systems.

Chapter 1: Legal Overview

Introduction

As of February 2023, twenty-one (21) states have legalized adult use marijuana and thirty-nine (39) states have legalized some form of medical marijuana. Nearly every state surrounding those of the Midwest HIDTA region have enacted some form of marijuana legalization. This includes Montana, Colorado, Oklahoma, Arkansas, Kentucky (CBD/low tetrahydrocannabinol (THC) program), Illinois, Wisconsin (CBD/low THC program), and Minnesota. Kansas and Nebraska are the only two states within the Midwest HIDTA region without state-sanctioned marijuana programs.

State Marijuana Programs of the Midwest HIDTA Region

North Dakota became the first state in the Midwest HIDTA to approve a medical marijuana program in 2016. The following year, Iowa approved an Medical Cannabidiol (mCBD) program in 2017; while mCBD is permitted, a tetrahydrocannabinol (THC) content greater than .3% is still prohibited, as this would raise it to the level of marijuana. Missouri voters approved a medical marijuana program in 2018. Most recently, South Dakota approved both a medical and adult use marijuana program in 2020, although a circuit court ruling overturned adult use marijuana in early 2021. In November 2022, adult use marijuana was again on the ballot in South Dakota, but this time was rejected by the voters. A regional timeline of when the marijuana legislation was enacted is included below:

- 2016: North Dakota Medical Marijuana Legalization (Statutory Measure 5)
- 2017: Iowa Medical Cannabidiol Act (Code Chapter 124E)
- 2018: Missouri Medical Marijuana and Veteran Healthcare Services Initiative (Amendment 2)
- 2020: South Dakota Marijuana Legalization Initiative (Amendment A)
    - 2022 South Dakota Adult Use Initiative (Measure 27) did not pass
- 2022: Missouri Adult-Use Constitutional Amendment (Amendment 3)

As of March 2023, the medical marijuana programs of North Dakota and South Dakota, and the mCBD program of Iowa are all currently active; both medical and adult use programs are operational in Missouri.

Since the passing of the *Agriculture Improvement Act of 2018*, (also known as the 2018 Farm Bill), every state within the Midwest HIDTA now participates in the production, cultivation, and retail sale of industrial hemp.[1] While industrial hemp is classified as non-psychoactive due to THC content below 0.3%, it is virtually indistinguishable in appearance from marijuana grown for psychoactive properties. In addition to the state-sanctioned hemp programs throughout the region, at least twelve Indian Nations have received approval to cultivate industrial hemp from the U.S. Department of Agriculture.[1]

Chapter 2: Marijuana Reporting Systems

Introduction

Marijuana businesses are legally required to monitor their supply chains and forward the data to their respective state authorities. Like pharmaceutical companies, inventory management is vital to deterring the theft and diversion of marijuana to illicit markets. "Seed-to-sale" tracking systems are the predominant methods of supply chain management used by the marijuana industry. This system may benefit marijuana businesses through enhanced inventory management, but it does little to prevent theft or diversion, thereby increasing the amount available in illicit markets.[B]

[B] Seizure data from the MW HIDTA suggests that 77 percent of Domestic Highway Enforcement (DHE) traffic stops involving marijuana originated from medical or adult use marijuana states.

Key Findings

- Seed-to-sale tracking is ineffective at preventing the diversion of marijuana from legal dispensaries and cultivation facilities.
- Despite claims otherwise, no marijuana reporting system is capable of providing total accountability of commercially-grown marijuana. Pitfalls to seed-to-sale tracking include cloning of a specific cannabis plant, and discrepancies in the weights recorded throughout the harvesting and processing of the marijuana ("wet" versus "dry" weights).

Harvesting & Processing

In the harvesting and processing phases, the fully matured plant is cut just above the roots and is weighed to establish the initial "wet weight." Workers then separate the usable portions of the plant from the unusable, which are labeled as waste products and later disposed of, and weigh both. The weight should be close to the original wet weight. Diversion can occur at this point by removing marijuana flowers and reassigning the weight difference to the waste pile. After weighing, the useable marijuana is set out to dry on a rack. The RFID tag that the plant was assigned as a seedling is attached to this rack. Diversion is possible in this process because the flowers dehydrate in varying amounts, providing an opportunity for an employee to remove small quantities of flowers each batch. Small losses from multiple drying trays over an extended period of time would be difficult to detect. After the flowers have dried, their weight is taken once more and recorded. The difference in the wet and dry weights is attributed to dehydration.

Figure 2: Marijuana Harvesting

Left: "Wet" marijuana. Right: "Dry" marijuana.
Source: https://tinyurl.com/s5jydw5

Internal Theft & Self-reporting Data Quality

The business practice of self-reporting marijuana cultivation levels and subsequent sales, of that marijuana is controversial. Reporting in this sense includes information from the harvesting, processing, and point of sale phases of marijuana cultivation. The harvesting and processing phases in particular represent the greatest opportunities for theft to occur. Security experts who work with cannabis companies estimate 90% of financial and product loss in the marijuana industry is due to employee theft; the other 10% of product loss is the result of robberies, and poor inventory management by the companies.[2] Deliberate misrepresentation of data by cultivators, dispensaries, or their employees creates opportunities for diversion and black-market sales.

Chapter 3: National Security/Human Trafficking

Introduction

The potential, and often promised, financial gain to be had from the manufacturing and distribution of the marijuana has created new dynamics within the borders of the United States. Mexican drug cartels had traditionally maintained a near monopoly on the growing, importation, and distribution of marijuana in the United States. However, with the trend towards legalization, and the dramatic rise of production within the United States of high-potency marijuana, Chinese investors have emerged as a new source of funding and labor for illegal marijuana production.[3]

These Chinese investor funded production sites have been initiated in multiple states, to include New Mexico and Oklahoma. These sites have sometimes been established on tribal lands, taking advantage of what can be confusion amongst law enforcement officials to quickly establish marijuana farms and make substantial profits, while utilizing both immigrant and tribal labor. These marijuana "farms" have resulted in conflicts with those who believe they contradict tribal customs, leading to their opposition of the unauthorized construction of greenhouses and living quarters on tribal lands. Which have been left behind to fall into disrepair if the "farm" is shut down due to violations they have allegedly committed. The potential for this to occur is especially concerning for the states comprising Midwest HIDTA, as there are a substantial number of tribal lands (22 recognized by the Department of the Interior) located within the region.

Case Examples & Key Findings

Following interviews of "state law enforcement officials, international drug trade experts, lawmakers and economists, by a Politico journalist, they learned the number of marijuana farms in the United States funded by sources traceable back to Chinese investors or owners has skyrocketed." Furthermore, there has been an increase of Chinese workers and owners at marijuana farms in Oklahoma, California, and Oregon. Law enforcement officials in southern Oregon have identified approximately 20 different nationalities to illegal marijuana grow operations. However, the noticeable increase of Chinese funding associated with these grow operations, and the "potential influence of

the Chinese Communist Party" (CCP), has garnered the attention of both law enforcement and lawmakers.[3]

Oklahoma has nearly 7,000 state licensed marijuana cultivation sites ("Farms"). The Oklahoma Bureau of Narcotics (OBN) indicates approximately 3,000 of them have been placed under review for "suspicious activity over the last year". These operations were placed under investigation due to suspicions of fraudulently obtaining their licenses and/or selling marijuana illegally. The OBN believes 2,000 of these 3,000 farms have a Chinese connection, which includes funding, labor, or both. The OBN has shut down approximately 800 marijuana farms over the last two years. OBN spokesperson Mark Woodward said approximately 75 percent of those were linked to China, either to "Chinese investors or Chinese organized crime". However, the extent of the relationship, between the Chinese-funded marijuana farms and the CCP is unknown, as is the amount of marijuana produced by these farms that remains in the United States, or is exported.[3]

Additionally, it is unknown how strong the relationship between Chinese organized crime syndicates and American marijuana production. As Vanda Felbab-Brown, a senior fellow at the Brookings Institution, cautioned, much is not known about the connection between marijuana production and the Chinese criminal syndicates.[3] What is known is the marijuana market in the United States is a lucrative one. According to data from Whitney Economics, a group that analyzes the marijuana industry, approximately 75 percent of the United States' 100 billion dollar marijuana revenue is generated illegally, and "roughly two thirds of this illegally distributed marijuana is grown domestically".[3] Felbab-Brown stated the potential of Chinese investors funding marijuana operations is a new one, which "cuts directly across the interests of Mexican drug trafficking groups."[3] How this dynamic could lead to potential conflict between the Mexican cartels and the Chinese criminal enterprises remains to be seen.

Early in February 2023, Senators Kevin Cramer (R-North Dakota), Mike Rounds (R-South Dakota), and John Thune (R-South Dakota), among others, proposed the Promoting Agriculture Safeguards and Security (PASS) Act, which seeks to protect our national security by preventing foreign entities, such as China, Russia, North Korea, and Iran from taking any ownership or control of the United States' agricultural land and agricultural businesses.[3] The act would help ensure the United States Department of Agriculture (USDA) is fully involved in reviewing land acquisition of American companies and farmland that may affect our agriculture sector.

Another sponsor of the PASS Act, Senator Jon Tester (D-Montana) stated the legislation would conceivably address many of the issues with Chinese investment in

illegal marijuana farming, but also said the differentiation between the investments of Chinese Americans versus those of the Chinese would need to be determined by the Committee on Foreign Investments.

Senator Cramer, cosponsor of the PASS Act, said, "it's probably harder to prove that they're not connected than to prove that they are, because of Chinese law itself,"[3] when referring to Chinese investors trying to prove they are not associated to the CCP.

The following are examples of Chinese interests in what were determined to be illicit-market marijuana distribution operations:

- May 2019 – a vast illicit-market marijuana distribution network was dismantled in Denver, Colorado, following the execution of multiple arrests and search warrants. Investigators seized approximately 80,000 marijuana plants, more than $2.2 million, and 25 vehicles. The United States attorney on the case stated the operation put a "huge dent in a ring involving a local Chinese street gang."[4] Purported to be the largest marijuana bust in Colorado history.
- April 2021 – OBN agents seized 11,000 marijuana plants from two locations, and detained 22 people, mostly Chinese nationals; alleged criminal organization was moving thousands of pounds of marijuana through the illicit-market by utilizing a fraudulent medical marijuana farm.[5]
- December 2022 – a joint task force executed search warrants in Antioch and Oakland, California, where they seized almost 9,000 pounds of marijuana; the California Department of Cannabis Control reportedly believe the targets of the investigation were linked to China.[3]

Tribal Land Encroachment Concerns

In the fall of 2019, Shiprock, New Mexico, located in the northeast corner of the Navajo Nation, began to see marijuana manufacturers move into the area. The area is unique and valuable, due to the San Juan River running through it, which creates fertile farmland adjoining it in the normally harsh high desert. The grow sites sprung up almost overnight, and were assisted in their establishment by the local farm board president, Dineh Benally, who claimed to have the authority to issue licenses for hemp farms. According to the Bureau of Indian Affairs, Benally assisted the farmers in leasing more than 400 acres, of what had traditionally been farmland for an economic development project. Benally claimed the crops being grown were only hemp plants, an agricultural crop with only trace amounts of THC.[6]

However, the industrial-sized greenhouses were surrounded by seven-foot-tall privacy fences, and monitored by surveillance cameras and security guards, some of which were armed. Multiple employees of the farms were interviewed by Searchlight New Mexico (a nonprofit news organization), and they stated not only was hemp being grown, but so was high-grade, illegal market marijuana.[6] To harvest the crop grown in the greenhouses, local Navajo teenagers, a few reportedly as young as 10 years old, would work 10-hours shifts, starting at 7:30 in the morning. In addition to the local workforce, Navajo Nation Police Chief Phillip Francisco estimated 1,000 people, many of which were Chinese immigrants, were transported to New Mexico from Los Angeles, California, to work on the farms.[6] According to farmworkers, neighbors, and law enforcement, the day-to-day operations were overseen by Chinese "managers." These managers directed the installation of diesel generators to power the greenhouses, trailers to act as living quarters for the immigrant workers, and the drilling of unauthorized wells to irrigate thousands of cannabis plants.

Irving Lin, a Los Angeles-based real estate agent, and one of Benally's key associates, admitted to Searchlight New Mexico a "few places" were growing marijuana. Lin believed marijuana will "sooner or later" be one of the "Chinese major businesses."[7] Lin, who runs informational seminars in Los Angeles, that target Asian American business people interested in marijuana cultivation, began coordinating the leasing of the Navajo land to his seminar participants after meeting Benally. These investors began utilizing their network of contacts to acquire labor workers for the farms, and within six months, according to Lin, 1,000 workers had relocated to the Shiprock area.[7]

In 2019, Benally also became affiliated with DaMu Lin (no relation to Irving), the CEO of One World Ventures Inc., and was named to its board of directors in March 2019. According to One World Ventures Inc., one of its goals is to invest in cannabis ventures on Native American land. The Shiprock operation also received investment funding from SPI Energy Co., a publicly traded company based in China.[6]

Navajo community members began reporting seeing Asian farm workers apparently making attempts to leave the farms, loitering at gas stations asking for assistance and standing on rural roads with their suitcases in hand, asking for assistance to get "home." One Shiprock resident recalled a Vietnamese woman arriving at her door, begging for water as she had become disorientated and lost, and asking for help to return to Saigon. Senior policy advisor at the Los-Angeles-based human rights group Coalition to Abolish Slavery and Human Trafficking, Stepanie Richard, said the scenarios raise "clear red flags for labor trafficking and severe exploitation."[6]

The use of tribal lands for cannabis farming and the activities associated with it resulted in protests by the Shiprock residents opposed to the idea, and were becoming increasingly heated, bordering on becoming violent. In November of 2020, multiple search warrants were executed on these alleged hemp farms by a task force comprised of officers from Navajo, state and local police, and federal agents from the DEA, Federal Bureau of Investigation (FBI), and the Environmental Protection Agency (EPA). The task force searched the farms, and discovered they were growing marijuana, not just hemp. Agents recovered 60,000 pounds of marijuana from 21 farms and 2 single residences; in one greenhouse they discovered 1,000 pounds of processed marijuana, packaged for individual sale.[7]

Lynn Sanchez, with the New Mexico Human Trafficking Task Force, said the conditions on the farm were clear signs of labor trafficking, to include some of the workers sleeping outside or on wood pallets, and a lack of access to adequate sanitation and no medical care. However, the application of the "trafficking" label is complicated, both legally and for the workers themselves. The workers themselves may be being exploited, but they may be doing so voluntarily, as they feel they have no other options. The next "option" for many of the workers from the New Mexico location was to re-locate to Oklahoma, where the marijuana industry is rapidly expanding. A statement made by Irving Lin indicated at least a dozen Chinese investors moved their workforce directly from Shiprock to Oklahoma,[7] where the fee to obtain a cannabis license is not costly ($2,500). Thus, enabling these Chinese investors to utilize the available Chinese immigrant workforce to quickly re-establish their cannabis distribution business.

The situation which manifested itself in Shiprock, New Mexico, within the Navajo Nation, has the potential to be repeated throughout tribal lands in the states comprising Midwest HIDTA where either medical and/or adult-use marijuana has been legalized. The complex jurisdictional issues regulating who can enforce which laws, and under what circumstances, could create opportunities and loopholes for these type of marijuana farms to infiltrate the tribal lands within Midwest HIDTA, which according to the United States Department of the Interior, Bureau of Indian Affairs, include:

- **Iowa –** Sac and Fox Tribe of the Mississippi in Iowa

- **Kansas –** Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas; Sac and Fox Nation of Missouri in Kansas and Nebraska; Prairie Band Potawatomi Nation; and Iowa Tribe of Kansas and Nebraska.

- **Missouri –** Eastern Shawnee Tribe of Oklahoma.

- **Nebraska –** Omaha Tribe of Nebraska; Ponca Tribe of Nebraska; Santee Sioux Nation, Nebraska; and Winnebago Tribe of Nebraska.

- **North Dakota –** Spirit Lake Tribe, North Dakota; Standing Rock Sioux Tribe of North and South Dakota; Three Affiliated Tribes of the Fort Berthold Reservation, North Dakota; and Turtle Mountain Band of Chippewa Indians of North Dakota.

- **South Dakota -** Cheyenne River Sioux Tribe of the Cheyenne River Reservation, South Dakota; Crow Creek Sioux Tribe of the Crow Creek Reservation, South Dakota; Flandreau Santee Sioux Tribe of South Dakota; Lower Brule Sioux Tribe of the Lower Brule Reservation, South Dakota; Ogala Sioux Tribe; Rosebud Sioux Tribe of the Rosebud Indian Reservation, South Dakota; Siseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota; and Yankton Sioux Tribe of South Dakota.

Chapter 4: Diversion & Illegal Marijuana Grows

Introduction

While proponents of marijuana legalization claim that marijuana commercialization will eradicate the underground market, reality has proven otherwise. Not only has legalization failed to abolish the illegal market, but illicit marketplaces have also become stronger and more profitable for drug trafficking organizations (DTOs) in many states. Furthermore, the illegal cultivation of marijuana by criminal enterprises has skyrocketed across the U.S.

Key Findings

- Illicit marijuana markets are primarily supplied by illegal growing operations and the diversion of marijuana from legal markets.
- Overproduction, inadequate regulation, and prospective financial gain are the primary causes of the diversion of marijuana to illicit markets, especially from those states with legal marijuana markets.

- The number of pounds of marijuana seized by Midwest HIDTA enforcement initiatives (30,439 lbs) in 2022, represented 73 percent of the total drug weight seized by the initiatives (41,661 lbs); these calculations were based on the drugs seized which were documented by weight (pounds) not those utilizing dosage units.
- Of the 1,111 Domestic Highway Enforcement seizures in 2022 involving marijuana, 66 percent (735 events) originated from states with adult use marijuana programs and 90 percent (1,003 events) originated from states with just a medical use marijuana program, or medical / adult use marijuana programs.
- 77 percent of the marijuana and marijuana products (115,073 grams) of the total marijuana and marijuana products (149,132 grams) mailed into Midwest HIDTA between October 2022 and December 2022 originated from the states with the longest operating medical and adult use marijuana programs: California, Colorado, Oregon, and Washington.

Illegal Marijuana Grows

Although medical and adult use marijuana sales contribute significant amounts of marijuana to illicit markets, illegal growing operations make up most of the illicit market's supply. While Mexico remains the primary foreign supplier of marijuana to U.S. markets, marijuana seizures along the southwest border have decreased more than 80 percent since 2013.[8] The United States Border Patrol reported the seizure of 6,760 pounds of marijuana at the Southwest border in January of 2022. This is a significant decrease over the preceding years, when less than half of that amount was seized in January 2021 (14,313 pounds), slightly less than a third of what was seized in January 2020 (22,731 pounds), and not even a quarter of what was seized in January of 2019 (28,475 pounds).[9]

Modern marijuana is able to withstand a wide variety of climates and can be cultivated in every state. With that being said, certain climates—such as those found in California, Oregon, and some parts of Washington—offer the longest outdoor growing seasons. This, coupled with expansive public lands (i.e. National Forest) and an already established "legal" market are primarily why the majority of illicit outdoor marijuana grows occur in western states.[C]

[C] See "Diversion Statistics" on page 16 for data supporting this.

Causes of Diversion

Overproduction

Marijuana diversion represents a major challenge to both law enforcement and public health agencies. Marijuana products are frequently produced in legal states, trafficked across state lines, and distributed via illicit markets. States with legalized marijuana markets are often major suppliers to the rest of the United States.[D] The overproduction of marijuana occurs when the supply exceeds the demand, and the resulting stockpile drives down prices in the legal retail market. The only legal option for growers or dispensaries with a surplus of marijuana is to auction it to licensed processors / retailers at a heavily discounted price or suffer total loss. Overproduction leads some businesses or individuals to sell marijuana on the illicit market, untaxed, where it is often trafficked out of state.

A potential example of this type of overproduction trafficking, was discovered through an open-source search in February 2023.[E] This search revealed the average price of a "high quality" ounce of marijuana was cheaper in the two states within Midwest HIDTA that currently have no form of legal marijuana program, Nebraska ($309) and Kansas ($344). The price in the remaining states comprising Midwest HIDTA actually showed that the longer their legal marijuana program had been in place, the average price for an ounce was higher: South Dakota ($351), Missouri ($355), Iowa ($363), and North Dakota ($384). These lower prices could be a result of the increased production and availability of marijuana, thereby driving the prices down in the bordering states with no legal marijuana programs.[10]

Diversion Statistics

Midwest HIDTA Initiatives

Midwest HIDTA initiatives confiscated more than 26,808 pounds of marijuana, 1,694 pounds of marijuana concentrates, and 1,937 pounds of marijuana consumables in 2022.[11] Marijuana represented 73 percent of the total drug weight (41,827 pounds) seized by Midwest HIDTA enforcement initiatives in 2022.[11] The most popular methods used to divert medical and adult use marijuana are through the use of privately owned vehicles and mailing services. [12] Marijuana is routinely seized during traffic stops, at bus and train terminals, and in mail centers within the Midwest HIDTA. Seizures involving hydroponic,

[D] This statement is supported by data collected from the MW HIDTA DHE program, the Rocky Mountain HIDTA, Oregon-Idaho HIDTA, national seizure reporting systems, postal seizures, and other law enforcement resources.
[E] This information is offered up as anecdotal information, due its source origin.

medical, and other high-grade marijuana transported from California, Colorado, Oregon, Washington, and other states have become commonplace.

Domestic Highway Enforcement Program

The HIDTA Domestic Highway Enforcement (DHE) program reported the seizure of 15,619 pounds of marijuana during 476 incidents in 2022. This marijuana was either destined to, or transiting through Midwest HIDTA. In addition to the pounds of marijuana, 23,515 dosage units/pills, and 2,096 milliliters of marijuana were also seized in 2022.[13] Of the 1,111 DHE events involving marijuana where an origin was determined, 66 percent (735 events) originated from states with adult use marijuana programs and 90 percent (1,003 events) originated from states with either just a medical marijuana program, or medical / adult use marijuana programs. [13]

Mailing Services

Public and commercial mailing services are highly utilized by both individuals and DTOs to traffic marijuana around the U.S. Figure 4 displays packages containing marijuana (or marijuana products) destined for Midwest HIDTA-region states between January 1 to March 31, 2022 (679 pounds), and October 1 to December 31, 2022 (329 pounds); these are the two data sets available upon request from the United States Postal Inspection Service.[14]

Figure 3: Source & Destination Areas of Marijuana Parcels Seized Within MW HIDTA

Significant Source Areas of Marijuana Parcels Seized Within Midwest HIDTA 01-01-2022 to 03-31-2022 / 10-01-2022 to 12-31-2022

Area Name	# of Seizures
Denver Metro, CO	30
Los Angeles Metro, CA	24
Las Vegas, Metro	21
San Diego, CA	15
Sacramento, CA	9
Worcester, MA	7
Colorado Springs, CO	6
Portland, OR	6
Milwaukee, WI	6
Gulf Breeze, FL	5

Significant Destination Areas of Marijuana Parcels Seized Within Midwest HIDTA 01-01-2022 to 03-31-2022 / 10-01-2022 to 12-31-2022

Area Name	# of Seizures
St Louis Metro, MO	54
Des Moines, IA	37
Kansas City, MO	23
Omaha, NE	18
Wichita, KS	15
Springfield, MO	12
Kansas City, KS	11
Fargo, ND	11
Waterloo, IA	8
Florissant, MO	8

The bulk of Midwest HIDTA-bound packages containing marijuana originated from California, Colorado, Oregon, and Washington. These four states, each with a medical and adult use marijuana program, represented 72.5 percent (731 pounds) of the reported 1,008 pounds of mailed marijuana and marijuana products destined for the Midwest HIDTA.[14] These figures align with the available information from July 2020 – July 2021, when the Los Angeles, California and Denver, Colorado Metropolitan Areas accounted for the overwhelming majority of marijuana packages destined to the Midwest HIDTA region. The primary destination cities for this same time period within the Midwest HIDTA region were Wichita, Kansas, and the Kansas City, KS-MO and St. Louis, MO Metropolitan Areas. The new data has Des Moines, Iowa, and Omaha, Nebraska, supplanting Wichita, Kansas, near the top of the package destination list.[15]

Diversion Case Examples

In Oklahoma, a state with a medical but no adult use marijuana program, loose restrictions and inexpensive grower licenses are contributing to large-scale diversion.[16] At the onset of the medical marijuana program, there were no limits on how many licenses could be issued, and they only cost $2,500 to acquire.[17] According to the Oklahoma Bureau of Narcotics and Dangerous Drugs (OBNDD), licensed and unlicensed growers alike produce large quantities of marijuana for distribution to illicit markets around the U.S.[16] The OBNDD stated, based on feedback from law enforcement partners across the country, specifically the East Coast, Oklahoma has become the number one source state for illicit market marijuana showing up in their states. As their marijuana production has increased, violence associated with its production has also been elevated. In November of 2022, four Chinese nationals were found executed at a marijuana grow farm in Kingfisher County, Oklahoma.[17] The OBNDD stated they have investigated multiple homicides related to, and associated with medical marijuana businesses since its legalization.

In a recent Politico article, the Muskogee, Oklahoma, Chief of Police Johnny Teehee, who was sworn in within a month of Oklahoma legalizing medical marijuana in 2018, stated he and his department have been overwhelmed by the transformation marijuana has brought to Muskogee. Muskogee, which has approximately 37,000 residents, has 47 licensed medical dispensaries and 78 grow operations. Chief Teehee stated his department does not have the personnel or financial resources to adequately investigate whether the medical marijuana businesses are operating legally. Chief Teehee said, “It’s

an absolute nightmare….It's a different world today, without a doubt," and "…I know that marijuana does nothing but lead to other drugs." [17]

According to the Politico article, there are 12,000 licensed medical marijuana businesses, 7,000 grow operations, and almost 3,000 dispensaries operating in the state. To put these numbers in perspective, the numbers of dispensaries is almost three times as many as there are in California, which has nearly 10 times the population of Oklahoma. The requirements to be issued a medical marijuana card are virtually nonexistent, as there are no qualifying conditions needed. Therefore, essentially anyone who wants a medical marijuana card can get one, and nearly 400,000 Oklahoma residents have done so. This numbers is roughly 10 percent of the population, which makes Oklahoma, per capita, the state with the highest rate of participation in the country.[17]

On March 7, 2023, a recreation marijuana referendum was on the ballot in Oklahoma to allow marijuana sales to anyone at least 21 years of age. The residents of Oklahoma rejected the referendum (State Question 820), with more than 61.5 percent "No" votes, following the footsteps of Arkansas, North Dakota, and South Dakota, who all voted against adult use referendums in November, 2022.[17]

Chapter 5: Marijuana-related Crime

Introduction

Marijuana legalization is not necessarily a precursor to a lower crime rate. Although there may be decreases in misdemeanor possession arrests, many states observe increases in violent, property, and/or public-order crimes following marijuana legalization. Eighteen percent of the respondents to the law enforcement survey utilized in the 2023 Midwest HIDTA Threat Assessment, believed marijuana contributed the most to violence in their areas. While increases in crime may not be causatively linked to marijuana legalization, the possible correlation between the two should be researched to gain better insight into this topic.

Key Findings

- Missouri, North Dakota, and South Dakota all experienced increases in crimes against persons offenses following passage of medical marijuana legislation; however, Kansas and Nebraska showed increases as well despite no similar legislation.
- North Dakota and South Dakota experienced increases in property crime offenses following the passage of medical marijuana legislation; whereas, Missouri had decreases in property crime offenses following their legalization change.
- Following the legalization of medical marijuana in Missouri in 2018, the number of homicides, aggravated assaults, and weapons violations involving marijuana increased in St. Louis between 2018 and 2022.
- The Drug Enforcement Administration (DEA) found that illicit marijuana markets are increasing in states that have legalized the possession, use, and cultivation of marijuana.[18]

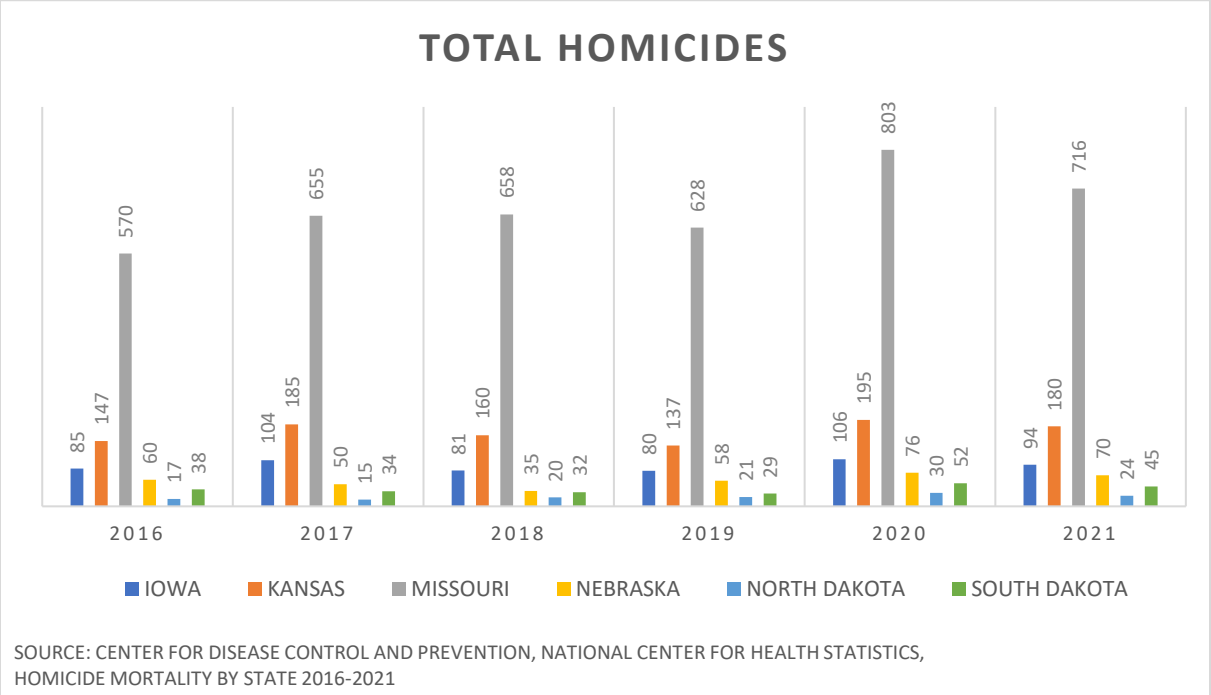
National Incident-Based Reporting System

Attempting to quantify the impact of a specific drug on an area's crime rate presents many challenges; the most obvious being that every law enforcement agency, regardless of size, collects data differently. This section will utilize data from the Center for Disease Control (CDC) and Prevention and the Federal Bureau of Investigation's National Incident-Based Reporting System (NIBRS), in order to examine the rates of various crimes both pre- and post-marijuana legalization. It should be noted the NIBRS numbers are based on the percentage of the total population covered/reporting. According to the NIBRS database, the percentages of the populations covered from 2016 to 2021, are as follows: Iowa averaged 97 percent, ranging from 98 to 91 percent; Kansas averaged 79 percent coverage, ranging from 71 to 86 percent; Missouri averaged 43 percent, ranging from 13 to 94 percent; Nebraska averaged 53 percent, ranging from 43 to 73 percent; North Dakota averaged 97 percent, ranging from 96 to 97 percent; and South Dakota averaged 90 percent, ranging from 88 to 92 percent.

According to the NIBRS data, violent crime incidents (e.g., homicide, rape, robbery, aggravated assault) increased in Missouri and North Dakota in the years following legalization; Missouri experienced significant increases, 321 percent, from 2018 to 2021. Crimes against property offenses (e.g., burglary, theft) decreased in North Dakota following legalization; however, North Dakota did see a 3.5 percent increase in 2021.

Meanwhile, Missouri experienced a 346 percent rise between 2018 and 2021. Following medical marijuana legalization, drug/narcotic offenses increased 463 percent in Missouri, and 0.9 percent in North Dakota from 2017 to 2021. These percentage increases in Missouri are no doubt partially, if not substantially, attributable to the large increase in the total population covered between 2016 and 2021, rising from 13 to 94 percent. Several crimes against person offenses are represented in the charts below.

Figure 4: Total Homicides Recorded by CDC

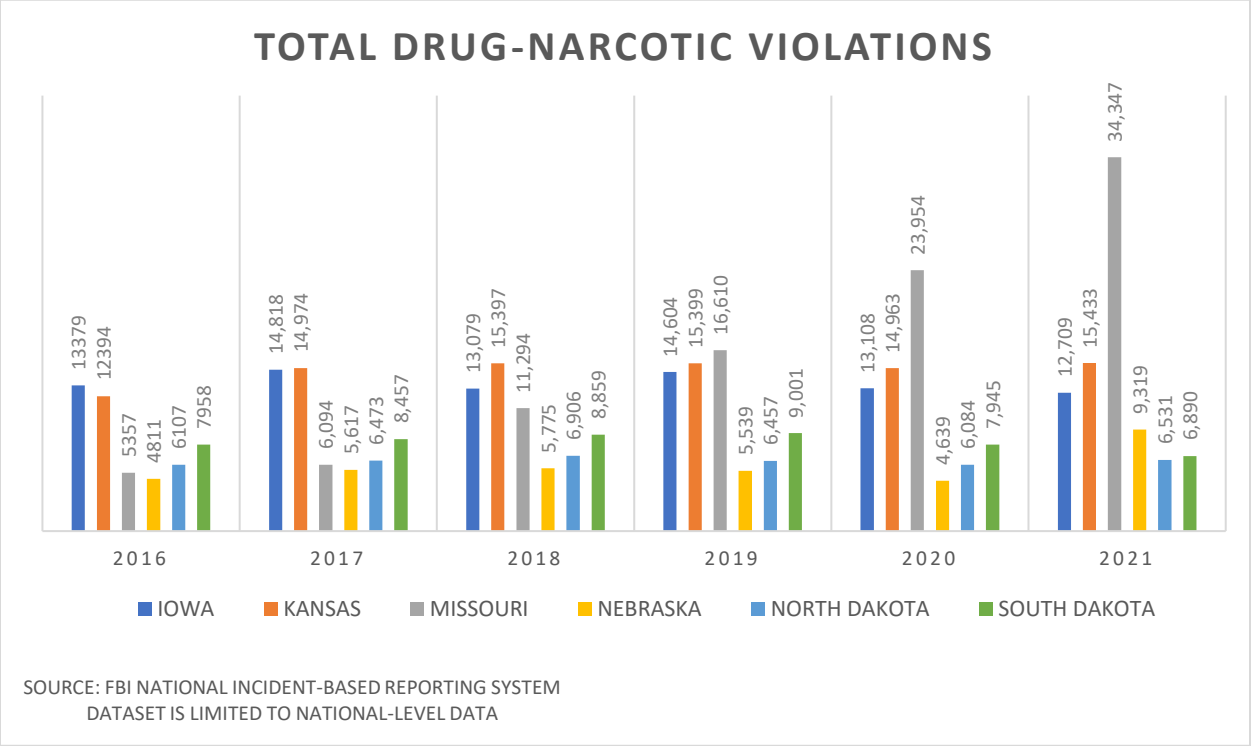


SOURCE: CENTER FOR DISEASE CONTROL AND PREVENTION, NATIONAL CENTER FOR HEALTH STATISTICS, HOMICIDE MORTALITY BY STATE 2016-2021

According to data from the CDC:

- averaging the number of homicides in Iowa over the four years since legalizing medical CBD in 2017, showed a 13.5 percent decrease, 104 to an average of 90;
- averaging the number of homicides in Missouri over the three years since legalizing medical marijuana in 2018, showed an increase of 8.8 percent, 658 to an average of 716;
- averaging the number of homicides in North Dakota over the five years since legalizing medical marijuana in 2016, showed a 29.4 percent increase, 17 to an average of 22; and
- the number of homicides in South Dakota over the year since legalizing medical marijuana in 2020, showed a 13.5 percent decrease, 52 to 45.

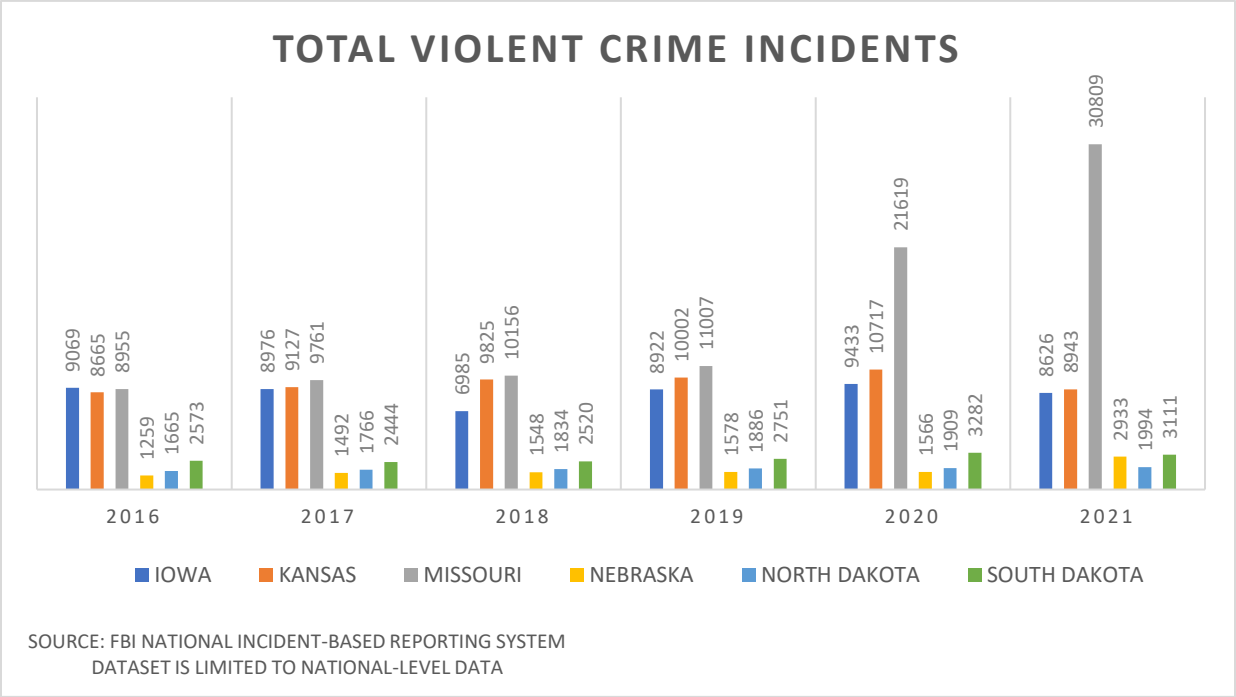
Figure 5: Total Drug-Narcotic Violations by NIBRS



According to data from the NIBRS:

- averaging the number of narcotics violations in Iowa over the four years since legalizing medical CBD, showed a 10 percent decrease, 14,818 to an average of 13,375;
- averaging the number of narcotics violations in Missouri over the three years since legalizing medical marijuana, showed a 121 percent increase, 11,294 to an average of 24,970;
- averaging the number of narcotics violations in North Dakota over the five years since legalizing medical marijuana, showed a 6 percent increase, 6,107 to an average of 6490; and
- the number of narcotics violations in South Dakota over the year since legalizing medical marijuana, showed a 13 percent decrease, 7,945 to 6,890.

Figure 6: Total Violent Crime Incidents by NIBRS



According to data from the NIBRS:

- averaging the number of violent crime incidents in Iowa over the four years since legalizing medical CBD in 2017, showed a 5 percent decrease, 8,976 to an average of 8,492;
- averaging the number of violent crime incidents in Missouri over the three years since legalizing medical marijuana in 2018, showed a 108 percent increase, 10,156 to an average of 21,145;
- averaging the number of violent crime incidents in North Dakota over the five years since legalizing medical marijuana in 2016, showed a 13 percent increase, 1,665 to an average of 1,878; and
- averaging the number of violent crime incidents in South Dakota over the year since legalizing medical marijuana in 2020, showed a 5 percent decrease, from 3,282 to 3,111.

City-Level Marijuana Data

Despite legalization prompting many law enforcement agencies to deprioritize marijuana crimes, a host of marijuana-related crime continues to occur, albeit uncaptured in many law enforcement agencies' statistics. Furthermore, many prosecutors are reluctant to prosecute some marijuana-related crimes without a clear connection to firearms offenses or violence. These two factors, in conjunction with inconsistent reporting procedures, and a reluctance to document negative impacts, contribute to the lack of data to accurately depicting the contribution of marijuana to crime. This section will utilize data from the police departments of several major cities in the Midwest HIDTA region states with, and without, a functioning marijuana program in an attempt to measure the local impacts of medical marijuana on crime. The data sets able to be provided by the police departments are of one of two types, incidents and arrests where a marijuana-related charge was also included in the offense report, or strictly a marijuana-related incident/arrest.

IOWA

Cedar Rapids – The following information was provided by the Cedar Rapids Police Department, it includes incidents and arrests where a marijuana-related charge was included. During the time reported, aggravated assault incidents increased 83 percent (6 to 11), simple assault incidents increased 200 percent (8 to 24), and weapons-related crime incidents increased 350 percent (16 to 72). Due to concerns with the data per the Cedar Rapids Crime Intelligence Unit, the 2020 information was not included, therefore the information pertains only to the calendar years 2021 and 2022.

Figure 7: Cedar Rapids Marijuana-related Crime

CEDAR RAPIDS IOWA MARIJUANA-RELATED:	INCIDENTS		ARRESTS	
UNIFORM CRIME REPORT CHARGE-CODE	2021	2022	2021	2022
MURDER / NON-NEGLIENT MANSLAUGHTER (09A)	0	0	0	0
NEGLIGENT MANSLAUGHTER (09B)	0	2	0	1
AGGRAVATED ASSAULT (13A)	6	11	5	15
SIMPLE ASSAULT (13B)	8	24	5	22

INTIMIDATION (13C)	2	3	3	3
ROBBERY (120)	0	3	0	4
WEAPONS-RELATED CRIME (520)	16	72	15	62

Des Moines – The table below displays marijuana-related crime data for Des Moines, Iowa between 2018 and 2020 year-to-date (YTD).[F] While marijuana-related data for possession and distribution are depicted in the table, data pertaining to violent crimes (e.g., assaults, homicides) were unavailable. Each of the marijuana-related crimes below decreased between 2018 and 2020 YTD. The reason for this decrease is unknown, although changes in marijuana enforcement and criminal penalties may be responsible; this includes efforts by the city council for marijuana possession to receive the lowest level prioritization by law enforcement. The data in the figure is the most recent provided by the Des Moines Police Department.

Figure 8: Des Moines Marijuana-related Crime

Des Moines Marijuana-related Crime			
Crime	**2018**	**2019**	**2020 YTD**
Possession of Marijuana	350	262	115
Possession of Controlled Substance, Marijuana 1st Offense	83	56	34
Possession of Controlled Substance, Marijuana 2nd Offense	1	2	0
Possession of Controlled Substance, Marijuana 3rd+ Offense	7	16	3
Possession with Intent to Deliver Marijuana	73	51	25
Intent to Deliver Marijuana	20	15	10
Conspiracy to Deliver Marijuana	2	8	1
Manufacturing Marijuana	0	3	1
Arrests with Marijuana as the Only Charge	130	86	35
Sources: Des Moines Police Department, IA Fusion Center			

KANSAS

[F] Data earlier than 2018 was not available for the writing of this report.

Overland Park – The following information was provided by the Overland Park Police Department, and includes charges/arrests where a marijuana-related charge was included. The information pertains to the calendar years 2020, 2021, and 2022.

Figure 9: Overland Park Marijuana-related Crime

OVERLAND PARK KANSAS MARIJUANA-RELATED:	CHARGES / ARRESTS		
UNIFORM CRIME REPORT CHARGE-CODE	2020	2021	2022
MURDER / NON-NEGLIENT MANSLAUGHTER (09A)	1	0	1
AGGRAVATED ASSAULT (13A)	12	7	4
SIMPLE ASSAULT (13B)	18	11	15
ASSAULT / HARASSMENT/INTIMIDATION (13C)	3	3	2
KIDNAPPING / ABDUCTION (100)	2	1	0
ROBBERY (120)	3	1	3
WEAPONS-RELATED CRIME (520)	27	17	21

Wichita - The following information was provided by the Wichita Police Department, and includes select charges/arrests where a marijuana-related charge was included. The information pertains to the calendar years 2020, 2021, and 2022.

Figure 10: Wichita Marijuana-related Crime

WICHITA KANSAS MARIJUANA-RELATED:	INCIDENTS / OFFENSES		
UNIFORM CRIME REPORT CHARGE-CODE	2020	2021	2022
MURDER / NON-NEGLIENT MANSLAUGHTER (09A)	12	17	12
AGGRAVATED ASSAULT (13A)	59	84	55
RAPE (11B)	9	1	2
ROBBERY (120)	10	14	5
BURGLARY (220)	9	8	10
AUTO THEFT (240)	12	20	18
LARCENY / THEFT (23A-23H)	15	24	30

MISSOURI

Kansas City

The following data table from the Kansas City Police Department (KCPD) illustrates the number of reports that mention marijuana where it was recovered from a crime or taken as evidence. Between 2016 and 2018, this number increased by 7 percent, 3,536 to 3,773. In 2019, however, the number of reports began to decrease and continued through 2020, 2,031 to 1,483. This is likely the result of an announcement made by the Jackson County Prosecutor's Office, stating that it would cease prosecuting cases of 100 grams or less of marijuana.[19] The ongoing decline of reports mentioning marijuana may also be attributable to the passing of a July 2020 ordinance that removed marijuana possession from the city code.[19]

Figure 11: Kansas City Marijuana-related Crime

KANSAS CITY POLICE DEPARTMENT CRIMES INVOLVING PROPERTY MARKED AS MARIJUANA			
UNIFORM CRIME REPORT CHARGE	2020	2021	2022
MURDER	19	35	28
AGGRRAVATED ASSAULT	78	72	54
ROBBERY	20	21	22
WEAPON LAW VIOLATIONS	87	86	90
DRUG/NARCOTIC VIOLATIONS	524	240	187
DRUG EQUIPMENT VIOLATIONS	145	75	53

St. Louis

The following table displays statistics from the St. Louis Metropolitan Police Department (SLMPD) for all crimes where marijuana was seized and tested positive by their crime laboratory. Since legalization in 2018, the total number of crimes involving marijuana decreased by 13 percent. However, several major types of crime increased within this period. The number of marijuana-related homicides increased by 45 percent, aggravated assaults increased by 15 percent, and weapons violations increased by 6 percent; these are believed to represent the number of reports that mention marijuana where it was recovered from a crime or taken as evidence. It is important to note that since 2013, when the St. Louis Board of Alderman approved a reduction of marijuana penalties, the City of St. Louis continued to reform its penalties for marijuana offenses, by

reducing them. NOTE: The data in the figure is the most recent provided by the St. Louis Metropolitan Police Department.

Figure 12: St. Louis Marijuana-related Crime

St. Louis Marijuana-Related Crime					
Crime	**2016**	**2017**	**2018**	**2019**	**2020**
Aggravated Assault	78	70	61	44	70
All Drug Possession (Involving MJ)	629	555	532	485	311
All Drug Sales (Involving MJ)	5	5	13	3	1
Homicide	35	31	49	42	71
Robbery	16	14	15	10	9
Weapons Violation	219	246	252	224	267
All Crimes Involving MJ	1218	1111	1174	1122	1025
Source: St. Louis Metropolitan Police Department					

NEBRASKA

Lincoln - The following information was provided by the Lincoln Police Department, and are marijuana-related charges/arrests only. The information pertains to the calendar years 2020, 2021, and 2022, and reflects that there were fewer traffic stops being initiated over the last two years per a Lincoln Police Department crime analyst.

Figure 13: Lincoln Marijuana-related Crime

LINCOLN NEBRASKA MARIJUANA-RELATED:	CHARGES/ARREST		
NEBRASKA CRIMINAL CHARGE	2020	2021	2022
MANUFACTURE/DISTRIBUTE MARIJUANA	1	1	0
POSSESS MARIJUANA (MORE 1 OZ, LESS THAN 1 LB)	25	24	14
POSSESS MARIJUANA (LESS THAN 1 OZ, 1ST OFFENSE)	148	155	114
POSSESS MARIJUANA (LESS THAN 1 OZ, 2ND OFFENSE)	23	13	7
POSSESS MARIJUANA (LESS THAN 1 OZ, 3RD/SUBSQ)	32	17	3
POSSESSION MARIJUANA, MORE THAN 1 LB	5	0	1
POSSESS MARIJUANA (1 OZ OR LESS, 1ST OFFENSE)	310	214	146

POSSESS MARIJUANA (1 OZ OR LESS, 2ND OFFENSE)	58	21	10
POSSESS MARIJUANA (1 OZ OR LESS, 3RD OFFENSE)	44	12	4

Omaha - The following information was provided by the Omaha Police Department, and are marijuana-related charges/arrests only; the information pertains to the calendar years 2020, 2021, and 2022.

Figure 14: Omaha Marijuana-related Crime

OMAHA NEBRASKA MARIJUANA-RELATED:	CHARGES/ARREST		
NEBRASKA CRIMINAL CHARGE	2020	2021	2022
POSS OF CONT SUBSTANCE - MARIJUANA	4	5	1
POSS OF CONT SUBSTANCE - THC (WAX, OILS, EDIBLE)	87	77	65
POSS WITH INTENT TO DELIVER - MARIJUANA	124	91	76
POSS WITH INTENT TO DELIVER - THC (WAX, OILS, EDIBLE)	23	12	7
MANUFACTURING MARIJUANA	3	1	1
MANUFACTURING THC (WAX, OILS, EDIBLE)	0	0	0

NORTH DAKOTA

Bismarck – The following information was provided by the Bismarck Police Department, and are overall offense, drug/narcotics, and weapon law violations, as they have recently switched records management systems and were unable to parse out marijuana-related violations specifically. During the time period reported, drug/narcotic violations increased 14 percent, and drug paraphernalia/equipment incidents increased by 26 percent.

Figure 15: Bismarck Marijuana-related Crime

BISMARCK POLICE DEPARTMENT INCIDENTS/ARRESTS					
CASE OFFENSE STATUTE DESCRIPTION	2017	2018	2019	2020	2021
MURDER	0	2	0	0	2
AGGRAVATED ASSAULT	158	128	117	170	122
DRUG/NARCOTIC VIOLATIONS	900	918	979	776	1,029
DRUG PARAPHERNALIA/EQUIPMENT	803	1103	889	801	1,014
WEAPON LAW VIOLATION	72	98	100	71	85

Fargo – The following information was provided by the Fargo Police Department, and are marijuana-related charges/arrests only; the information pertains to the calendar years 2020, 2021, and 2022. During the time reported, ingesting marijuana under 21 years of age (YOA) increased 1,236 percent, and possessing more than a half ounce, but less than 500 grams, increased 59 percent.

Figure 16: Fargo Marijuana-related Crime

FARGO POLICE DEPARTMENT MARIJUANA INCIDENTS/ARRESTS			
CASE OFFENSE STATUTE DESCRIPTION	2020	2021	2022
INGESTING MARIJUANA UNDER 21 YOA	11	236	147
MARIJUANA POSS LESS THAN 1/2 OUNCE	1,218	1,320	1,412
MARIJUANA POSS MORE THAN 1/2 OZ LESS THAN 500G	170	126	271
POSS W/INTENT TO DELIVER/MANUFACTURE MARIJUANA	213	174	173
POSS W/INTENT TO DELIVER /MANUFACTURE MARIJUANA W/A FIREARM	38	53	43
POSS W/INTENT DELIVER/MANUFACTURE MARIJUANA WITHIN 300 FT OF A SCHOOL	0	20	10

SOUTH DAKOTA

Rapid City – The following information was provided by the Rapid City Police Department, and are marijuana-related charges/arrests only; the information pertains to the calendar years 2020, 2021, and 2022. During the time period reported, possession of less than 2 ounces of marijuana decreased 71 percent, and possessing more than 2 ounces, but less than a half pound of marijuana, decreased 66 percent.

Figure 17: Rapid City Marijuana-related Crime

RAPID CITY POLICE DEPARTMENT MARIJUANA INCIDENTS/ARRESTS			
STATE STATUTE / MARIJUANA CHARGE	2020	2021	2022
POSSESSION OF MARIJUANA LESS THAN 2 OZ	246	89	71
POSSESSION OF MARIJUANA 2 OZ TO LESS THAN 1/2 LB	6	7	2
POSSESSION OF MARIJUANA 1/2 LB TO LESS THAN 1 LB	0	1	1
POSSESSION OF MARIJUANA W/INTENT TO DIST LESS THAN 1/2 OZ	3	1	0
POSSESSION OF MARIJUANA W/INTENT TO DIST 1/2 OZ TO 1 OZ	1	0	0
POSSESSION OF MARIJUANA W/INTENT TO DIST 1/2 LB TO 1 LB	0	1	2
POSSESSION OF MARIJUANA W/INTENT TO DIST 1 LB OR MORE	0	1	1

POSSESSION OF MARIJUANA W/INTENT TO DIST 1 OZ BUT LESS THAN 1/2 LB	9	2	2
DRIVER USE OF MARIJUANA	0	1	0
Total	265	103	79

Sioux Falls – The following information was submitted by the Sioux Falls Drug Task Force to the Midwest HIDTA Performance Management Program (PMP), and are marijuana-related seizures/arrests only; the information pertains to the calendar years 2020, 2021, and 2022. During the time period reported, seizures of marijuana increased 154 percent; however, seizures of marijuana/THC consumables decreased 34 percent, and seizures of marijuana/THC concentrates decreased 51 percent.

Figure 18: Sioux Falls Marijuana-related Crime

SIOUX FALLS SOUTH DAKOTA: MARIJUANA SEIZURES/ARRESTS			
Amount of Drug Seized	**2020**	**2021**	**2022**
Marijuana/Cannabis (Grams)	22,420	61,805	56,923
Marijuana/THC Consumables (Edibles) (Grams)	8,074	2,812	5,300
Marijuana/THC Concentrates (Hash/Hash Oil-Wax) (Grams)	2,611	4,320	1,275
Marijuana Plants Indoor (Number of Plants)	0	28	0
Marijuana Plants Outdoor (Number of Plants)	0	0	0
Marijuana Arrests	800	1,066	696
SOURCE: SIOUX FALLS SOUTH DAKOTA DTF PMP STATISTICS			

The aforementioned statistics, which were obtained from various cities within Midwest HIDTA, and pertained to marijuana, and marijuana-related, arrests, incidents, seizures, and violations, illustrate both increases and decreases in the crime-type numbers. Specifically, the number of stand-alone marijuana-related arrests, appear to initially decline, especially in the states where it has been legalized in some form, or where the enforcement has become less stringent.

Rising Marijuana Crime

In recent years, law enforcement leaders across the U.S. have voiced their concerns regarding marijuana's contribution to violent crime. These leaders all recognize that the sale and trafficking of marijuana is not the benign activity that some proponents of legalization purports it to be. In late 2019, Kansas City Police Chief Rick Smith wrote, "Most people don't realize the connection marijuana has to violent crime in Kansas City. So far this year, 10 of our homicides have been directly motivated by marijuana. There is

nothing to prove the rise in violent crime was caused by legalized adult use marijuana in the states that have experienced it, but the correlation is undeniable."[20]

U.S. Marijuana Markets

The DEA's 2019 and 2020 National Drug Threat Assessments, which are the most recent assessments available, found that illicit marijuana markets are increasing in states that have legalized the possession, use, and cultivation of marijuana.[18] While marijuana remains illegal under federal law, there are three types of marijuana markets in the U.S.: illicit markets, state-approved medical marijuana markets, and state-approved adult use marijuana markets. Each of these markets is subject to a wide variety of crimes, including, but not limited to: assault, robbery, homicide, burglary, theft, and drug trafficking. Profits resulting from the diversion and sale of marijuana to illicit markets may be used to fund other criminal activities.

Chapter 6: Impaired Driving & Traffic Fatalities

Introduction

After alcohol, marijuana is the drug most often found in the blood of drivers involved in crashes, including fatal crashes.[21] Research has shown that marijuana use can impair important skills required for safe driving by slowing reaction time, impairing coordination, and distorting perception.[22] In the United States, from 2000 to 2018, the rate of fatal crashes involving marijuana grew from 9 percent to 21.5 percent, an increase of over 138 percent. During that same time frame, crashes involving marijuana and alcohol together increased by over 114 percent (4.8 to 10.3 percent respectively).[23]

Key Findings

- Numerous studies have demonstrated that marijuana use impairs an individual's ability to safely operate a motor vehicle.[24] [25] [26]
- Following medical marijuana legalization, the percentage of total traffic fatalities involving a driver testing positive for cannabinoids increased in one of the three Midwest HIDTA states with measurable data available from their marijuana program.[29,30,]

Marijuana Impairment

There are many misconceptions surrounding the effects of marijuana on driving. Numerous scientific studies indicate that marijuana impairs motor skills, cognitive functions, and a driver's ability to multitask.[24] [25] [26] In fact, marijuana is the illicit drug most commonly found in the blood of drivers involved in motor vehicle crashes. It has been estimated that a third of impaired driving incidents can be traced to marijuana, while many more can be linked to the use of a combination of substances.[27]

In 2020, a double-blind randomized clinical trial examining the effects of vaporized marijuana on driving performance found that THC impairs driving skills.[28] The trial focused on the study participants' ability to maintain lane position on a roadway after receiving marijuana that was either THC dominant (22 percent THC), THC/CBD equivalent, CBD dominant (nine percent CBD), or a placebo. The study also collected feedback from the drivers on their driving quality, perceived impairment, and confidence to safely operate a vehicle. Results from the study found that the drivers who consumed THC had increased difficulty in maintaining lane position for up to five hours after use compared to the CBD or placebo groups.[28] The feedback collected from the drivers that used THC also found that drivers reported a lower confidence in their driving ability, a higher sense of impairment, and a lower perception of their driving quality.[28]

A 2017 Liberty Mutual survey of high school teens and parents (N=3.800) found that a third of the participating students believed driving while under the influence of marijuana was legal, if it was being done in a state that had "legalized" adult use marijuana use. More than 20 percent of these same survey participants reported driving while under the influence of marijuana was common amongst their friends. The legal perception of the parents who participated in the survey, was actually more ill-advised, coming back at 27 percent believing it was legal to operate a vehicle while under the

influence of marijuana in states where it was recreationally "legal," and 14 percent saying it was common among their friends.[27]

Marijuana-Related Traffic Fatalities in the Midwest HIDTA

Following medical marijuana legalization, the percentage of total traffic fatalities involving a driver testing positive for cannabinoids increased in two of the three Midwest HIDTA states with a marijuana program, Missouri (Medical 2018, Adult Use 2022) and North Dakota (Medical 2016), as depicted in Figures 20 – 21 below; insufficient time has passed since implementation of the program in South Dakota (Medical 2020) to provide data. The Midwest HIDTA recognizes that there are numerous data limitations based on current testing methods and processes that make interpreting traffic fatality data difficult. However, this is the most comprehensive data available that allows for multi-year comparisons of drug-related fatalities. Data for this section was gathered from the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS), the Iowa Department of Transportation, and the North Dakota Department of Transportation.

Iowa Traffic Deaths Related to Marijuana When a DRIVER Tested Positive for Cannabinoids			
Crash Year	**Total Statewide Fatalities**	**Fatalities with Drivers Testing Positive for Cannabinoids***	**Percent of Total Fatalities**
2014	322	23	7.1%
2015	320	33	10.3%
2016	402	46	11.4%
2017	330	37	11.2%

2018	319	53	16.6%
2019	336	30	8.9%
2020	337	40	11.9%
2021	356	39	11.0%
2022	338	28**	8.3%
*Cannabinoids: Delta 9, Hashish Oil, Hashish, Marijuana, Marinol, and THC. **Incomplete data at the time of this report.			

Figure 19: Iowa Traffic Deaths Related to Cannabinoids

The percentage of total fatalities where a driver tested positive for cannabinoids has decreased, from 16.6 percent in 2018 to 8.3 percent in 2022, the most recent complete data set available.[29]

Figure 20: Missouri Traffic Deaths Related to Cannabinoids

Missouri Traffic Deaths Related to Marijuana When a DRIVER Tested Positive for Cannabinoids			
Crash Year	**Total Statewide Fatalities**	**Fatalities with Drivers Testing Positive for Cannabinoids***	**Percent of Total Fatalities**
2014	766	96	12.5%
2015	870	112	12.9%
2016	947	148	15.6%
2017	932	154	16.5%
2018	921	157	17.0%

2019	881	146	16.6%
2020	987	182	18.4%
2021	1016	194	19.1%
*Cannabinoids: Delta 9, Hashish Oil, Hashish, Marijuana, Marinol, and THC.			

Since Missouri passed medical marijuana legislation, the total number of fatalities increased by 10.3 percent, 921 to 1016. The percentage of total fatalities where one of the drivers involved tested positive for cannabinoids has also increased since Missouri passed medical marijuana legislation, from 17.0 percent in 2018 to 19.1 percent in 2021, 157 to 194 fatalities.[30] In fact, if the previous ten years data is reviewed, the percentage of fatality accidents in Missouri involving marijuana/cannabinoids has risen almost 10 percent over the decade, from 9.7 percent of 814 (79 fatalities) to 19.1 percent of 1,016 (194 fatalities).

Figure 21: North Dakota Traffic Deaths Related to Cannabinoids

North Dakota Traffic Deaths Related to Marijuana When a DRIVER Tested Positive for Cannabinoids			
Crash Year	**Total Statewide Fatalities**	**Fatalities with Drivers Testing Positive for Cannabinoids***	**Percent of Total Fatalities**
2014	135	3	2.2%
2015	131	6	4.6%
2016	113	6	5.3%
2017	116	3	2.6%
2018	105	4	3.8%
2019	100	5	5.0%
2020	100	11	11%
2021	101	9	8.9%
*Currently the ND Crime Lab only screens urine samples for the presence of THC-COOH, the inactive metabolite of delta9-THC.			

North Dakota is fortunate to have a smaller number of fatalities, but based on available information the rate has increased by 3.9 percent since medical marijuana sales began in 2019.

South Dakota, whose medical marijuana program is in its infancy, was contacted; however, the South Dakota Highway Patrol advised the information pertaining to the percentage of drivers testing positive for marijuana involved in a fatality accident was not available at this time.

Chapter 7: Accessibility and Use

Introduction

As California, Colorado, Oregon, and Washington saw a proliferation of medical marijuana dispensaries, they also saw a corresponding increase in marijuana use among all ages, as well as a decrease in the perception of risk.[31,32] According to the 2021 National Survey on Drug Use and Health, "in 2021, marijuana was the most commonly used illegal drug, with 18.7 percent of people aged 12 or older (or 52.5 million people) using it within the last year. The percentage was highest among young adults aged 18 to 25 (35.4% or 11.8 million people), followed by adults aged 26 or older (17.2% or 37.9 million people), then by adolescents aged 12 to 17 (10.5% or 2.7 million people)".[33]

While none of the four Midwest HIDTA region states with a legalized medical marijuana program reported adult or youth usage rates above the national average[36], this may be due to the short period of time in which these state dispensaries were operational. Using the western states as a predictive model, it is possible that marijuana use will increase as the marijuana programs of Missouri, North Dakota, and South Dakota mature.

Key Findings

- 75 percent of states with a legalized adult use marijuana program and 57 percent of states with a legalized medical marijuana program moved up in the national ranking of past month marijuana usage by those ages 12 to 17 from 2017 to 2019.[35,36]
- Past-month marijuana usage from 2017-2019, for youth ages 12 to 17, increased following legalization in Iowa and Missouri.[35,36]

- Past-month marijuana usage from 2017-2019, for adults ages 18 and older, increased following legalization in Missouri and North Dakota.[35,36]
- The Iowa Youth Survey found the percentage of past-month marijuana use in grades six to twelve decreased 16.3 percent, from 4.3 percent to 3.6 percent between 2018 and 2021.[37]
- First time use of almost every other substance is trending downward, in 2019 there were 9,529 new marijuana users every day, approximately 1,200 more than in 2018.[34]
- Not only is the number of new marijuana users on the rise, but those who use daily is also on the rise, approxim16ately 6,200,000 in 2009, rising to approximately 13,800,000 in 2019.[34]
- The Missouri Student Survey found the percentage of past-month marijuana use increased 48 percent between 2018 and 2020.[39]
- 2022 Midwest HIDTA's Threat Assessment's Law Enforcement Survey response indicated marijuana's level of availability was "High" in all seven states comprising Midwest HIDTA.
- 2022 Midwest HIDTA's Threat Assessment's Public Health Survey (PHS) response indicated marijuana's level of use was "High" in all five of the states a response was received.

State Estimates of Youth Marijuana Use

According to data from the Substance Abuse and Mental Health Services Administration's (SAMHSA) National Survey on Drug Use and Health (NSDUH), 75 percent of states with a legalized adult use marijuana program and 57 percent of states with only a medical marijuana program moved up in the national ranking of past month marijuana usage by those ages 12 to 17 from 2017 to 2019.[35,36]

Regarding past month marijuana use among youth ages 12-17, 92 percent of states with a legalized adult use marijuana program reported usage above the national average.[35,36] Of the states with only a medical marijuana program, 39 percent reported usage above the national average.[35,36] Figure 22 on the following page illustrates past month marijuana usage by 12-17 year old's for 2017-2018 and 2018-2019 NSDUH data.

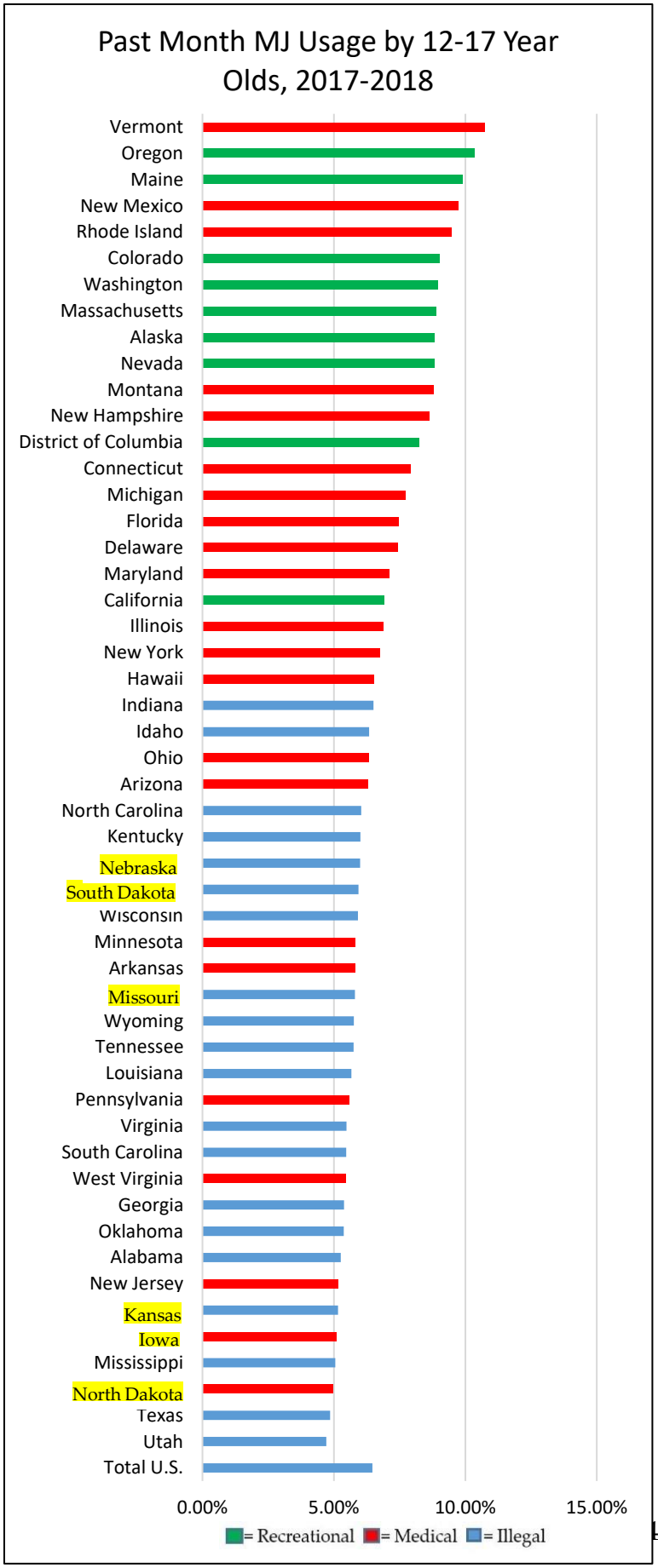
According to the 2018-2019 NSDUH data, none of the three states within the Midwest HIDTA region with an operational medical marijuana program reported youth usage rates above the national average.[35,36] While a definitive explanation for lower youth

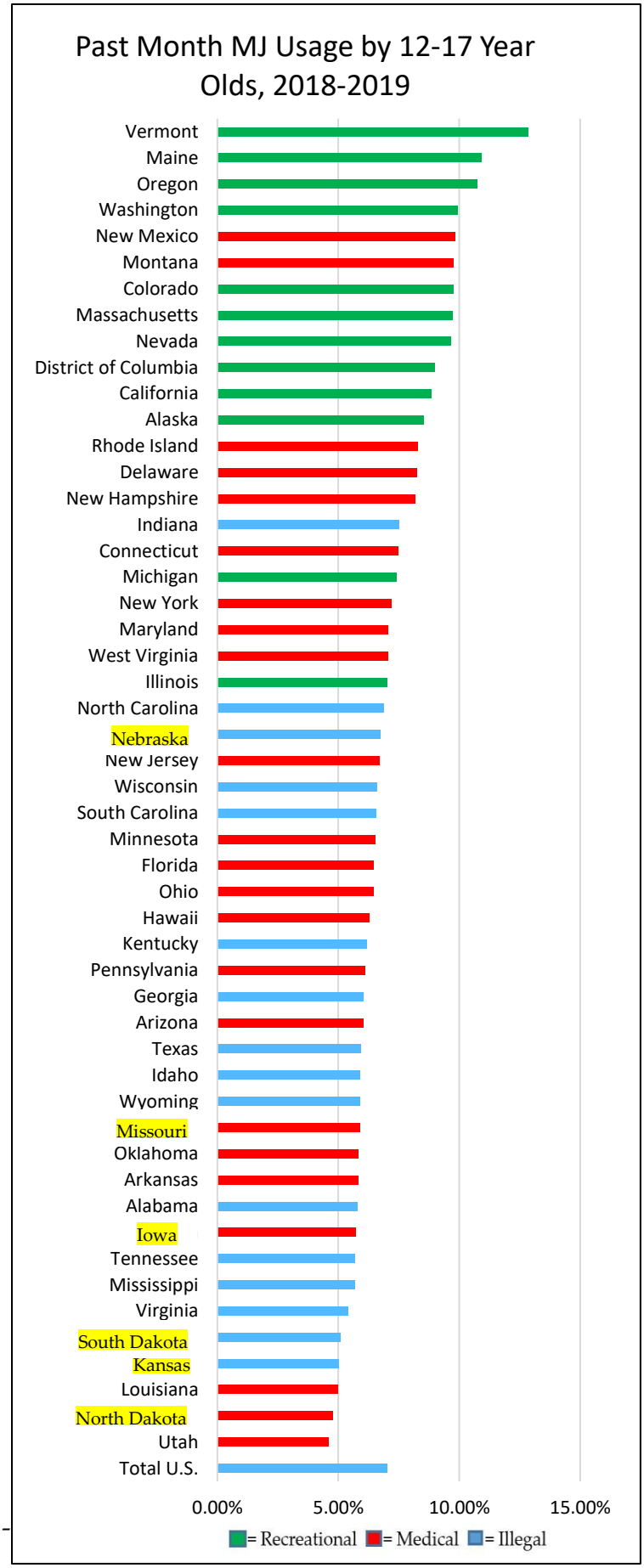
marijuana use in the three Midwest HIDTA states is unknown, it may be because dispensaries were not operational for the full period in which the surveys were administered. For example, Iowa's mCBD program began dispensing mCBD products in December 2018, while North Dakota's medical marijuana program began dispensing marijuana in early 2019. Missouri's first medical marijuana dispensaries opened in October 2020. While youth marijuana use for the three Midwest HIDTA region states was below national average, rates did increase in Iowa and Missouri following legalization. According to NSDUH data, past month youth marijuana use increased by 11.7 percent in Iowa and one percent in Missouri between 2017 and 2019. [35,36]

The following data examining youth substance use were gathered from the Iowa and Missouri state departments of health.[G] These youth and student surveys are administered biennially to record risk behaviors of students in grades six to 12. The Iowa Youth Survey found the percentage of past-month marijuana use decreased 16.3 percent (from 4.3 to 3.6 percent) between 2018 and 2021.[37] Between 2020 and 2022, the Missouri Student Survey found the percentage of lifetime marijuana use decreased 9.5 percent (from 16.9 percent to 15.3 percent), while the percentage of past-month marijuana use decreased 15.7 percent (from 8.9 percent to 7.5 percent).[38,39] Of the group that reported smoking marijuana in the past month, the number reporting they used marijuana daily dropped 62 percent between 2020 and 2022, 18.1 percent to 6.9 percent.[39]

[G] The North Dakota Youth Behavior Risk Survey results were not included in this comparison as it did not share the same question format as that of Iowa or Missouri. As a result, the data was incomparable.

Figure 22: Past-month Marijuana Usage by 12-17 Year Olds, 2017-2019





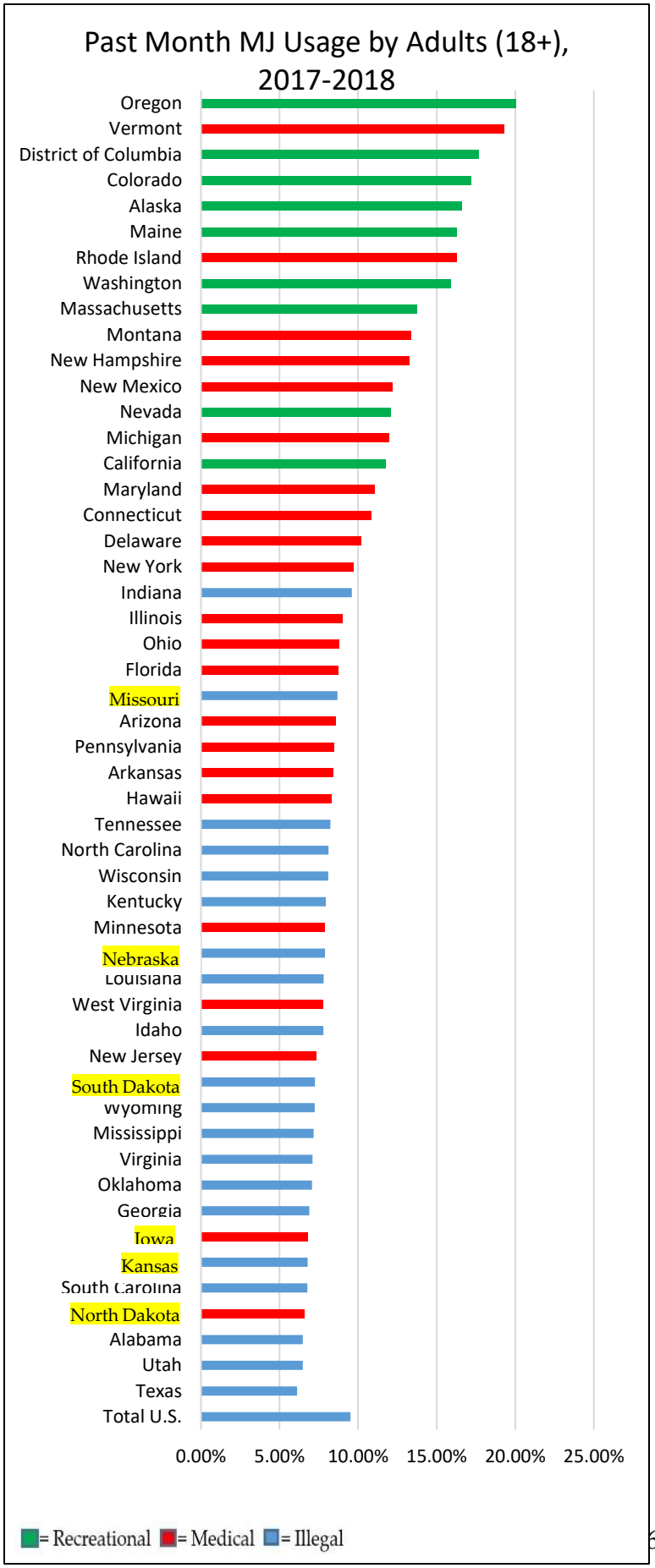
State Estimates of Adult Marijuana Use

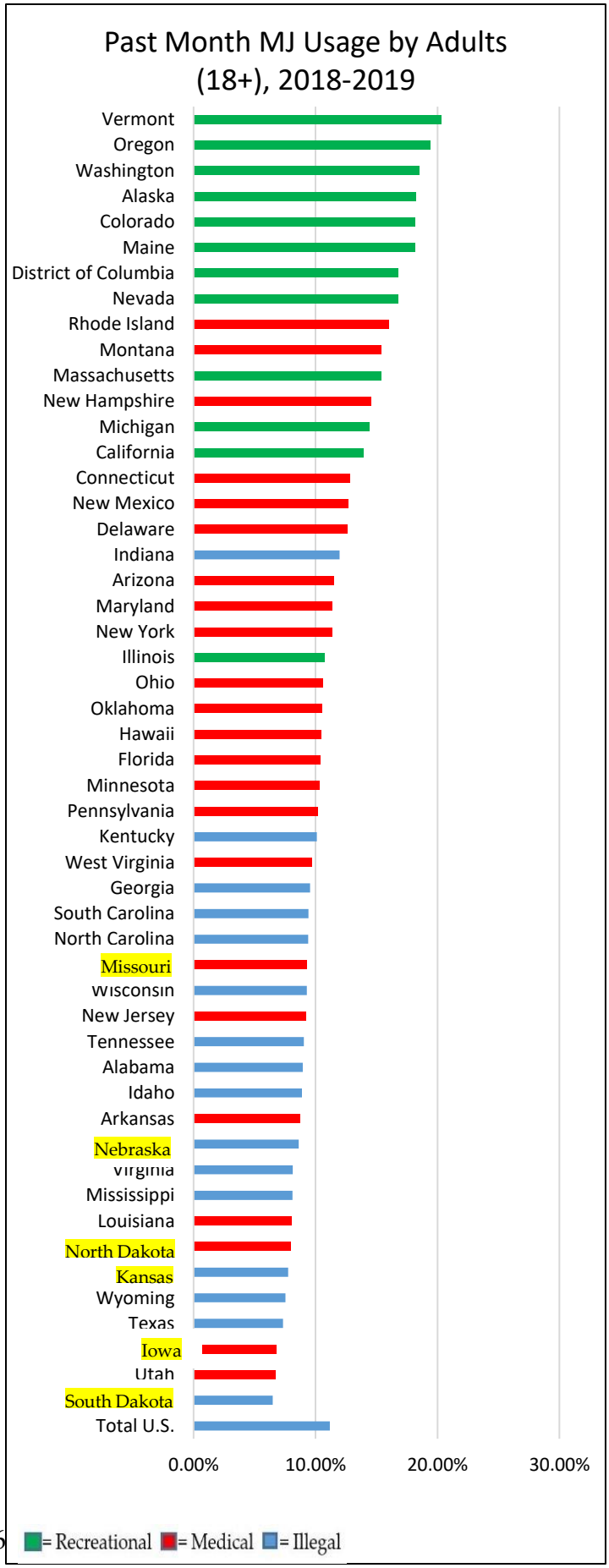
According to data from the NSDUH, 83 percent of states with a legalized adult use marijuana program moved up in the national ranking of past month marijuana usage by adults ages 18 and older from 2017 to 2019.[35,36] In comparison, 91 percent of states with only a medical marijuana program moved up in the national ranking of past month marijuana usage by adults ages 18 and older from 2017 to 2019. [35,36]

Regarding past month marijuana use among adults ages 18 and older, 92 percent of states with a legalized adult use marijuana program reported usage above the national average.[35,36] Of the states with only a medical marijuana program, 41 percent reported usage above the national average. [35,36] Figure 23 on the following page illustrates past month marijuana usage by adults ages 18 and older for 2017-2018 and 2018-2019 NSDUH data.

According to the 2018-2019 NSDUH data, none of the three states within the Midwest HIDTA region with an operational medical marijuana program reported adult usage rates above the national average.[35,36] While a definitive explanation for lower adult marijuana use in the three Midwest HIDTA states is unknown, it may be because dispensaries were not operational for the full period in which the surveys were administered. While adult marijuana use for the three Midwest HIDTA region states was below national average, rates did increase in Missouri and North Dakota following legalization. According to NSDUH data, past month adult marijuana use increased by 7 percent in Missouri and 21 percent in North Dakota between 2017 and 2019.[35,36]

Figure 23: Past-month Marijuana Usage by Adults (18+), 2017-2019



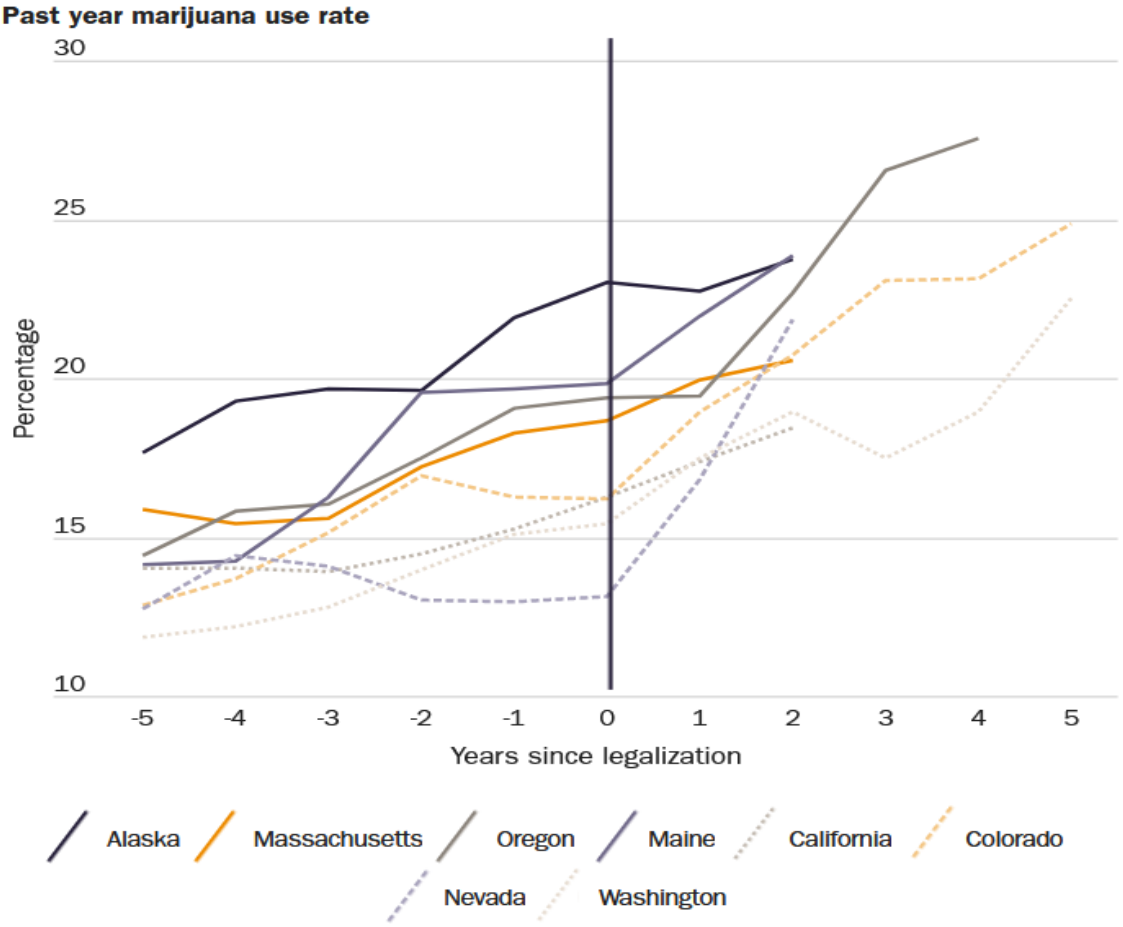


The aforementioned state estimates for 2017-2018 and 2018-2019 are the latest comparisons available due to methodological concerns in conducting the surveys. To protect the safety of their staff and survey participants during the COVID-19 pandemic, SAMHSA suspended in-person data collection on March 16, 2020. SAMHSA began web-based data collection during the fourth quarter of 2020, and it became the primary form of data collection. Various demographics participate in the survey, and it cannot be determined if individuals did, or would answer the questions differently whether they answered in person or online. The initial assumption was the calculated average of the information would provide statistically valid results; however, the NSDUH determined this assumption could not be made, and the averages across the two years could prove to be misleading. Therefore, the state estimates for 2019-2020 were not available for analysis.[40]

Data on Past-Year Marijuana Use by Those Ages 12+

Marijuana dispensaries are a relatively new occurrence in the Midwest HIDTA region. Because of this, the impact of marijuana legalization on the region's usage may not be accurately captured by the NSDUH data. To better illustrate the relationship between marijuana legalization and increased use, Figure 24 displays the prevalence of marijuana use in eight states—which have the longest records of legalized data—before and after legalization.[41] The vertical line in graph below represents the year each state legalized marijuana. While use in many states modestly increased in the years leading up to legalization, the data show a significant increase in use post-legalization.

Figure 24: Past-year Marijuana Use Rate Among Those Ages 12+



Source: "The Effect of State Marijuana Legalizations: 2021 Update," CATO Institute, https://www.cato.org/policy-analysis/effect-state-marijuana-legalizations-2021-update#marijuana-other-substance-use.

Chapter 8: Impacts to Health

Introduction

Following passage of medical and/or adult use marijuana, many states experienced an increased incidence of marijuana-related illnesses observed by their emergency departments. For example, Colorado saw an increased number of marijuana-related admissions to its emergency departments. This increased even more dramatically following adult use marijuana legalization in 2012, when marijuana-related emergency department visits increased 54 percent (14,151, to 21,769) from 2013 to 2017, and

marijuana-related hospitalizations increased 101 percent (8,279 to 16,614) during the same time span.[42]

Key Findings

- Marijuana-related emergency department visits increased in Iowa, Missouri, and North Dakota following the legalization of medical marijuana.
- Marijuana-related hospitalizations increased in Missouri and North Dakota following the legalization of medical marijuana.
- Marijuana-related exposure calls to state poison centers increased in Iowa, Missouri, and North Dakota following medical marijuana legalization.
- Frequent marijuana use is associated with several adverse health effects, including brain development, anxiety, depression, psychosis, schizophrenia and suicide.
- Despite claims otherwise, marijuana legalization does not lower rates of opioid overdose mortality.[76]
- Marijuana use in adolescence and young adulthood increases the likelihood of abusing other illicit drugs later in life.[76]

Emergency Department Visits

The prevalence of marijuana use is further demonstrated by the hospitalizations and emergency department visits (ED) in Iowa, Missouri, North Dakota, and South Dakota. While data going back to 2014—the year Iowa adopted an mCBD program—is not available, Iowa marijuana-related emergency department visits have increased 59.4 percent since 2016 and 16.5 percent since mCBD facilitates opened in 2018.[H].

Figure 25: Iowa Cannabis-Related ED Visits and Hospitalizations

Iowa Department of Public Health Division of Behavioral Health							
Cannabis-Related Emergency Department Visits and Hospitalizations, Iowa,2016-2021							
Type	**Indicator**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
ED Visits	Cannabis Poisonings	106	103	145	143	155	169
Hospitalizations	Cannabis Poisonings	71	70	52	44	54	31
Source: Iowa Department of Public Health. Division of Behavioral Health. Bureau of Substance Abuse. 2016-2021 Inpatient and outpatient data. Des Moines: Iowa Dept. of Public Health, [2021].							

[H] Due to adoption of the ICD-10 coding system in 2016, the data for cannabis-related ED visits and hospitalizations is only available from 2016 and forward. Previous ICD versions are not comparable to ICD-10.

Following medical marijuana legalization in Missouri, hospitals observed an increase in both initial and repeat emergency department visits and hospitalizations for marijuana complications.[43] Since legalizing medical marijuana in 2018, the number of marijuana-related ED visits in Missouri increased by 75 percent between 2018 and 2022. However, the number of marijuana-related hospitalizations have actually decreased 33 percent from 2018 to 2022.

Figure 26: Missouri Cannabis-Related ED Visits and Hospitalizations

Missouri Department of Health & Senior Services						
Cannabis-Related Emergency Department Visits and Hospitalizations, Missouri 2016-2020						
Type	**Indicator**	**2018**	**2019**	**2020**	**2021**	**2022**
ED Visits	Cannabis Poisonings (Overdoses)	174	257	300	308	305
Hospitalizations	Cannabis Poisonings (Overdoses)	246	301	252	225	164
Source: Missouri Patient Abstract System, Missouri Dept. of Health & Senior Services, [2021]; Bureau of Health Care Analysis and Data Dissemination (2023).						

Following the medical marijuana legalization in 2016, North Dakota's hospitals observed an increase in both emergency room visits and hospitalizations due to marijuana-related events. The number of emergency room visits increased by 294 percent between 2016 and 2022, while the hospitalizations as a result of these visits increased 73 percent over the same time period. This information was provided by the North Dakota Department of Health, utilizing the Center for Disease Control's marijuana v3 query, and provided the following caveats to their data: the numbers represent a syndrome definition that utilizes both ICD-10-CM (International Classification of Diseases, 10th Revision, Clinical Modification) codes and chief complaint, which looks for key words, and should not be considered a true number of cases; not every hospital submits both ICD and chief complaint information, so some visits may be missing; some hospitals only submit data

on North Dakota residents, so transient populations may not be included, thereby potentially underestimating the impacts; and the increase in numbers may be due to either an increase in cases, or an increase in the number of medical facilities sharing data.

Figure 27: North Dakota Cannabis-Related ED Visits and Hospitalizations

North Dakota Department of Health								
Cannabis-Related Emergency Department Visits and Hospitalizations, North Dakota 2016-2020								
Type	**Indicator**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
ED Visits	Cannabis Poisonings	556	886	1,107	1,210	1,545	1.902	2,189
Hospitalizations	Cannabis Poisonings	139	135	142	148	191	242	240
Source: North Dakota Department of Health, Division of Disease Control, Respiratory & Syndromic Surveillance, [2023].								

Following the vote to legalize medical marijuana legalization in 2020, South Dakota's hospitals observed an increase in both emergency room visits and hospitalizations due to marijuana-related events, despite the medical marijuana program not being implemented until 2022. The data in the figure below is for those patients seen in a South Dakota hospital, regardless of where the patient resides, and was compiled utilizing ICD-10-CM codes F12 (Cannabis-related disorders) and T40.7 (Poisoning by, adverse effect of and underdosing cannabis).

Figure 28: South Dakota Cannabis-Related ED Visits and Hospitalizations

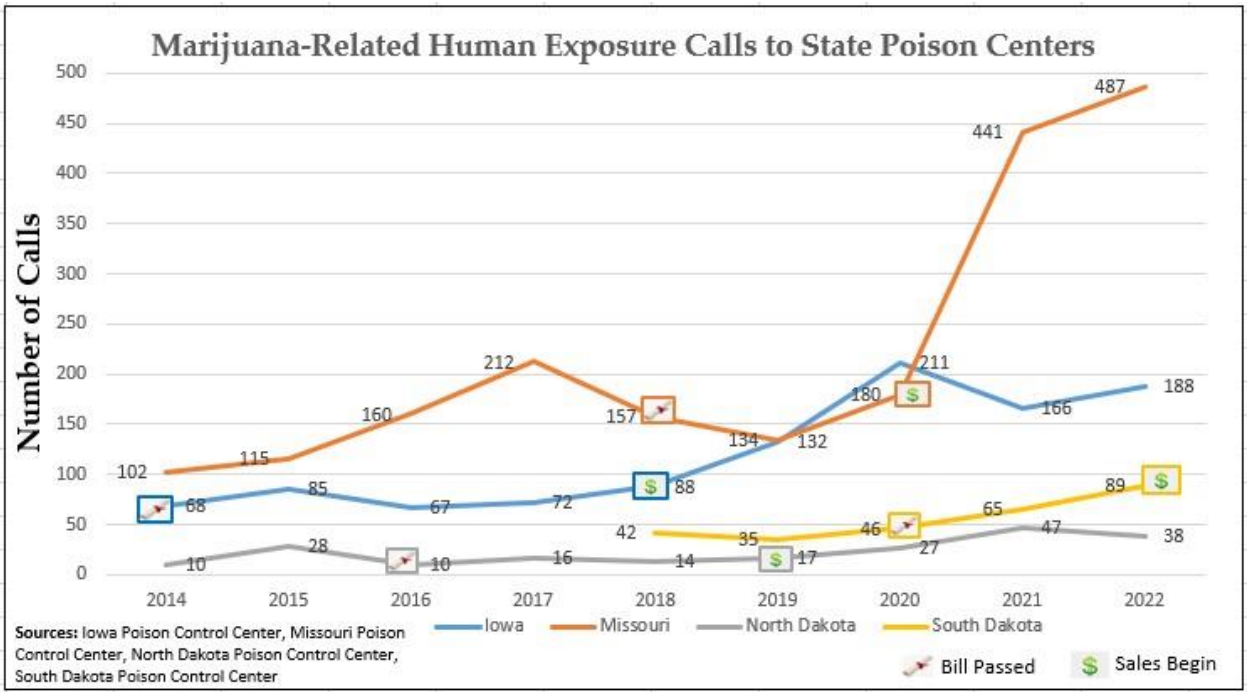
South Dakota Association of Healthcare Organization					
Cannabis-Related Emergency Department Visits and Hospitalizations, South Dakota 2-18-2021					
Type	Indicator	2018	2019	2020	2021
ED Visits	Cannabis-related disorders/poisonings	58	92	108	125
Hospitalizations	Cannabis-related disorders/poisonings	19	25	21	37
Source: South Dakota Department of Health Epidemiology, Surveillance, and Informatics Center.					

Poison Center Calls

According to data received from the poison centers of Iowa, Missouri, North Dakota, and South Dakota marijuana-related exposure calls to state poison centers

increased for each state following medical marijuana legalization.[I] In Iowa, these calls increased 176 percent, from 68 to 188, between 2014 and 2022.[44] In Missouri, these calls increased 210 percent, from 157 to 487, between 2018 and 2022.[45] In North Dakota, these calls increased 280 percent, from 10 to 38, between 2016 and 2022.[46] In South Dakota, albeit with a more limited data set, these calls increased 93 percent, 46 to 89, between 2020 and 2022.[47] Additionally, calls to each state's respective poison center increased after the sale of medical marijuana actually began. In Iowa, these calls increased 113 percent, from 88 to 188, between 2018 and 2022.[44] In North Dakota, these calls increased by 123 percent, from 17 to 38, between 2019 and 2022.[46] In Missouri, these calls increased by 170 percent, from 180 to 487, between 2020 and 2022.[45] This percentage cannot yet be calculated for South Dakota as dispensaries did not open until 2022.

Figure 29: Marijuana-Related Calls to State Poison Centers, 2014 – 2022



[I] See Figure 29 for the dates when medical marijuana legislation passed and sales commenced.

Adverse Health Effects of Marijuana

THC, the primary psychoactive component in marijuana, can cause a variety of mental and physiological health problems. The addictive properties of THC contribute to its potential harms and may result in marijuana users developing Cannabis Use Disorders (CUD), adverse mental health outcomes, and experiencing impaired cognitive development and function.

Addiction

Research indicates that early age of onset of use, frequency of use, and the potency of the marijuana use can lead to addiction.[48] The public health survey (PHS) respondents to the 2022 Midwest HIDTA Threat Assessment who operate an inpatient or outpatient admissions program, cited an approximately 29 percent increase in marijuana-related admissions during the reporting period. A further 43 percent of respondents cited marijuana-related admissions as remaining the same over the past 12 months. The overwhelming majority of PHS respondents claimed that teens (88 percent) and young adults (64 percent) most commonly abused marijuana. Data from the PHS indicates that marijuana is a drug frequently combined with other substances; the most popular drugs taken in combination with marijuana are methamphetamine and fentanyl.

In fact, approximately nine percent of individuals who experiment with marijuana become addicted.[49,J] This number increases to approximately 17 percent for those who begin using marijuana as teenagers and increases to between 25 and 50 percent for those who use marijuana daily.[50] Frequent marijuana use by adolescents is associated to an increased risk of marijuana addiction in some people, which leads to a greater risk of the user ingesting other illicit drugs, or experiencing adverse mental health outcomes.[51] While the debate over whether marijuana use leads to the abuse of other drugs is not new, there is a substantial body of evidence supporting the idea that adolescent marijuana use can contribute to the abuse of other illicit drugs.

A study referenced in the Smart Approaches to Marijuana (SAM) article from November 2019, was published in the JAMA (Journal of the American Medical Association) Psychiatry. The study found the rates of marijuana addiction among youth ages 12 to 17, were 25 percent higher in those states which have "legalized" marijuana use, versus the states which have not legalized the substance. Among adults aged 26 and older,

[J] The use of the term "addiction" in this report is defined by the criteria for dependence in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV).

past month use was 26 percent higher in the states where marijuana was "legalized," and this age group showed both higher past-month frequent use (23 percent) and past-year problematic use (37 percent). In this same study, Dr. Kevin Sabet said, "Legalization has allowed Big Tobacco and Big Marijuana to relentlessly market and normalize highly potent marijuana. While much of the data on marijuana is still out, we do know that increased availability leads to increased use, which leads to increased rates of addiction."[52] Dr. Sabet also stated, "Legalization efforts are sending the message that marijuana use is safe and state sanctioned. No amount of marijuana use is safe for young people and more must be done to halt its normalization."[52]

However, administrative data reported to SAMHSA and entered to Treatment Episode Data Sets (TEDS) from 2016 to 2020, indicated the number of admissions to drug treatment facilities for a substance use disorder involving marijuana, ages 12 and older, declined for every state in the Midwest HIDTA region; there was "no or insufficient data" for 2021 to be included. The most significant reduction occurred in North Dakota, where there were 1,314 admissions in 2016, which reduced to 352 admissions in 2019, an 73 percent decrease; TEDS indicated there was insufficient data available for 2020 to be posted. Ironically the state which showed the smallest reduction was South Dakota, whose marijuana program had not been initiated during the time frame of the available statistics. In South Dakota there were 1,549 admissions in 2016, which reduced to 1,149 admissions in 2020, a 26 percent decrease. The reason for the decrease in marijuana admissions, despite the apparent increase in overall marijuana use, is unknown at this time. The push for marijuana decriminalization in certain parts of the Midwest HIDTA region may have played a role in the decreased number of marijuana admissions, especially if court-mandated marijuana substance abuse programs are less prevalent, although this information is currently unsubstantiated. This reduction in admissions for treatment, could lead to even more severe consequences in the future for those who develop substance use disorders that are consequently left untreated.

Heart Health

Compared to most other prescription drugs, the long-term adverse health effects of marijuana use have had limited research. However, as more information becomes available, potential evidence suggests marijuana may be harmful to the heart. A January 2020 review article in the Journal of the American College of Cardiology, estimated more than 2 million Americans with heart disease currently use marijuana, or have done so in the past.[53] Dr. Muthiah Vaduganathan, a cardiologist at Harvard-affiliated Brigham and

Women's Hospital, stated the marijuana smoker typically takes large puffs with longer breath holds, as compared to a tobacco smoker, which may lead to as much or more chemical toxins being deposited into the smoker's lungs than to a cigarette smokers.[53] Smoking marijuana can have the physical effect of raising the user's blood pressure and causing their heart rate to accelerate, which can be dangerous for those who have been diagnosed with heart disease. The research suggests a marijuana smoker's risk of suffering a heart attack is several times higher in the hour following ingestion. The two most common chemical components found in marijuana, tetrahydrocannabinol (THC) and cannabidiol (CBD), bind to specific receptors in the brain, whether the marijuana is ingested by smoking it or by another method, such as an edible.[53] Dr. Vaduganathan said, "cannabinoid receptors are found throughout the body, including on heart cells, fat cells, and platelets, which are cells in the blood involved in clot formation."[51] Another study referred to the potential for cannabinoids to affect a number of medications used to treat or prevent heart disease, to include drugs used to treat heart rhythm disorders, cholesterol lowering medications, and blood pressure drugs.[54]

A recent study administered by the National Institutes of Health, compiled health information from 1 million or more people in the United States; the study's participants completed a survey on their cannabis use. The research team utilized the information from the respondents to break them down into five categories: daily users (4,763), weekly users (2,720), monthly users (2,075), those who used once or twice over three months (8,749), and those who never used (39,678). A few years later the research team compared these categories with the medical records of the participants. They discovered that "…daily cannabis users were 34 percent more likely to be diagnosed with coronary artery disease than those who had never used the drug". The researches even removed or considered contributing factors to heart disease, to include age, sex, and major cardiovascular risk factors (high blood pressure, high cholesterol, obesity, smoking, etc.), but the results remained the same. The exception was for the group who used marijuana less than 12 times per years, as they showed no "significant risk" such as found in the user group.[54]

Brain Development, School Performance, and Lifetime Achievement

The human brain continues to develop until an individual reaches their mid-20s.[55] During the developmental phase, the human brain is significantly more vulnerable to the adverse effects of drugs than one that has reached maturity.

- Adults who regularly smoked marijuana during adolescence have impaired neural connectivity in several brain regions compared to adults who did not.[48]
- Marijuana use impairs important cognitive functions during intoxication and for days after use.[56]
- Students who consume marijuana may operate at a cognitive level below their natural capability for significant periods of time, depending on frequency of use.[57]
- Heavy marijuana use has been linked to several negative factors later in life, including lower income, unemployment, higher need for socioeconomic assistance, criminal behavior, and lower satisfaction with life.[58]

Relation to Mental Illness

Many marijuana users justify their use as a treatment for mental illness, yet there is an absence of high quality evidence supporting these claims.[59] In actuality, marijuana use is correlated with the development or worsening of several mental health issues, including anxiety, depression, psychosis, schizophrenia, and suicidal ideation.[60] According to the findings of one study, more frequent marijuana use was significantly associated with more psychosis, depression, and anxiety symptoms for individuals ages 18 to 64.[61]

- Cannabis use disorder (CUD) was associated with increased psychosis symptoms for those ages 18 to 64; increased depression symptoms for those ages 18 to 61; and increased anxiety symptoms for those ages 18 to 61.[61]
- One study of female adolescents found that daily marijuana use was associated with a fivefold increase in the likelihood of reporting a state of anxiety or depression.[62]
- Multiple studies have revealed that using marijuana in adolescence significantly increases the risk of developing a psychotic disorder.[63,64]
- Those with underlying mental illnesses or who are genetically predisposed to mental illnesses (e.g. schizophrenia) are particularly at risk of experiencing a psychotic episode while using marijuana.[65]
- A link between schizophrenia—a mental illness characterized by continuous or relapsing episodes of psychosis— and regular marijuana use has existed for decades; this is especially true among adolescents who use marijuana. Many of these studies report a dose-response relationship where more frequent and/or higher potency marijuana use increases the chance of developing a schizophrenic disorder.[66]

- Numerous studies have documented a connection between marijuana and suicidality; this connection is especially apparent in youth. A large, longitudinal study of more than 2,000 adolescents found that those who used marijuana daily before age 17 had substantially higher odds of attempting suicide.[67] A meta-analysis of 11 studies comprising more than 23,000 individuals found that the odds of experiencing suicidal ideation and attempting suicide were significantly greater for marijuana users in young adulthood.[68]
- In Colorado—a state with one of the most expansive adult use and medical marijuana markets—THC is the most frequent drug found in toxicology results of teens that committed suicide.[69]
- Researchers from Queen's University in Ontario and the University of Calgary conducted a study of Cannabis Withdrawal Syndrome (CWS), and found that 47 percent of regular marijuana users experience CWS when they stop using the drug. The author's argued that because CWS criteria includes depression or anxiety symptoms, regular users may seek cannabis to obtain short-term symptom relief; however, this use could perpetuate a longer-term withdrawal problem.[70]

Marijuana Laws and Other Drug Overdose Rates

Proponents of marijuana legalization often tout medical marijuana as the key instrument in solving the opioid overdose crisis.[71] This claim relies upon a single study funded by the National Institute on Drug Abuse which was published in 2014.[72] The study found that states with medical marijuana laws had a 25 percent lower annual opioid overdose mortality rate between 1999 and 2010 than states without medical marijuana laws.

When the analysis was extended through 2017, however, not only did the findings not hold up to the new period, but the association between state medical marijuana laws and opioid mortality rates reversed.[73,74] The updated findings indicated that states with medical marijuana laws experienced a 23 percent higher opioid overdose death rate than states without medical marijuana laws. Ultimately, the study originally used to link marijuana legalization to lower rates of opioid overdose mortality proved false, as the expanded data pool showed a 48 percent swing to the contrary. Specifically, in Colorado, the overdose death rate has increased from 402 in 2013, the year following marijuana's adult use legalization, to 956 in 2020, an increase of 138 percent.[75]

- Marijuana users are more likely to abuse prescription opiates – a study in The American Journal of Psychiatry in 2017, sampled over 30,000 Americans, and found that marijuana users were more than twice as like to move on to abuse prescription opioids.[76]
- Marijuana use can decrease pain thresholds – research by Patient Safety in Surgery in 2018, found patients who reported using marijuana prior to admission for a traumatic injury experienced more pain than those who did not. The marijuana users, compared to non-users, were found to require more opioid medications during their stay, and consistently rated their pain higher during their hospitalization.[77]

Chapter 9: Environmental Impacts & Concerns

Introduction

The environmental impact of marijuana cultivation is startlingly high, particularly in terms of energy consumption, pesticide use, water diversion, and air pollution. Virtually every stage of the marijuana lifecycle is an energy-intensive process. Not only does its cultivation require a substantial amount of electricity and water, it also contributes to greenhouse gas emissions and the destruction of natural habitats. If careful consideration were given to the data regarding the impact of marijuana on the environment, one could find it difficult to be both a proponent of marijuana commercialization and also environmentally conscious.

Key Points

- The marijuana industry accounted for approximately one percent of all electricity used in the U.S. in 2016.[78]
- The cultivation and processing of marijuana emits volatile gases that contribute to ground-level air pollution.
- Water diversion, wildlife poisoning, and the destruction of habitats are common characteristics of illegal outdoor marijuana growing operations.

Energy Usage

The marijuana industry is one of the most energy-intensive in the U.S., accounting for about one percent of all electricity used in the U.S. in 2016.[78] Some states, such as Illinois, included energy efficiency requirements in their marijuana legalization bill that

mandate the use of energy efficient cultivation equipment (HVAC systems, lighting, etc.) and require the submission of energy reports to ensure compliance. As of May 2021, the marijuana programs of Iowa, Missouri, North Dakota, and South Dakota do not have any regulation in place governing the amount of energy a marijuana cultivation facility may consume.

Indoor Marijuana Cultivation

A considerable portion of legal marijuana is cultivated indoors. Indoor marijuana production requires a significant amount of electricity and other resources to ensure a profitable harvest. A byproduct of marijuana cultivation is the emission of highly reactive volatile organic compounds (VOCs).[79] VOCs react with nitrogen oxides in the atmosphere to form ground-level ozone, an environmental pollutant also known as smog.[80] Marijuana-infused product facilities also emit VOCs from solvent extraction processes.[79]

According to a study from Colorado State University examining the effects of indoor cannabis production on greenhouse gas emissions, marijuana grown indoors produces between 2,283 and 5,184 kilograms of carbon dioxide (CO_2) per kilogram of dried flower.[81] This variance is dependent upon the region of the U.S. where the marijuana is grown. Put another way, growing one ounce of marijuana generates as much carbon as burning seven to 16 gallons of gasoline.[82] Greenhouse gas emissions from indoor marijuana cultivation are largely due to power consumption from indoor climate controls, high-intensity discharge grow lights, and supplemental CO_2 for accelerated plant growth.[81]

Another study, this one conducted by Evan Mills Ph.D. and Scott Zeramby, stated the cannabis sector is woefully behind other parts of the economy regarding energy efficiency. On a national perspective, as of a decade ago, Mills found that the typical small to mid-scale indoor cannabis cultivators consumed 20 billion kilowatt-hours of electricity, combined with direct fuel use, equaled 15 million metric tons of CO2 released into the atmosphere each year. These figures equate to an expenditure of approximately $6 billion per year on energy, and 1% of the electricity used in the United States. This national estimate is equivalent to the emissions of 1.7 million homes in the United States, or 3 million cars. From the perspective of a consumer, "the energy use for growing one 1-gram marijuana cigarette ("joint") creates 10 pounds of carbon dioxide pollution, which is equal to the energy expended running ten 10-watt LED light bulbs for 76 hours". A small cannabis cultivator, utilizing just ten grow lights, consumes approximately as much electricity as ten average homes in the United States.[83]

Outdoor Marijuana Cultivation

Outdoor marijuana cultivation, especially on public lands, causes substantial environmental damage. This practice "…poses significant environmental concerns for law enforcement and other public agencies", that encounter illegal marijuana cultivation sites.[85] Marijuana cultivation is both water- and nutrient-intensive.[84] While outdoor marijuana cultivation requires less electricity than indoor cultivation because of a lesser need for lights and environmental controls, this method has its own set of environmental concerns. Illicit marijuana growers frequently contaminate and alter watersheds; divert natural waterways; clear-cut native foliage; poach wildlife; create wildfire hazards; and pollute the surrounding environment with garbage, human waste, and non-biodegradable materials.[85]

An average marijuana plant uses approximately six to nine gallons of water per day.[86,87] According to Dr. Mourad Gabriel—a prominent researcher in the field of the environmental impact of illicit marijuana grows and former co-director of the Integral Ecology Research Center (IERC)— illegal marijuana grows use 50 percent more water than legal grows. This is primarily because illegal grow sites use less efficient irrigation systems and add to existing environmental stressors like pests.[86]

Irrigation lines removed from an illegal marijuana grow site.
Source: https://tinyurl.com/3ed75883

A common rodenticide discovered at an illegal outdoor marijuana grow site.
Source: https://tinyurl.com/3v87dnx7

Chapter 10: Budgetary and Taxation Impacts

Introduction

This chapter will highlight several of the common marijuana tax revenue claims, and compare them with the realities experienced by a multitude of the states who have legalized marijuana for either medical or adult-use purposes. The information utilized focused primarily on the states with the most mature marijuana markets, and was obtained from open source searches conducted in February 2023, which includes information derived from the SAM website.

Key Findings

- In the states where legalization has occurred, they have learned taxing marijuana is complicated and the revenue stream is inconsistent.
- The societal impacts incurred by legalization (i.e. expanding illicit market sales, workforce shortages, addiction rates, and homelessness), are a common omission by proponents.
- Post-legalization, marijuana industry leaders lobby legislatures to reduce their taxes, despite these very taxes being one of their arguments for legalization.

Tax Revenue

In the states which have moved towards legalization, some of the primary lobbying tactics presented to government officials were that legalization would be a way to raise new tax revenue from sales and production, which could then be available to assist with education, mental health, and law enforcement budgets. Following legalization, states have learned taxing marijuana is complicated and the revenue stream is inconsistent, leading to the tax revenue to largely fall short of expectations. The size of a state's legal marijuana market has also proven to be difficult to project and regulate, coupled with the difficulty of curtailing illicit market marijuana sales.[88]

Advocates for legalization in California forecasted legalization would produce $1 billion a year in tax revenue; the first year of adult use sales, 2018-19, the state did not raise a third of this projected amount. The shortfalls have not been in all of the "legal" states, Colorado was nearly exactly right on their revenue estimate, and Nevada surpassed their expectations. However, it is still inherently difficult to integrate marijuana tax revenue into a budget, as the legal adult use cannabis market is unpredictable, partly due to it still competing with illicit market cannabis sales.[88]

A common omission when presenting the potential benefits of tax revenue, is the costs incurred by legalization. The leading budget consumers for "legal" states continue to be law enforcement, to enable them to combat expanding illicit market sales, the potential for rising drugged driving accidents and fatalities, workforce shortages, homelessness, and mental and other health issues.

Revenues versus Reality:

- In 2022, tax revenue from marijuana accounts for less than 2 percent of state revenues in the mature markets where the drug is "legal:" Colorado 1.7 percent; California .3 percent; Washington 1.5 percent; Alaska 1.2 percent; and Oregon 1.0 percent.[89]
- Marijuana industry lobbyists promote the benefits and record sales amounts through the media, but will concurrently be seeking taxpayer-funded bailout funds to compensate for revenue shortfalls.[90]
- Post-legalization, the marijuana industry leaders are now lobbying the legislatures to reduce their taxes, despite the proposed revenue generation of these very taxes being one of the arguments utilized to gain legalization.[90]
- These tactics are not new, "Big Tobacco" has been lobbying for decades for tax cuts, and has strategically aligned themselves with trade groups for convenience stores and grocers.[90]
- "You do not legalize for taxation. It is a myth. You are not going to pave streets. You are not going to be able to pay teachers. The big red herring is the whole thing that the tax revenue will solve a bunch of crises. But it won't." – Andrew Freedman, former Director of Marijuana Coordination, Colorado.[90]

Chapter 11: Regulatory Overview

Introduction

This chapter will provide an overview of the regulations discussed in each of the Midwest HIDTA states' medical marijuana programs. These include purchase and possession limits; cultivation limitations; and restrictions on the packaging, labeling, and marketing of marijuana and marijuana products. As Missouri's adult use marijuana program is still pending, it may be excluded from one or more sections.

Key Findings

- Possession limitations
    - Iowa: There is not a medical cannabidiol product quantity possession limit for registered cardholders and caregivers.
    - Missouri: may possess up to 3 ounces of cannabis, and to home-cultivate up to 6 flowering plants, 6 immature plants, and six plants under 14 inches for personal use., after applying for and being granted a consumer personal cultivation card.
    - North Dakota: 3 ounces of dried flower for standard patients; enhanced amount of 6 ounces is available for registered qualifying patients with a debilitating medical condition or cancer. Registered patient with an enhanced amount authorized may possess up to 7.5 ounces of dried flower. Patients are not authorized to cultivate at home.
    - South Dakota: Once operational, individuals will be able to possess up to three ounces of dried marijuana flower; qualifying patients allowed to grow up to four cannabis plants for medical use.
- All states require qualifying patients to carry a medical marijuana identification card.
- All states require marijuana businesses to implement inventory tracking systems.
- Each state has its own regulations governing the advertising, packaging, and labeling of marijuana and marijuana products.

Iowa / Code Chapter 124E

Also known as the Medical Cannabidiol Act, Iowa Code Chapter 124E authorizes the use of mCBD to treat a list of qualifying medical conditions.

Administration:

The Office of Medical Cannabidiol (OMC) at the Iowa Department of Public Health (IDPH) is responsible for the oversight of the mCBD program. The Iowa State Legislature authorized the IDPH to establish requirements for health care practitioner certification, approve applications for patient mCBD registration cards, approve licensure of mCBD manufacturers and dispensaries, inspect manufacturer and dispensary facilities, and collect all application and registration fees.

Qualifying medical conditions:

Physicians may recommend mCBD as a treatment for those diagnosed with one of the following qualifying medical conditions: cancer, severe or chronic pain, nausea or severe vomiting, cachexia; multiple sclerosis, seizures, AIDS or HIV, Crohn's disease, amyotrophic lateral sclerosis, any terminal illness with a probable life expectancy of under one year, Parkinson's disease, chronic pain, severe autism, and post-traumatic stress disorder. The IDPH, in conjunction with the Medical Cannabidiol Board and the Board of Medicine, has the authority to add additional medical conditions as the program continues.

Possession / Cultivation

Individuals who are eligible under Iowa's mCBD program may only possess the following approved marijuana products: 1) oral forms, including but not limited to, tablets, capsule, liquid, tincture, and sublingual; 2) topical forms, including but not limited to, gel, ointment, cream, or lotion, transdermal patch; 3) inhaled forms, limited to, nebulizable, and vaporizable; 4) rectal/vaginal forms, including but not limited to suppository.[91] Marijuana flowers, edibles, and concentrate products (excluding vape cartridges) are illegal.

By rule, the IDPH limits sales of mCBD to patients to a 90-day supply at any given time. Iowa's Medical Cannabidiol Act allows patients to possess up to 32 fluid ounces (907.1 grams) of mCBD at any time. An mCBD dispensary cannot dispense more than a combined total of 4.5 grams of THC to a patient or qualified caregiver in a 90-day period. Registered caregivers may possess up to this same amount per patient they service. Personal cultivation of marijuana is prohibited. Due to the passing of Senate File 2363 (June 2020), there are no longer any restrictions on the amount of THC a product may contain.[91]

Licensing

Manufacturer Location Requirements[92]

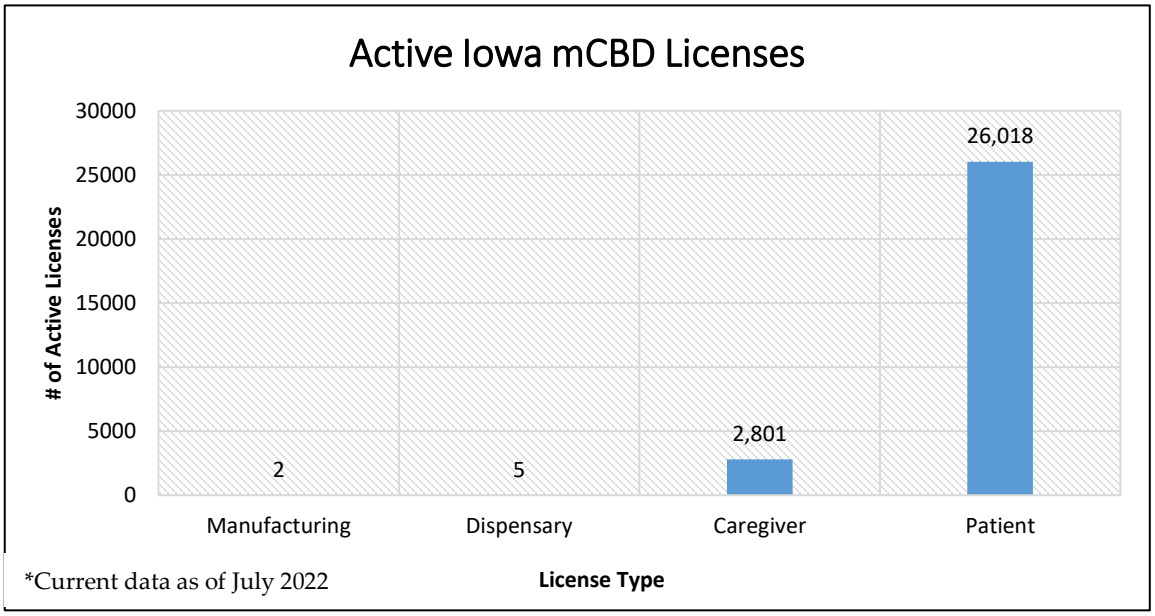
- All of a manufacturer's operations must take place in a secured manufacturing facility location, at a physical address provided to the department during the licensure and application processes.

- A manufacturer may not operate a manufacturing facility at the same physical location as an mCBD dispensary.
- A manufacturer may not operate a manufacturing facility in any location, whether for manufacturing, possessing, cultivating, harvesting, transporting, packaging, processing, storing, or supplying within 1,000 feet of a public or private school existing before the date of the manufacturer's licensure.

Dispensary Location Requirements[92]

- All dispensing of mCBD must take place in an enclosed facility at a physical address provided to the department.
- A dispensary may not operate at the same physical location as a manufacturer.
- A dispensary may not operate in any location within 1,000 feet of a public or private school existing before the date of the dispensary's licensure by the department.

Figure 30: Active Iowa mCBD Licenses, by Type



Source: Iowa Department of Public Health Medical Cannabidiol Program Update

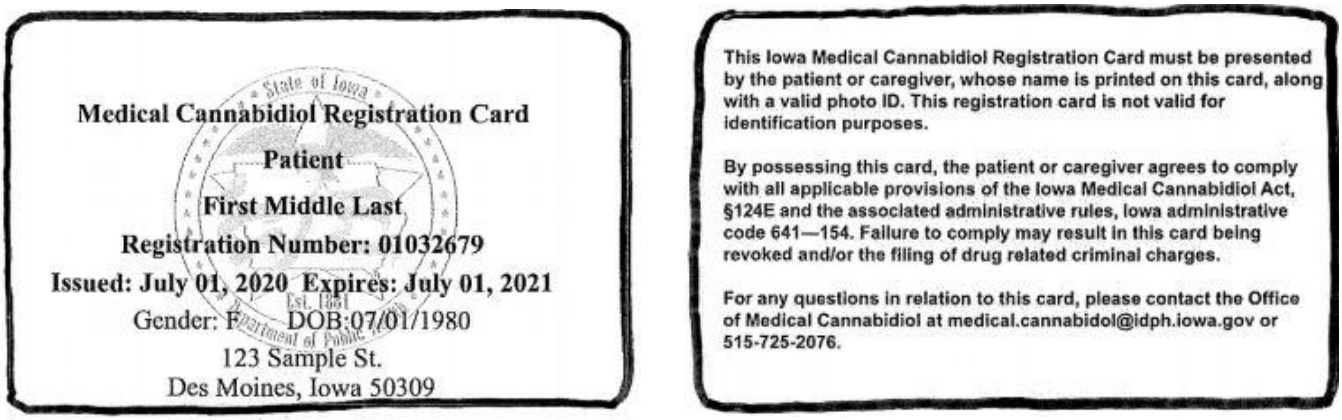
Medical Marijuana Identification Card

The four states within the Midwest HIDTA region with active medical marijuana programs—Iowa, Missouri, North Dakota, and South Dakota—issue identification cards for individuals authorized to consume marijuana by their respective state departments. Information unique to the authorized individual is printed on the card. This includes the

patient's name, date of birth, registration number, expiration date, and certain program authorizations unique to that individual (e.g. number of plants they may cultivate).

The Iowa Department of Public Health (IDPH) issues qualifying individuals a registration card, as seen in Figures 30 and 31. A patient's mCBD registration card expires one year from the time it is issued by the IDPH.

Figure 30: Iowa Patient Registration Card (Front & Back)



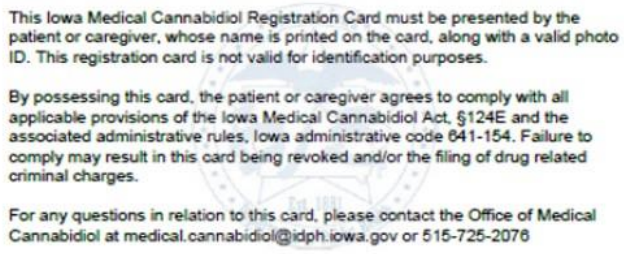
Iowa New Patient Registration Card (Front & Back)

Figure 31:

New Digital Card (*After July 6, 2022*)

Front

Back



Traceability

Iowa's mCBD program states that manufacturers and dispensaries must establish and implement a real-time, statewide mCBD inventory and delivery tracking system. The system is to be always be available to mCBD dispensaries, to track mCBD from production by a licensed manufacturer through dispensing at an mCBD dispensary.[92] This system is also referred to as a seed-to-sale tracking system by the IDPH. The manufacturer must

also maintain a constant record of the quantity and form of the mCBD, the number of plants being grown at the facility, and the names of the employees maintaining the inventory. The system will be used to verify that a person is lawfully in possession of an mCBD registration card; and possess the ability to track the date and quantity of the sale of mCBD purchased by a patient or caregiver.[92] The IDPH utilizes the OstriJ inventory tracking system for all mCBD-related information.

Potency

Prior to the passage of Iowa Senate File 2363 (SF 2363) in June 2020, Iowa's program only authorized mCBD products containing no more than 3 percent THC for non-smoking use. The passage of SF 2363 removed the restrictions on the amount of THC a product may contain in Iowa and allowed the use of vaporizable products.[93] SF 2363 also added a restriction that limits the amount of THC a patient may purchase in a 90-day period to 4.5 grams.

Marijuana Product Packaging and Labeling

A manufacturer must package all mCBD intended for distribution according to the following standards: [91]

- mCBD packaging may not bear a reasonable resemblance to commonly available nonmedical commercial products;
- the manufacturer must package mCBD products in a manner that minimizes its appeal to children; and
- the manufacturer may not depict images other than the business' name or logo on the package.

The label must include:

- the name and address of the manufacturer where the product was created;
- the primary active ingredients, including levels of THC and CBD;
- directions for use of the product;
- all ingredients of the product shown with common or usual names;
- instructions for storage;
- the date of expiration;
- the date of manufacture and lot number;
- a notice with the statement: "This product has not been analyzed or approved by the United States Food and Drug Administration. There is limited information on

the side effects of using this product, and there may be associated health risks and medication interactions. This product is not recommended for use by pregnant or breastfeeding women. KEEP THIS PRODUCT OUT OF REACH OF CHILDREN.";

- the universal warning symbol provided by the IDPH; and a notice with the statement: "This medical cannabidiol is for therapeutic use only. Use of this product by a person other than the patient listed on the label is unlawful and may result in the cancellation of the patient's medical cannabidiol registration card. Return unused medical cannabidiol to a dispensary for disposal."

Marijuana Product Advertising

Marketing and advertising activities permissible under Iowa law allow a marijuana business to display its name and logo on mCBD labels, signs, website, and informational material provided to registered individuals with a qualifying condition. The name and logo may not include[91]:

- images of marijuana or marijuana paraphernalia;
- colloquial references to marijuana;
- the names of marijuana plant strains or varieties;
- unsubstantiated medical claims; or
- medical symbols that resemble established medical associations (e.g. the American Medical Association).

A marijuana business may display signs on the property of the business and maintain a business website that contains the following information:

- the business' name and contact information;
- the mCBD forms and quantities produced in Iowa; and
- other information as approved by the IDPH.

The business' website may not include any false, misleading, or unsubstantiated statements regarding health or physical benefits to the patient. If a marijuana business wishes to conduct marketing or advertising activities outside of those specified above, they must receive written approval from the IDPH before conducting said activities.

Regulation:

The IDPH must select and license up to two mCBD manufacturers and five dispensaries to cultivate, manufacture, and supply mCBD and shall license new manufacturers or

relicense existing manufacturers each year. The IDPH may select additional proposals for up to two out-of-state mCBD dispensaries from a bordering state to sell and dispense mCBD to Iowa-based patients.

Taxation:
Iowa's mCBD program mandates that all fees collected from the mCBD program shall be retained by the IDPH for operation of the mCBD registration card program and the licensing programs and shall not revert to the state general fund. Each patient mCBD registration card fee will cost $100 unless the patient qualifies for a reduced fee of $25. Primary caregiver registration card fees will cost $25, as will each renewal. Each application fee for licensure as a manufacturer will cost $7,500. Each application for licensure as a dispensary will cost $5,000. Sales of mCBD products are subject only to Iowa state sales tax of 6%.

Missouri / Amendment 2 and 3

Missouri Constitutional Amendment 2 was sponsored by the pro-marijuana advocacy group, "New Approach Missouri," and passed in 2018. Missouri Constitutional Amendment 3 was sponsored by pro-marijuana advocacy group "Legal Missouri 2022," and passed in 2022. The amendments and regulations have been broken down and analyzed in the sections below.[94]

Administration:
The Missouri DHSS is the authority for the medical and adult-use marijuana programs and controls state licenses and certifications for marijuana cultivators, dispensaries, patients, and caregivers. It is also the responsibility of the DHSS to promulgate rules concerning the state's marijuana trade, develop identification cards, and issue standards for the secure transportation of marijuana.

Qualifying medical conditions:
Physicians or nurse practitioners may recommend marijuana and marijuana products as a treatment for those diagnosed with one of the qualifying medical conditions. Some of these conditions give discretion to the physician to decide if marijuana is suitable for an unspecified illness.

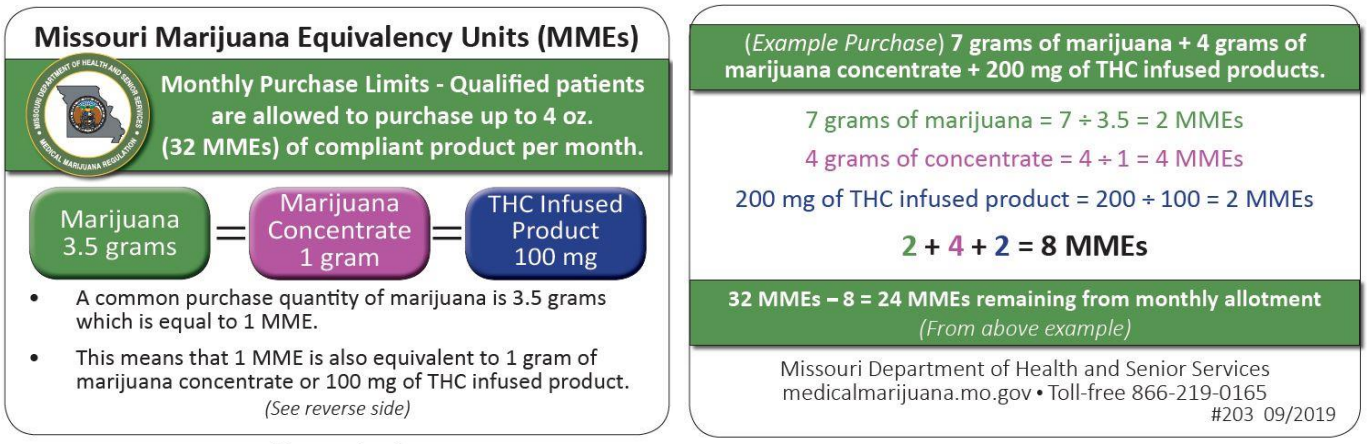
Possession/Cultivation:
Those possessing an approved patient identification card may purchase up to six ounces of dried, processed marijuana, or its equivalent within a 30-day period, unless the patient

has been certified for a higher amount by their physician or nurse practitioner.[K] These cardholders may be in possession of up to a 60-day supply (twelve ounces).[95] This twelves ounce supply would equate to approximately 11.2 marijuana cigarettes ("joints") per day: 12oz = 340g, divided by 60 days = 5.7g a day, .5g per joint = 11.4 joints per day.

Adult-use marijuana may be purchased by consumers who are at least twenty-one years of age. A consumer may purchase up to three ounces of marijuana in a single transaction, and be lawfully in possession of up to three ounces of dried, processed marijuana or its equivalent. A consumer possessing a personal cultivation identification must keep any amount of cultivated marijuana above their allowed three-ounce possession limit at their residence in an approved enclosed, locked facility. Qualified individuals who cultivate marijuana may possess up to a 90-day supply of dried marijuana or its equivalent as long as the marijuana remains in an approved enclosed, locked facility.[95]

According to the Missouri Department of Health and Senior Services (DHSS), a common purchase quantity of dried marijuana is 3.5 grams. The Missouri DHSS considers this as one Missouri Marijuana Equivalency Unit (MME). Figure 32 below is provided by the DHSS to illustrate MMEs.

Figure 32: Missouri Marijuana Equivalency Units Card



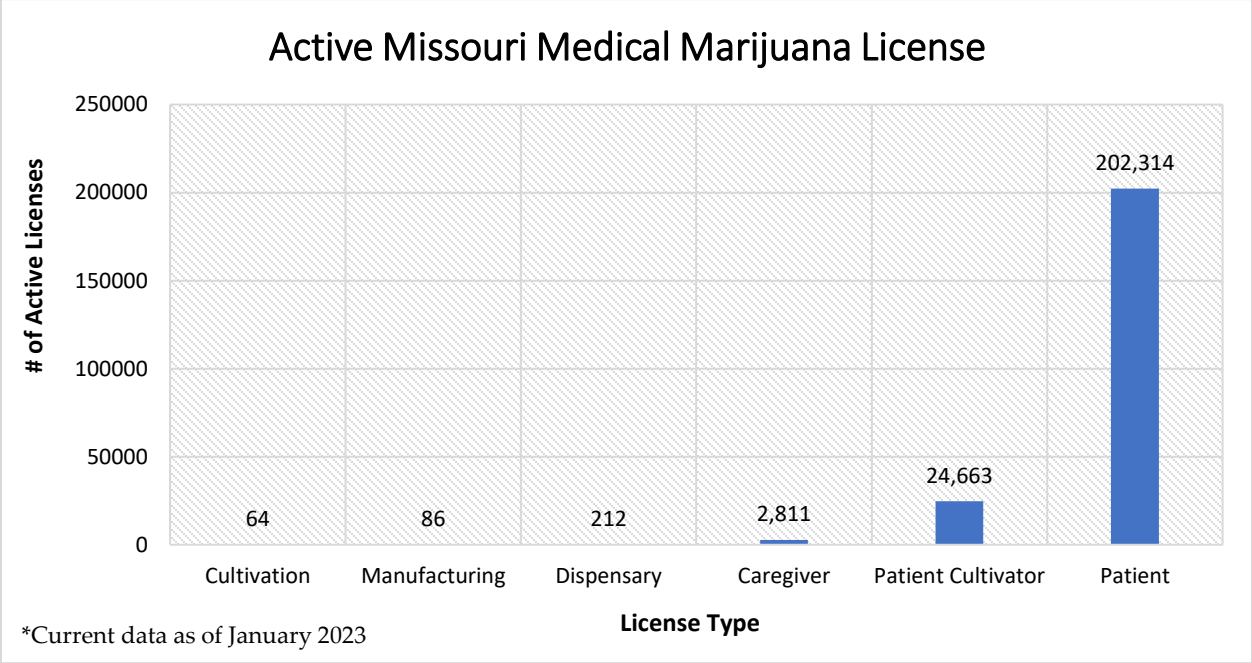
(Front view) (Back view)

[K] Dried, unprocessed marijuana or its equivalent means the marijuana flower after it has been cured and trimmed.

Licensing

The location requirements for Missouri marijuana businesses do not differentiate between dispensaries, cultivators, or manufacturers. Marijuana business entities must not reside within 1,000 feet of an existing elementary or secondary school, daycare, or church. If a local government allows for closer proximity to these facilities, the business must comply with the local government's requirements.[95]

Figure 33: Active Missouri Medical Marijuana Licenses, by Type

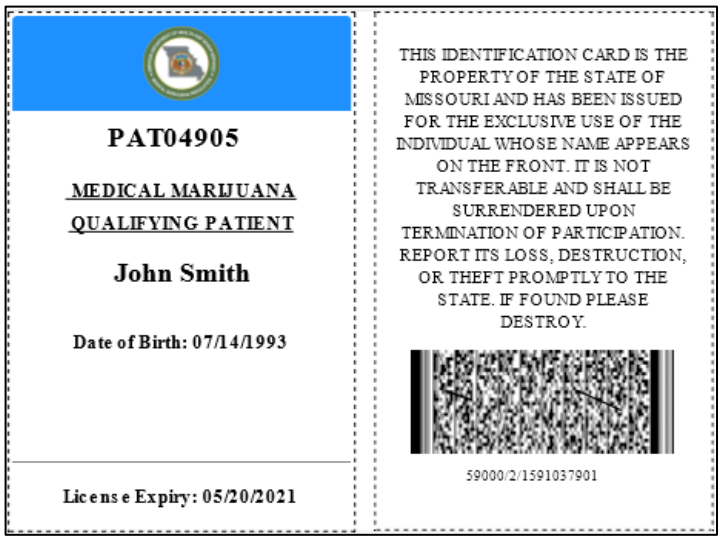


Source: Missouri Department of Health and Human Services

Medical Marijuana Identification Cards

Rather than issuing physical marijuana registration cards, the Missouri DHSS requires that registered patients print off an official card to prove they are qualified patients. An example of this form is depicted in Figure 34. The Missouri DHSS requires marijuana patient cards to be renewed on an annual basis.

Figure 34: Missouri Patient Registration Card



Tracking System

Under Missouri's medical marijuana program, licensed dispensaries are required to maintain an operational seed-to-sale tracking system that is integrated into the statewide track and trace system.[95] The Missouri Medical Marijuana Regulatory Program utilizes the Marijuana Enforcement Tracking Reporting & Compliance (METRC) system for monitoring the state's seed-to-sale tracking requirements. Following the passing of Amendment 3, METRC's contract was expanded to include the adult-use supply chain. Dispensaries are required to maintain records of sales that are available to state departments and law enforcement agencies. This record must also contain an encrypted patient number that details all amounts and types of marijuana sold to the patient by the seller and must be maintained for five years from the date of sale.

Potency

There are no restrictions on the amount of THC a product may contain. However, there are monthly purchase and possession limitations.[L] A qualifying individual may not purchase more than 3,200 milligrams of THC within a 30-day period.

[L] See Figure 32 from "Possession".

Marijuana Product Packaging and Labeling

Marijuana businesses must not package or label marijuana in a false or misleading manner or in any way designed to cause confusion between a marijuana product and any product that does not contain marijuana. Marijuana and marijuana products may not be designed in a way that appeals to a minor and must be sold in containers that clearly label the product as containing marijuana or a marijuana-infused product.[96] Packaging must also bear the following message: "Warning: Cognitive and physical impairment may result from the use of marijuana. According to the Missouri DHSS rules for medical marijuana, marijuana and marijuana products must have a label displaying the following information:

- the total weight of the marijuana included in the packaging;
- dosage amounts, instructions for use, and estimated length of time the dosage will have an effect;
- the THC and CBD concentration per dosage;
- all active and inactive ingredients, which must not obscure the actual ingredients;
- in the case of dried marijuana, the name of the cultivating facility from which the marijuana in the package originated and, in the case of marijuana concentrate, the name of the infused-product manufacturer; and a "best if used by" date.

Marijuana Product Advertising

Missouri has yet to impose many of the restrictions on marijuana advertising as seen in other states. However, the Missouri DHSS has created strict limitations on facility signage. Under these limitations, images depicting marijuana plants, products, or paraphernalia—including smoke—are prohibited on outdoor signage located on marijuana facility premises.[96] Indoor signage that is visible to the public from the outside is also prohibited. There are no Missouri DHSS regulations regarding advertisements at locations other than facility premises.

There are several dispensary-specific rules affecting marijuana advertising. Green cross symbols, commonly displayed at marijuana dispensaries in other legal states, are not allowed. Marijuana dispensaries may not use the following terms in their business name:

- pharmacist;
- pharmacy;
- apothecary or apothecary shop;
- chemist shop;
- drug store;
- druggist;
- drugs;
- consultant pharmacist; or

  any words similar to those above unless the place of business is supervised by a licensed pharmacist.

Regulation:
The DHSS is obligated to approve at least one medical marijuana cultivation facility license per 100,000 residents and one marijuana-infused product manufacturing facility license per 70,000 residents. The DHSS may not limit the number of marijuana 66 dispensary licenses to less than 24 licenses for marijuana dispensaries in each congressional district.

Taxation:
Amendment 2 authorized a tax of 4 percent upon the retail sale of medical marijuana at licensed marijuana dispensaries within the state. Amendment 3 applies a 6 percent tax on the retail sale of marijuana for adult use use sold at marijuana dispensary facilities within the state. By law, sales tax proceeds from adult-use cannabis sales will first go to the Department of Revenue to operate the program. The remainder will go towards governmental entities to carry out expungement of certain marijuana offenses; the Missouri veterans commission for health care and other services for veterans; the Missouri public defender system to provide legal assistance to low-income Missourians; and local governments if the local government taxes cannabis sales.

North Dakota / Measure 5

North Dakota Statutory Measure 5 was sponsored by "North Dakotans for Compassionate Care." The bill passed in 2016 and became law in 2017. The amendment and regulations have been broken down and analyzed in the sections below.[97]

Administration:
The North Dakota Department of Health is responsible for the issuance of caregiver registry identification cards, qualifying patient registration, and compassion center regulation.

Qualifying medical conditions:
A healthcare provider may recommend marijuana and marijuana products as a treatment to patients diagnosed with one of many qualifying debilitating medical conditions, which include: cancer, Crohn's disease, fibromyalgia, migraines, eating disorders, posttraumatic stress disorder, and anxiety disorder.

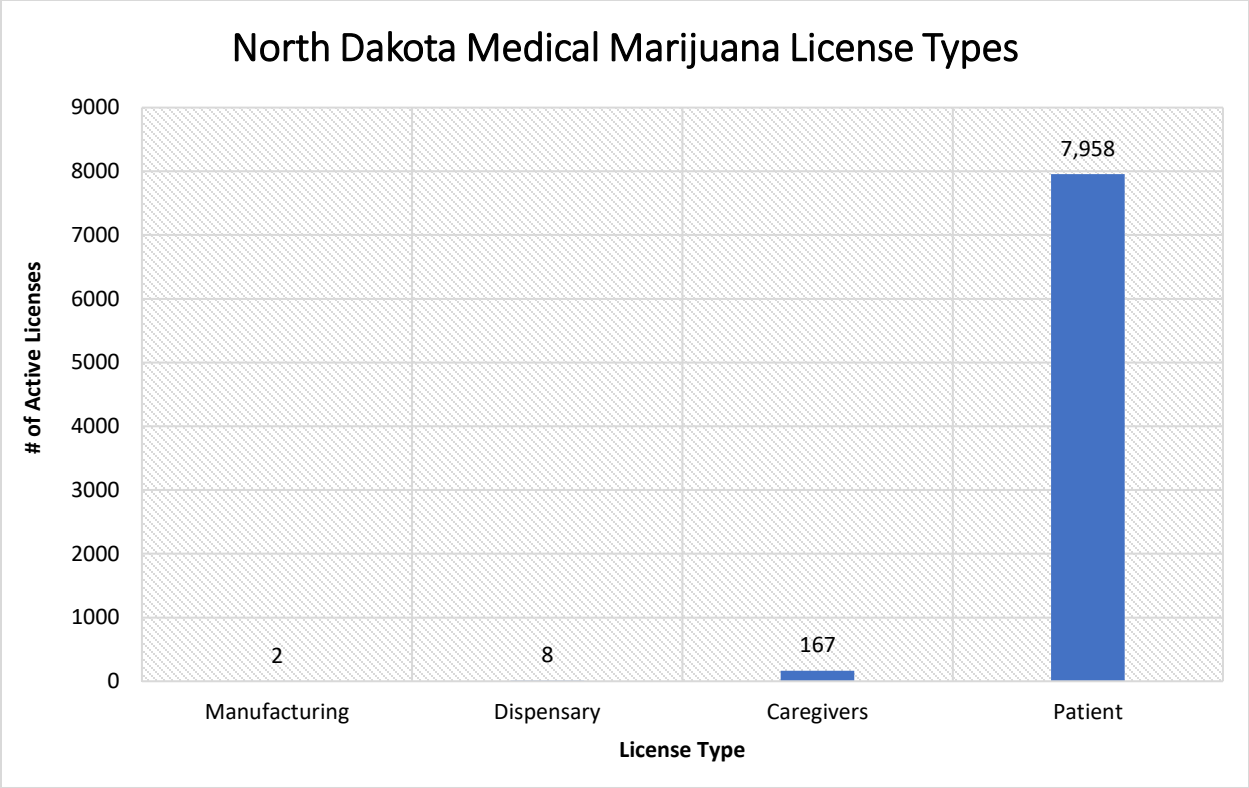
Possession/Cultivation:
The maximum purchase amounts for a qualifying individual within a 30-day period is 2.5 ounces of dried marijuana flower and a cumulative total of 4,000mg of THC from other marijuana products. A qualifying individual may not possess more than three ounces of dried marijuana flower at any given time. A registered qualifying patient may not purchase or have purchased by a registered designated caregiver more than the maximum concentration or amount of tetrahydrocannabinol permitted in a thirty – day period.

Patients must have a specific certification from their physician in order to consume herbal cannabis formulations via combustion. Otherwise patients are permitted only to obtain cannabis infused tinctures, capsules, patches, or topical. Edible products are not defined as a "medical cannabinoid product" under the act. A health care provider may authorize the use an enhanced amount (up to six ounces) of dried leaves or flowers of the plant of the genus cannabis in a combustible delivery form to treat or alleviate the patient's debilitating medical condition of cancer. Home cultivation is not allowed following the passage of SB 2344.[97]

If a qualifying individual is authorized to possess an enhanced amount of marijuana, they may not purchase more than six ounces of dried marijuana flower within a 30-day period. Individuals authorized to possess enhanced amounts of marijuana may not possess more than 7.5 ounces of dried marijuana flower at any given time. Home cultivation of marijuana plants is illegal.[97]

Licensing
Similar to Missouri, the location requirements for North Dakota marijuana businesses do not differentiate between dispensaries or manufacturers. Both manufacturing facilities and dispensaries must be at least 1,000 feet from the property line of a pre-existing public or private school.[97]

Figure 35: Active North Dakota Medical Marijuana Licenses, by Type



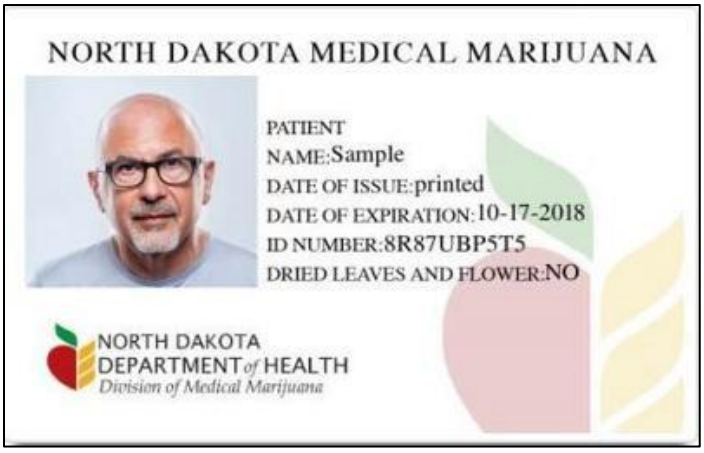
Source: North Dakota Department of Health and Human Services

Medical Marijuana Identification Cards

The North Dakota Department of Health (NDDH) also requires patients to register for a medical marijuana patient identification card, which can either be a physical or electronic card. As with other state marijuana identification cards, NDDH requires marijuana patient cards to be renewed on an annual basis.[97]

*Current data as of June 2022

Figure 36: North Dakota Registration Card (Front & Back)



Tracking System

Measure 5 requires manufacturing facilities and dispensaries to employ a bar coding inventory control system to track batch, strain, and amounts of marijuana and usable marijuana in inventory. The program requires dispensaries to keep detailed financial reports of proceeds and expenses and that they must maintain all inventory, sales, and financial records in accordance with generally accepted accounting principles and to track amounts of usable marijuana sold. A secure computer interface to transfer inventory amounts and purchase information to the Department of Health is also required.[97] The NDDH selected BioTrackTHC as the inventory control vendor and requires all dispensaries to maintain records within it.

Potency

Minors and their caregivers are not allowed to purchase marijuana or marijuana products that contain more than 6 percent THC. There are no potency limitations for dried marijuana for all other qualifying individuals, although individuals may not purchase more than 4,000 milligrams of THC from all other marijuana products within a 30-day period.[97]

Marijuana Product Packaging and Labeling

According to North Dakota's medical marijuana legislation, the packaging of usable marijuana sold at a dispensary must include the following:

- the name of the strain, batch, and quantity;
- the statement "This product is for medical use only, not for resale"; and

details indicating that the marijuana is free of contaminants and the levels of active ingredients in the product within plus or minus 5 percentage points.

Additionally, the marijuana packaging used by a manufacturing facility must by approved by the department of health and human services, and meet the following standards: containers must be plain, tamper-evident, child-resistant, and packaged to minimize its appeal to children.[97]

Marijuana Product Advertising

For the purposes of advertising or marketing, a dispensary may display its business name and logo on its labels, signs, websites, and informational material provided to registered individuals with a qualifying condition. The dispensary's name or logo may not include:

- images of marijuana or marijuana paraphernalia;
- colloquial references to marijuana;
- names of marijuana plant strains; or
- medical symbols that resemble established medical associations.

A dispensary's website may contain:

- the business' name;
- contact information;
- hours of operation;
- marijuana products offered;
- product pricing; and
- other information approved by the ND DPH.

A manufacturing facility may display its name and logo on product logos, websites, and informational material. Similar to dispensary requirements, the name and logo may not include:

- images of marijuana or marijuana paraphernalia;
- colloquial references to marijuana;
- names of marijuana plant strains; or
- medical symbols that resemble established medical associations.

A manufacturing facility's website may contain the business' name, phone number, and other information approved by the ND DPH.[97]

Regulation:

A compassion center is subject to random inspection by the Department of Health. During an inspection, the department may review the compassion center's records, including the

compassion center's financial and dispensing records, which may track transactions according to registered qualifying patient and registered designated caregiver registry identification numbers. The department shall conduct inspections of compassion centers to ensure compliance with this chapter. The department shall conduct inspections of manufacturing facilities for the presence of contaminants. The department shall select a certified laboratory to conduct random quality sampling testing, in accordance with rules adopted under this chapter. A compassion center shall pay the cost of all random quality sampling testing. A compassion center may not possess more than 1,000 marijuana plants, irrespective of their stages of growth. Compassion centers may not possess more than 3,500 ounces of usable marijuana, regardless of formulation.

Taxation:

North Dakota patients are required to pay a 5.00% sales tax on every purchase of medical marijuana; there is no additional excise tax on medical marijuana in North Dakota. Recreational marijuana is illegal in North Dakota, so there are no taxes for it.

South Dakota / Measure 26

South Dakota voters passed Constitutional Measure 26 in 2020, thereby legalizing medical marijuana. Since then, the South Dakota Medical Cannabis program has been launched and is operational for individuals in South Dakota who have a debilitating medical condition.[98]

Administration:

The South Dakota Department of Health ("Department") is responsible issuing licenses for commercial cultivators and manufacturers, testing facilities, wholesalers, and retailers. The Department is also responsible for creating and presenting rules and regulations to the state legislature.

Qualifying Medical Conditions:

Physicians, physician assistants, or advanced practice registered nurses, who are licensed with authority to prescribe drugs to humans, may certify medical cannabis patients as having a "debilitating medical condition," defined by SDCL 34-20G-1 as "a chronic or debilitating disease or medical condition or its treatment that produces one or more of the following: cachexia or wasting syndrome; severe, debilitating pain; severe nausea; seizures; or severe and persistent muscle spasms, including those characteristic of multiple sclerosis".

Possession / Cultivation

Under South Dakota Constitutional Law (SDCL) 34-20G-1(1)(b), cardholders and nonresident cardholders may possess cannabis products if the equivalent cannabis weight of the products plus the amount of cannabis flower and trim possessed does not exceed three ounces pursuant to SDCL 34-20G-1(1)(a). The equivalent cannabis weight of cannabis products shall be. According to the measure, qualifying individuals who register to cultivate marijuana at home may have a grow of three marijuana plants minimum; a qualifying individual may grow additional plants if prescribed by their medical physician.[98]

Licensing

Measure 26, the Medical Marijuana Initiative of 2020, established a system of licenses and regulations administered by the South Dakota Department of Health for medical marijuana business establishments. These business establishments include cultivation facilities, manufacturing facilities, dispensaries, and testing laboratories. A cultivation license authorizes the holder to cultivate, harvest, dry, cure, package, distribute, transfer, transport, or sell cannabis to medical cannabis facilities. A licensee may also package and label cannabis for retail sale. According to 44:90:05:04 of South Dakota's Medical Cannabis Final Rules, the only acceptable areas where licensees can cultivate cannabis include:

- An indoor facility
- One or more greenhouses
- Within a secured, fenced–in area

These cultivation areas must meet all the requirements of Section 44:90:04:05 through 44:90:04:10. Some of the requirements are:

- The cultivation facility must not perform any cultivation facility activity outside the operation of hours stated in the facility's approved operating procedures except in critical situations requiring prompt action to protect inventory from destruction. However, the licensee will be required to notify the department within one business day about the nature of the critical situation, the activities conducted, and the date and time of the activities.

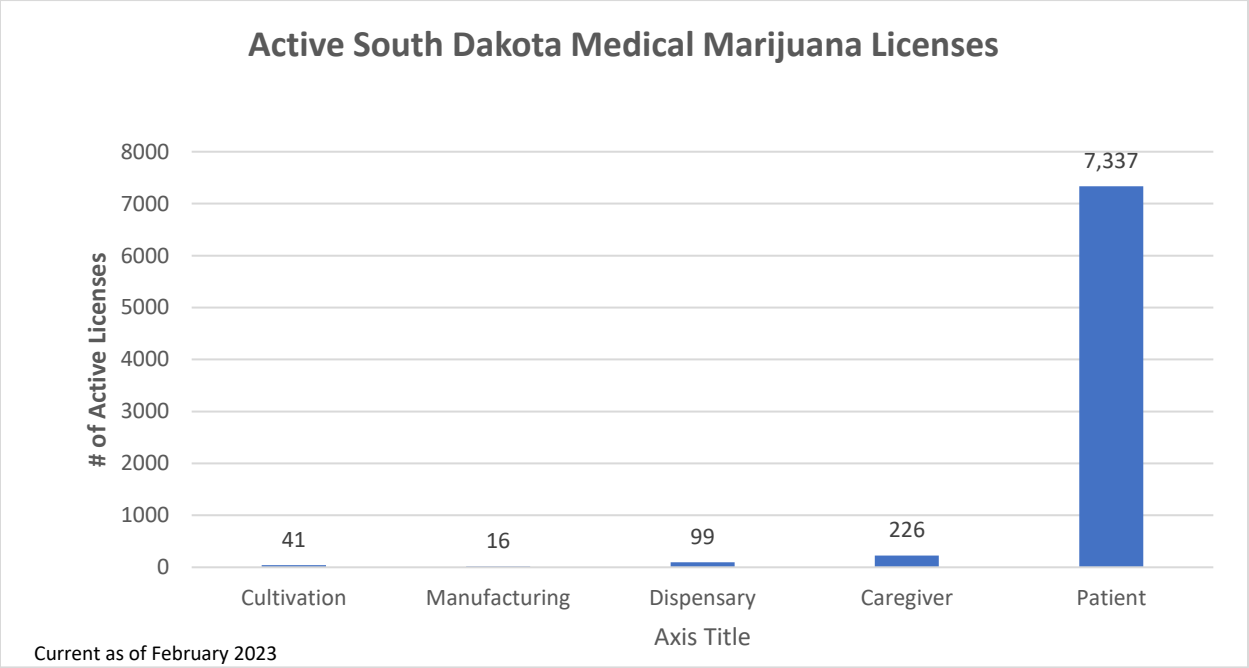
- The cultivation area must be surrounded by fencing and gates that are not less than six feet high; secure and undamaged; and concealed, or have a cover that conceals, regulated activities from being readily viewed outside the fenced-in area.

- Any cultivation license holder who uses a department-approved pesticide must hold a current pesticide applicator certification issued by the South Dakota Department of Agriculture and Natural Resources.

- A cultivation facility will not be allowed to use pesticides during cannabis cultivation unless it contains only the active ingredients approved by the department under 44:90:05:09 and is listed in the cultivation facility's operating procedures filed with the department. In these cases, the approved pesticide must be applied by an established agent with a current pesticide applicator license. The established agent must use the pesticide following the product label.

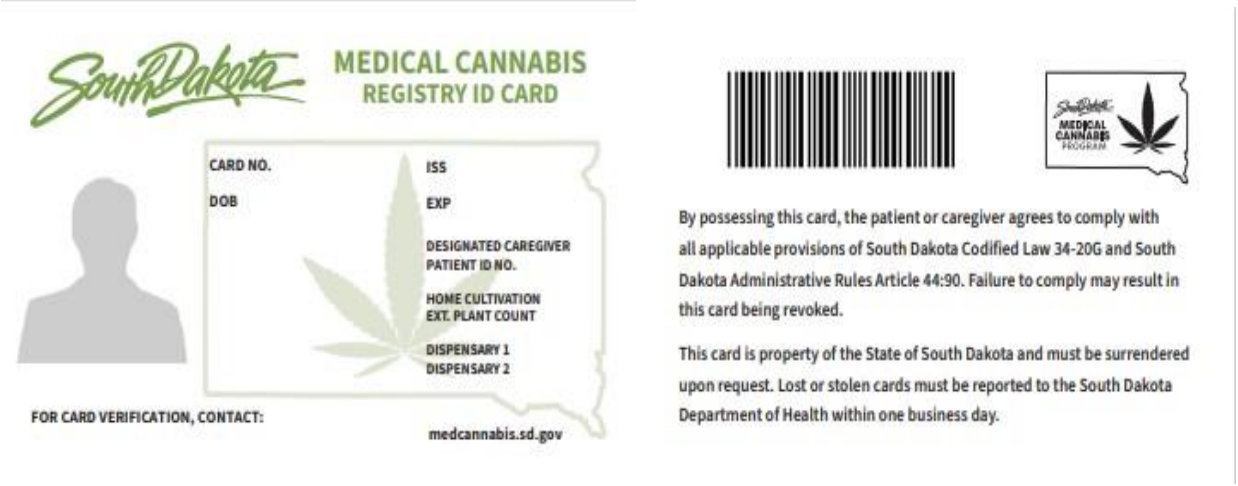
Furthermore, a cultivation facility must not be within 1000 feet of a public or private school that existed before the date of the medical cannabis establishment application.

Figure 37: Active South Dakota Medical Marijuana Licenses, by Type



Source: South Dakota Department of Health, Office of Medical Cannabis

Figure 38: South Dakota Medical Identification Card (Front & Back)



Traceability

The South Dakota Medical Cannabis Program utilizes the Marijuana Enforcement Tracking Reporting & Compliance (METRC) system for monitoring the state's seed-to-sale tracking requirements. Under the METRC system, companies will use the company's radio frequency identification (RFID) system to tag cannabis plants and products within the program. When marijuana is harvested, packaged and/or manufactured, the origin, testing results, handling and chain-of-custody information will be traceable using those RFID tags. State regulators as well as operators can use this information to ensure product safety. A medical cannabis establishment shall maintain, for a minimum of 18 months, the following records: all point of sale records, whether in electronic or paper form; transport manifests; and daily inventory records, transfer records, testing sample records, and transaction records.[98]

Potency

Currently the only restrictions on THC levels pertain to edibles. The total allowed THC milligrams per packaged multi-serving edible cannot exceed 100 milligrams and 10 milligram per individual piece; the only product allowed to have a higher THC content is tinctures, edibles oils, and beverages.[98]

Marijuana Product Packaging and Labeling

- Packaging General Requirements – All cannabis or cannabis products shall be packaged for transfer or sale in containers that: are fully enclosable; are tamper-proof; are resealable; protect the item from contamination; do not impart any toxic or deleterious substance the packaged item; and except for the bulk sale of flower or transfer thereof (shipping containers of flower are limited to ten pounds or less), are packaged in a child-resistant container that is ready for sale to the patient of designated caregiver.
- Labeling Required – Prior to transferring to a dispensary, a cultivation facility shall label the marketing layer of each container; prior to transferring cannabis products to a dispensary, a cannabis product manufacturing facility shall label the marketing layer of each container. Unless otherwise specified, all required information shall be printed directly on the marketing layer of the cannabis or cannabis product or printed on a sticker attached to the marketing layer of the cannabis or cannabis product.
- Format of Labeling – All required information must be printed clearly in English on the label in no smaller than six-point font; an establishment may affix an extendable accordion-style label, layered label, or multiple labels to the marketing layer if none of the required information is obstructed and the label can be easily identified by a patient or designated caregiver as containing important information.
- Labeling Claims – Results of testing: any testing mandated by the department must be included on the label of any cannabis product; the label must state the THC content, in milligrams of total THC and as a percentage of the product's weight; no label may contain claims regarding CBD content or the absence of microbials, metals, solvents, or pesticides except to list the results of analytical tests performed by a registered cannabis testing facility.[98]

Marijuana Product Advertising

No establishment may advertise:

- On a sign or billboard, except that a dispensary may advertise on its own premises;
- By distributing handbills in public areas or on publicly owned property;

- Through direct mail, phone, text, or email without verifying the recipient is a cardholder or medical cannabis establishment and offering permanent opt-out feature;
- On television or radio;
- Through a practitioner or health care facility, including placement of advertising material onsite or targeting their patients through direct mail, phone, text, or email.[98]

Regulation:

The Department of Health is responsible for regulating establishments, which include cultivation facilities, testing facilities, manufacturing facilities, and dispensaries. No limit on the number of establishments was included in the law; the department will work with any local ordinances that are passed regarding the number and location of establishments.

Taxation:

The state sales tax of 4.5% applies to each transaction. If cannabis products or services relating to medical cannabis are sold inside city limits, the general municipal tax of up to 2% also applies. Additionally, if cannabis is incorporated into prepared foods, such as cookies, cupcakes, or ready to drink beverages, then municipal gross receipts tax of 1% applies.

Conclusion

While the full consequences of marijuana legalization may take decades to emerge, many outcomes are already apparent. The data in this report document the many negative impacts of marijuana legalization on public health and safety, both in the Midwest HIDTA region and beyond. These impacts include, but are not limited to:

- Expanding illicit markets supplied by illegal growing operations and diversion.
- Crime rates may follow pre-legalization trends, but increases in various crimes have occurred following legalization.
- Increased use rates of marijuana following legalization.
- Increased rates of marijuana-related emergency department visits and hospitalizations following legalization.
- Increased rates of marijuana-related calls to state poison centers following legalization.
- Detrimental impacts to the environment, public lands, and various ecosystems because of both licit and illicit marijuana production.

As marijuana markets mature across the Midwest HIDTA region, the region will likely continue to see a decrease in the perception of harm from marijuana use among all age groups. The Midwest may experience a further increase in marijuana use, particularly among youth and non-medically qualifying candidates, because of the rise in marijuana's availability and social acceptance. This can contribute to unforeseen consequences, such as increases in marijuana use disorders and the use of other illicit drugs, decreased youth academic performance, and the exacerbation of marijuana-related mental health conditions.

The marijuana programs of the Midwest HIDTA region may be in their infancy, but the impacts of state-sanctioned marijuana usage are already known and well-documented by the early programs in Western states. The economic and social costs of legalization to state and local governments will potentially outweigh the revenue generated by the marijuana industry. Those living in the Midwest region should be aware of the variety of issues associated to legalization. Its costs, its impacts to public health and public safety. Of key importance, is the need for sharing evidence-based research to allow people and policy makers alike to make informed decisions when it comes to policy formation.

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