



NORTH CENTRAL HIGH INTENSITY
DRUG TRAFFICKING AREAS

Minnesota Baseline Marijuana Assessment



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INTRODUCTION

The purpose of this report is to examine data about the use of marijuana and its impact on the health and safety of people in Minnesota and their communities. The report provides a retrospective baseline analysis of marijuana use and its impact on health, crime, and public safety indicators.

It includes data from multiple government and non-government sources. Further research is required to better understand trends, behavioral changes, and outcomes. Every possible effort has been made to ensure this report lays a foundation on which future analysis and understanding of the use of marijuana and its impact on the state can be created.

EXECUTIVE SUMMARY

PAST AND PRESENT MARIJUANA USE IN MINNESOTA

- Marijuana use appears relatively infrequent among Minnesota students. The percentage of students in all age groups self-reporting never using marijuana is increasing.
- Perceived marijuana use among student peers is higher than self-reported marijuana use. Student perceptions of marijuana use are influenced by advertisements, marketing, and social media. Adolescents who like or follow marijuana-related marketing content on social media are five times more likely to have used marijuana over the past year compared to those who did not like or follow marijuana-related content.
- Marijuana use increases as students get older.
- Marijuana use among Minnesota adults is increasing. The percentage of adults estimated to have used marijuana in the past year increased from 13% in 2020 to 19% in 2022.
- Nearly 40% of Minnesotans between 18 and 25 report using marijuana in the past 12 months. Of those who have used marijuana in the past 12 months, 65% report consuming edibles. Many Minnesota adults began using marijuana during the COVID-19 pandemic.

MARIJUANA POTENCY

- Marijuana potency in Minnesota has been higher than the national average since 2014. Potency in Minnesota has increased by 39% since 2020. On average, the marijuana used in Minnesota continues to be more potent than marijuana used in the rest of the country.

IMPACTS OF MARIJUANA USE ON PUBLIC HEALTH, TRAFFIC SAFETY, THE WORKFORCE, AND SCHOOLS

- Cannabis-related calls to the Minnesota Poison Control System increased dramatically between 2018 and 2022 for all age groups. Intentional (abuse) cannabis-related calls represented the highest number of calls to Poison Control.
- Calls regarding edibles increased by more than 1,000% from 2018 to 2022. Edibles were the most frequently cited product type for calls involving people in the 0- to 5-year-old age group, increasing by 692%. Calls related to edibles involving people in the 6- to 19-year-old age group increased by 675%.
- Intentional use, or abuse, was the most common reason for calls to the Minnesota Poison Control System between 2018 and 2021. In 2022, unintentional use was most frequently cited.
- Between 2018 and 2022, calls for intentional (abuse) reasons, increased by 225% for people in the adult age group, which includes individuals 20 or older. From 2018 to 2022, calls related to the use of edibles increased by 1,718%.

- The number of treatment admissions for cannabis use has decreased 42% in recent years—from 8,174 in 2018 to 4,761 in 2022. Admissions for cannabis treatment as a percentage of total treatment admissions decreased from 13% to 8% during the same period. Of all the cannabis treatment admissions, the largest percentage of those seeking treatment is the 12- to 17-year-old age group. Further research is required to better understand trends, behavioral changes, and outcomes related to these data points.
- From 2018 to 2022, cannabis-related hospital visits decreased from 23,801 to 23,379, or 1.8%. While male patients have accounted for a greater proportion of cannabis-related hospital visits since 2018, the difference in the proportion of visits between male and female patients has grown smaller in recent years.
- From 2018 to 2022, Minnesotans aged 15 to 24 and 25 to 34 accounted for the greatest number of cannabis-related hospital visits each year.
- Between 2018 and 2022, the number of positive THC blood and urine screens obtained from motorists increased and cannabis-related DWI charges increased.
- Between 2018 and 2020, fatal crashes involving cannabis more than doubled.
- The number of fatal motor vehicle crashes in the state increased by 19.7% between 2018 and 2022, from 349 to 418. Driver fatalities during that period increased 25%, from 265 to 332, while passenger, pedestrian, and bicyclist fatalities remained stable.
- The number of Minnesotans reporting using cannabis at work increased 16% between 2018 and 2021.

MARIJUANA CRIMES AND THE JUVENILE JUSTICE SYSTEM

- Between 2018 and 2022, the number of youth charged with unlawfully selling marijuana decreased 53.8%. The number of youth charged with possession of more than 1.4 grams of marijuana in a motor vehicle decreased 43.8%. Further research is required to better understand trends, behavioral changes, and outcomes related to these data points.
- The number of youth charged with unlawfully possessing one or more mixtures containing a controlled substance classified in Schedule I, II, III, IV, except a small amount of marijuana, increased 2%.
- The number of youth charged with unlawful possession of a controlled substance increased between 2018 and 2022.
- Students in correctional facilities self-reported more frequent marijuana use than the general student population.

MARIJUANA'S INFLUENCE ON THE OPIOID EPIDEMIC

- Between 2018 and 2022, the number of opioid prescriptions in Minnesota decreased 22%.
- Opioid-involved overdose deaths increased by 198% between 2018 and 2022.
- Cannabis use increased by nearly 27% between 2018 and 2022.

THE ILLICIT MARKET FOR MARIJUANA

- The number of drug trafficking organizations identified by North Central HIDTA Minnesota as trafficking marijuana and/or THC has remained relatively stable, from nine in 2018 to seven in 2022.
- The number of THC products seized by Minnesota law enforcement increased between 2018 and 2022 while the number of marijuana products seized decreased.

BACKGROUND AND SCOPE OF REPORT

In May 2023, Minnesota became the 23rd state to legalize marijuana for adult use within the parameters of the law. The first recreational marijuana dispensary opened in August 2023 on the Red Lake Nation in north central Minnesota. Other dispensaries outside of tribal nations are expected to open across the state in early 2025.

Some forms of marijuana use were previously legalized in Minnesota. Medical cannabis was legalized in 2014, and in 2022 the Minnesota Legislature made it legal for people 21 years or older to purchase and possess products that contain THC derived from hemp.

The North Central High Intensity Drug Trafficking Areas (NC HIDTA) Minnesota Investigative Support Center (ISC) created this document in accordance with Minnesota Statute 277.29 Sec. 72, which requires the commissioner of the Minnesota Department of Public Safety to produce a statewide baseline high intensity drug trafficking area report on marijuana. The report is required to focus on six topic areas:

- Past and present marijuana use in Minnesota
- Marijuana potency
- Impacts of marijuana use on public health, traffic safety, the workforce, and schools
- Marijuana crimes and the juvenile justice system
- Marijuana's influence on the opioid epidemic
- The illicit market for marijuana

The report is required to be submitted to the chairs and ranking minority members of the Minnesota House of Representatives and Senate committees with jurisdiction over public safety, health, education policy, labor, and transportation.

The North Central HIDTA Minnesota ISC assessed marijuana-related trends in Minnesota to establish this baseline report. The purpose of this report is to examine data about marijuana use and its effects on the health and safety of people and communities in Minnesota.

METHODOLOGY

North Central HIDTA Minnesota ISC analysts used both quantitative and qualitative research to collect information on marijuana trends in Minnesota for this report.

Most data were collected between Aug. 1, 2023, and Dec. 5, 2023. Collection efforts focused on data from 2018 to 2022. Sources include reporting from local, state, tribal, and federal law enforcement, as well as other government agencies, such as in the public health community throughout Minnesota.

Data were also sourced from the North Central HIDTA performance management process system and a variety of national, state, and local databases.

It is recognized that some of these information sources may be incomplete, and some reporting is delayed. However, the baseline assessment was prepared with the highest degree of confidence and accuracy based on the information available. Additional, verified, or more current reporting could alter the assessments or confidence levels stated in this document.

HIDTA AND THE NORTH CENTRAL HIDTA MINNESOTA INVESTIGATIVE SUPPORT CENTER

The High Intensity Drug Trafficking Areas (HIDTA) program was created by Congress in 1988 to reduce drug trafficking and drug production in the United States. The program is administered by the Office of National Drug Control Policy, which coordinates and assists federal, state, local, and tribal law enforcement agencies to address regional drug threats.

There are 33 HIDTAs in the country. All meet the following criteria:

- The area is a significant center of illegal drug production, manufacturing, importation, or distribution
- State, local, and tribal law enforcement agencies have committed resources to combat drug trafficking in the area, thereby indicating a determination to respond aggressively to the problem
- Drug-related activities have a significant harmful impact in the area and in other parts of the country
- A significant increase in allocation of federal resources is necessary to respond adequately to drug related activities in the area.

The North Central HIDTA ISC Minnesota serves Anoka, Dakota, Hennepin, Olmsted, Ramsey, Saint Louis, and Washington counties in Minnesota.

MINNESOTA MARIJUANA LEGISLATION

In May 2014, legislation legalizing medical cannabis possession and use was signed into law. [i]

- In July 2015, the first medical cannabis dispensaries opened in the state [ii]
- From March 2017 to January 2023, the number of active patients in the Medical Cannabis Program grew from 5,000 to 40,000 [iii]
- As of April 2023, 15 Minnesota cities had medical cannabis dispensaries [iv]

In July 2022, the legislature changed Minnesota Statute 151.72 to allow consumers 21 or older to “purchase products that contain THC derived from hemp.” [v] This law specifies:

- Edibles can contain up to 5 mg of hemp-derived tetrahydrocannabinol (THC) per serving and a maximum of 50 mg per package [vi]
- Beverages can contain up to 5 mg of hemp-derived THC per serving and no more than 10 mg per container [vii]
- THC products that are edible or externally applied to the body can contain no more than 0.3 percent THC (dry weight) [viii]

In May 2023, recreational cannabis was legalized after HF100 passed in the House, SF73 passed in the Senate, and Gov. Tim Walz signed it into law. [ix]

In August 2023, cannabis was legalized [x], allowing people 21 or older to:

- Use, possess, or transport cannabis paraphernalia
- Possess or transport up to 2 ounces of cannabis flower in public places
- Possess up to 2 pounds of cannabis flower in a private residence
- Possess or transport up to 8 grams of adult-use concentrate
- Possess or transport edible cannabis products or lower-potency hemp edibles infused with a combined 800 mg or less of THC
- Give away cannabis flower and products to a person 21 or older in an amount legal for public possession
- Grow up to eight cannabis plants, with no more than four being mature flowering plants, at a single primary residence of someone 21 or older as long as the plants are in an enclosed, locked space that is not open for public view [xi]

On Aug. 1, 2023, the first recreational marijuana dispensary opened on the Red Lake Reservation after the Red Lake Nation passed its own recreational marijuana law as a sovereign nation. The first retail dispensary sales outside of tribal nations are expected to begin in the first quarter of 2025. [xii] These cannabis product sales will incur a 10% tax, in addition to standard state and local taxes. [xiii]

Currently, it is illegal to use cannabis:

- While operating a motor vehicle or heavy machinery
- In public or charter schools
- On school buses
- In state correctional facilities
- In a location where the smoke, aerosol, or vapor could be inhaled by a minor
- On federal property
- In federally subsidized housing
- While on an employer's premises
- While operating an employer's vehicle, machinery, or equipment

On March 1, 2025, state law will prohibit the smoking or vaping of cannabis in multifamily housing, including on patios and balconies. [xiv]

PAST AND PRESENT MARIJUANA USE IN MN

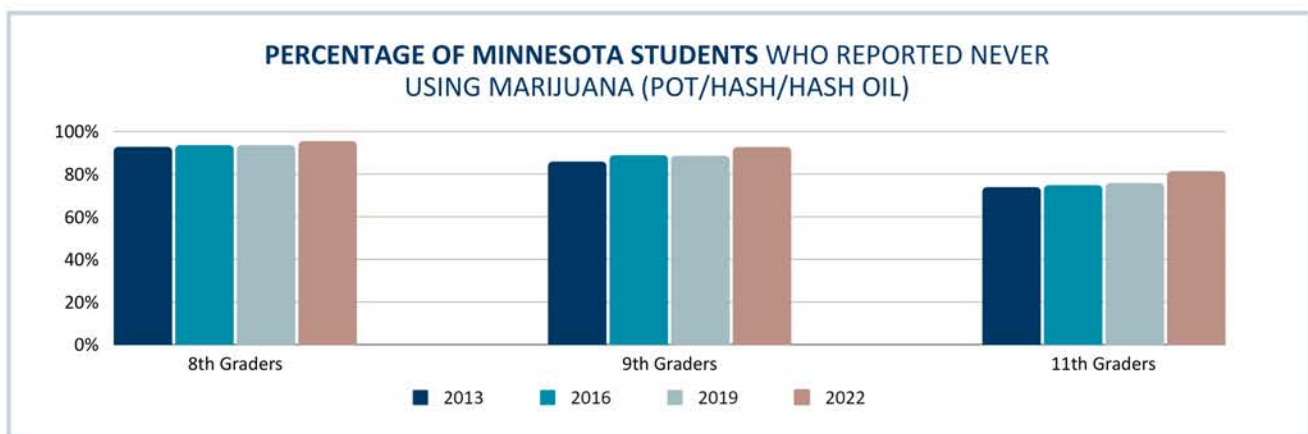
The landscape of marijuana use among Minnesota youth and adults is dynamic, shaped by evolving societal attitudes, social media and marketing, legal changes, and ongoing discussions regarding marijuana's potential benefits and risks.

The following is an overview of past and present marijuana use in Minnesota among youth and adults.

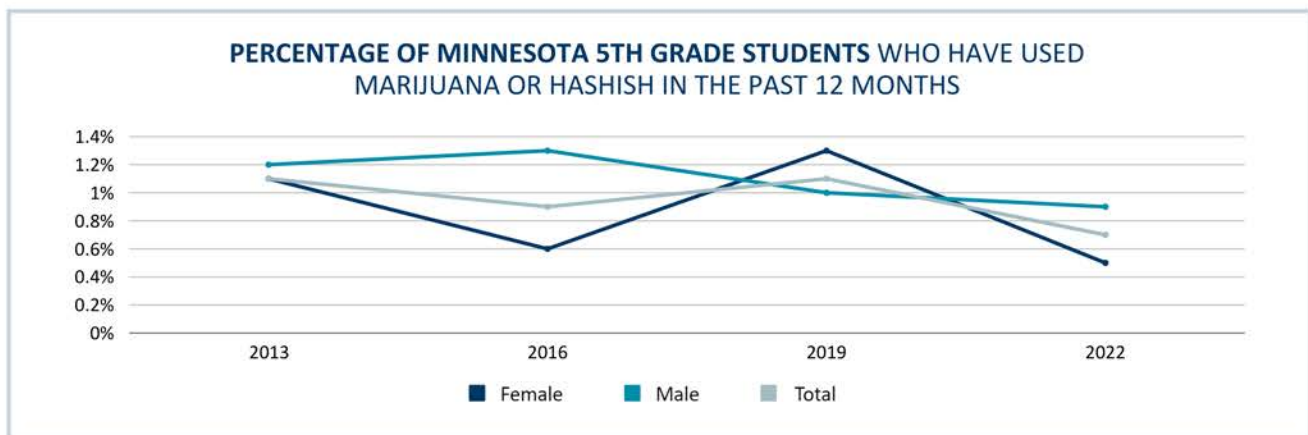
YOUTH MARIJUANA USE

According to the Minnesota Department of Education Minnesota Student Survey, marijuana use is relatively infrequent among Minnesota students [xv]:

- The percentage of students in all age groups self-reporting never using marijuana is increasing
- The percentage of students in all age groups self-reporting using marijuana is decreasing
- The percentage of eighth-, ninth- and 11th-grade students self-reporting never having used marijuana is increasing (Figure 1)
- Marijuana use increases as students get older



[Figure 1] Source: Minnesota Department of Education Student Survey



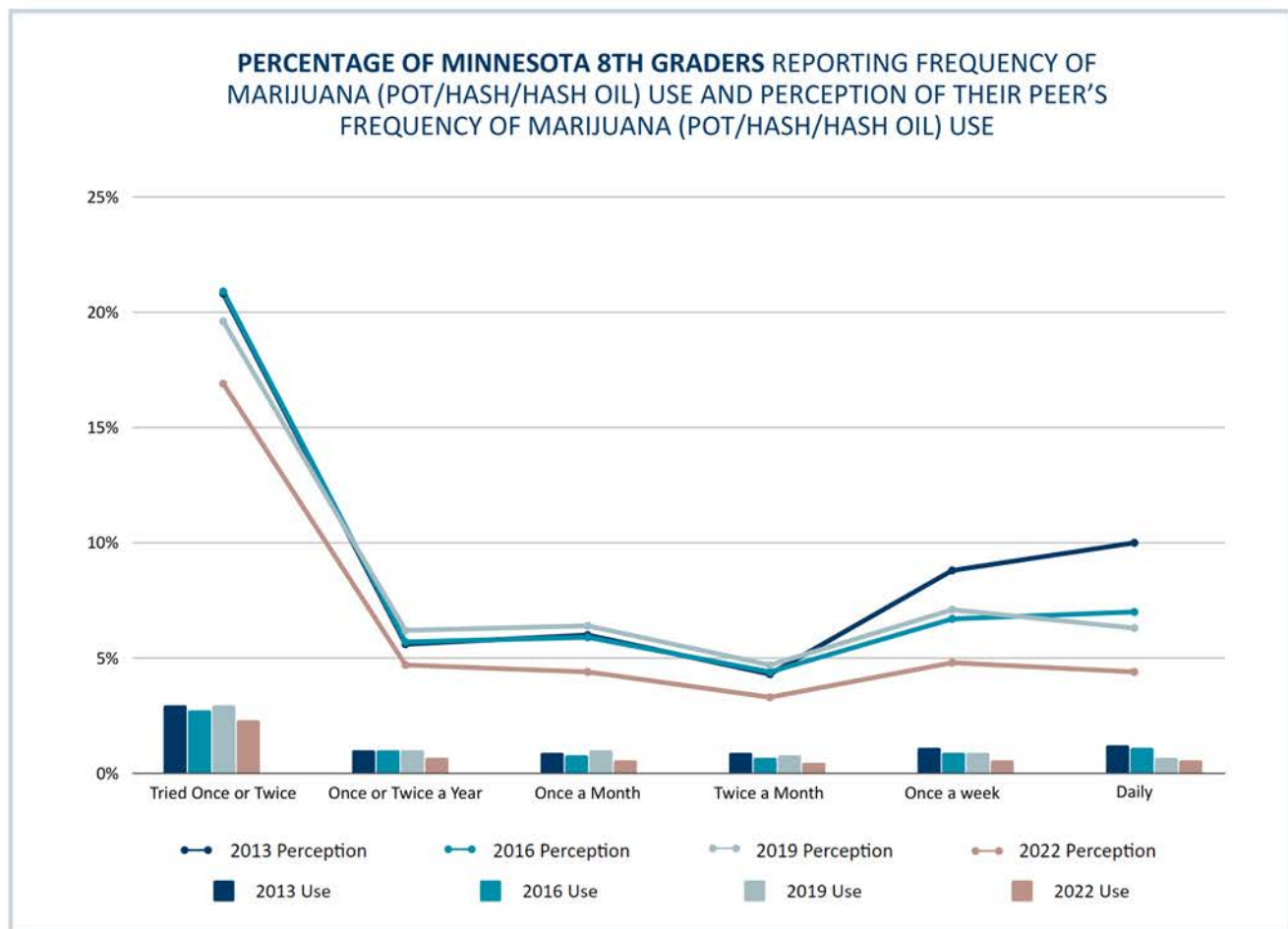
[Figure 2; figure included for additional context] Source: Minnesota Department of Education Student Survey

PERCEPTION OF MARIJUANA USE AMONG YOUTH

According to the Minnesota Department of Education Minnesota Student Survey, perceived marijuana use among student peers is higher than self-reported marijuana use (Figures 3, 4, 5, and 6). Several studies provide possible insight into why perceptions of marijuana use among youth differ from self-reported data.

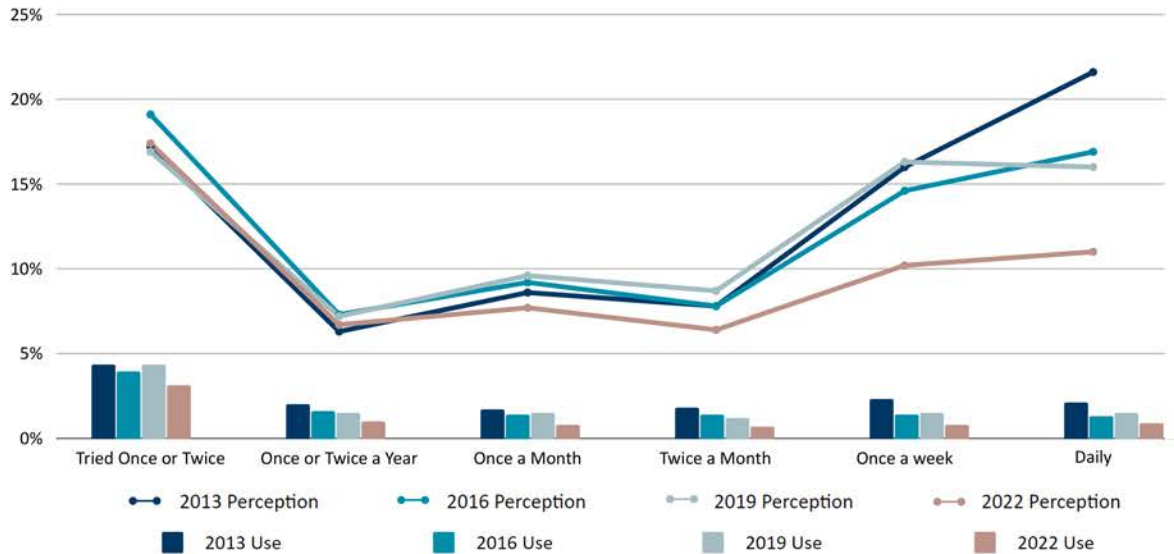
A study published by the National Library of Medicine cites social media as a factor in adolescent and youth perceptions of marijuana [xvi]:

- Students are influenced by advertisements and promotions for marijuana products, especially when such marketing materials are liked or shared by peers on social media [xvii]
- Adolescents who like or follow marijuana-related marketing content on social media are five times more likely to have used marijuana over the past year compared to those who did not like or follow marijuana-related content [xviii]
- One-third of youth residing in states where recreational marijuana is legal engaged with marijuana brands on social media [xix]



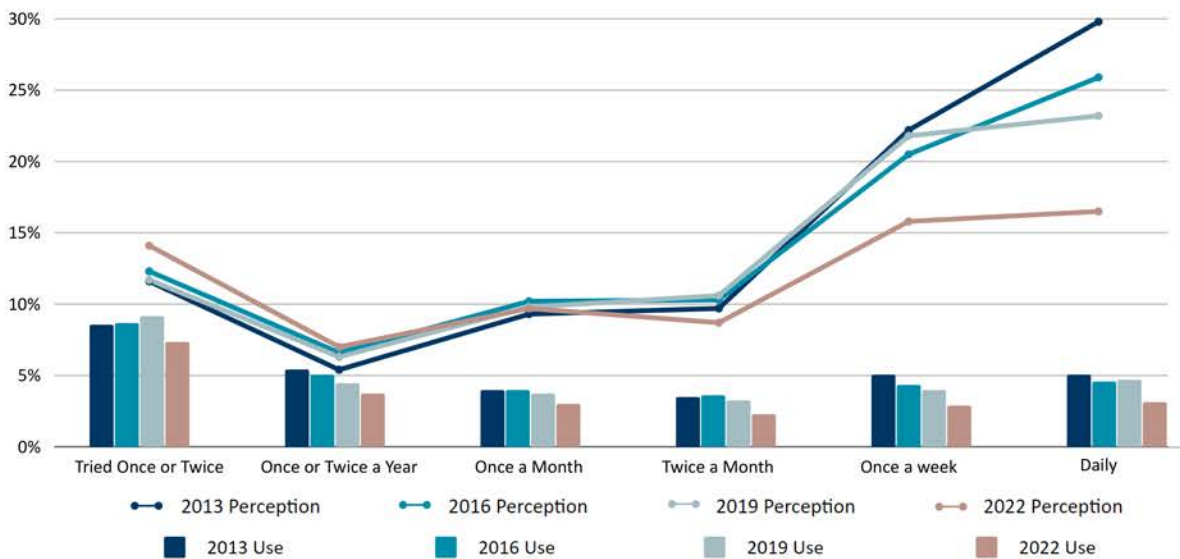
[Figure 3] Source: Minnesota Department of Education Student Survey

PERCENTAGE OF MINNESOTA 9TH GRADERS REPORTING FREQUENCY OF MARIJUANA (POT/HASH/HASH OIL) USE AND PERCEPTION OF THEIR PEER'S FREQUENCY OF MARIJUANA (POT/HASH/HASH OIL) USE



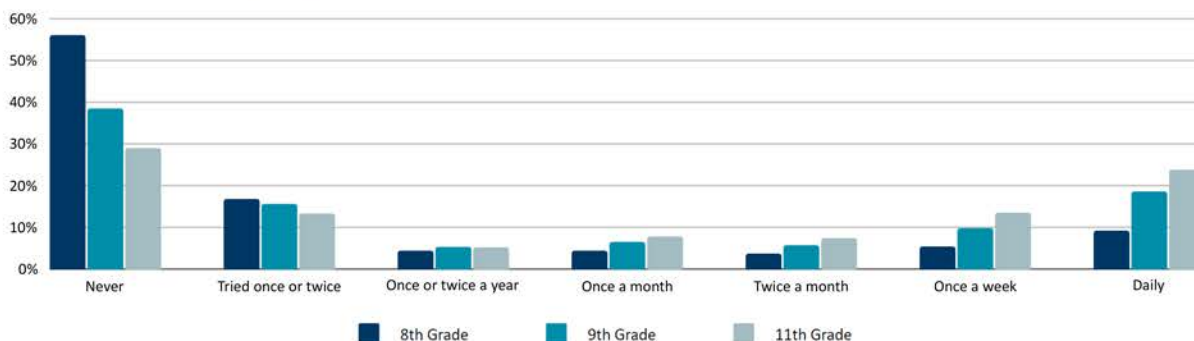
[Figure 4] Source: Minnesota Department of Education Student Survey

PERCENTAGE OF MINNESOTA 11TH GRADERS REPORTING FREQUENCY OF MARIJUANA (POT/HASH/HASH OIL) USE AND PERCEPTION OF THEIR PEER'S FREQUENCY OF MARIJUANA (POT/HASH/HASH OIL) USE



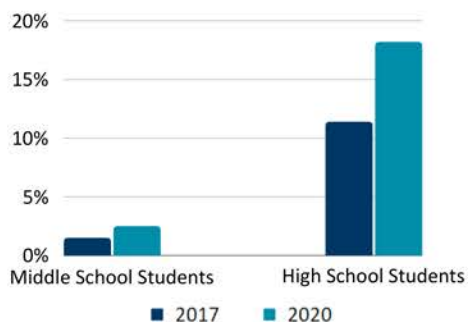
[Figure 5] Source: Minnesota Department of Education Student Survey

PERCEIVED USE OF VAPING AND E-CIGARETTES CONTAINING MARIJUANA, THC, HASH, OIL, OR THC WAX AMONG MINNESOTA STUDENTS' PEERS IN 2022

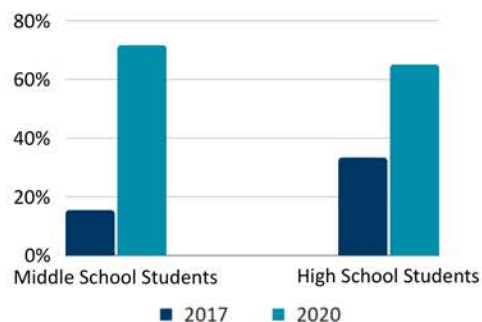


[Figure 6] Source: Minnesota Department of Education Student Survey

PERCENTAGE OF MINNESOTA STUDENTS WHO HAVE USED AN E-CIGARETTE DEVICE TO VAPE MARIJUANA/THC

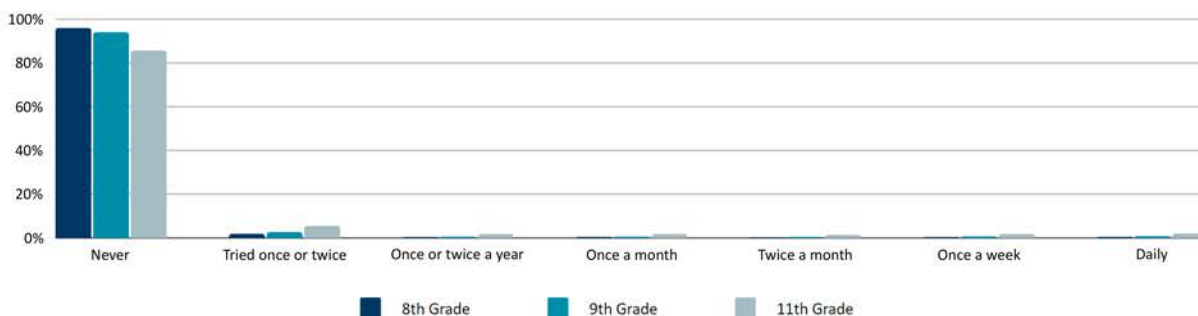


PERCENT OF CURRENT E-CIGARETTE USERS WHO HAVE EVER USED AN E-CIGARETTE TO VAPE MARIJUANA/THC



[Figure 7; left and Figure 8; right included for additional context] Source: Minnesota Department of Health Youth Tobacco Survey [xx] [xxi]

USE OF VAPING DEVICE AND E-CIGARETTES CONTAINING MARIJUANA, THC, HASH, OIL, OR THC WAX AMONG MINNESOTA STUDENTS IN 2022



[Figure 9] Source: Minnesota Department of Education Student Survey

ADULT MARIJUANA USE

Marijuana use among adults in Minnesota is increasing (Figures 10 and 11), according to the Substance Abuse and Mental Health Services Administration (SAMHSA) National Survey on Drug Use and Health (NSDUH).

The survey data are used to estimate and evaluate substance trends over time as well as identify the extent of substance use at both the national and state levels. [xxii]

In 2021, the NSDUH estimated that:

- 19% of Minnesota adults used marijuana in the past year, an increase of approximately 13% from 2020 estimates [xxiii]
- Marijuana use over the past 12 months increased among Minnesotans between the ages of 18 and 25
- 39% of Minnesotans in that age group reported using marijuana in the past 12 months
- Approximately 28.5% of Minnesotans between 18 and 25 have used marijuana in the past month [xxiv]

It is important to note that further research is required to better understand trends, behavioral changes, and outcomes related to marijuana use in Minnesota.

The NSDUH's 2021 estimates of adult marijuana use in the previous 12 months are lower than those reported by the International Cannabis Policy Study Minnesota 2021 Cannabis Report, which indicated 30% of Minnesotans between 16 and 65 reported marijuana use within the past 12 months. This discrepancy could be a result of various data sourcing methods, such as differences in the age range of the sample population, sample size, and sourcing methods.

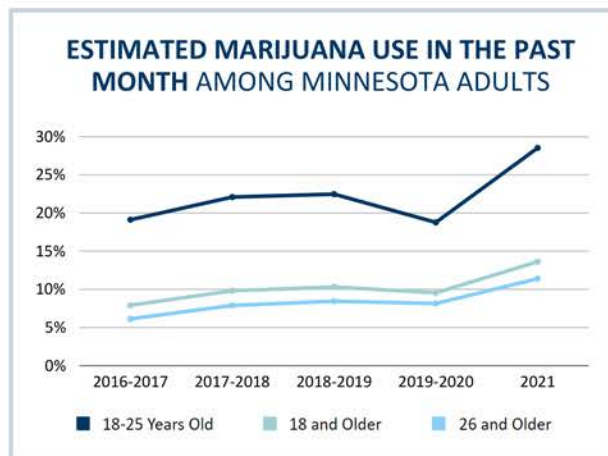
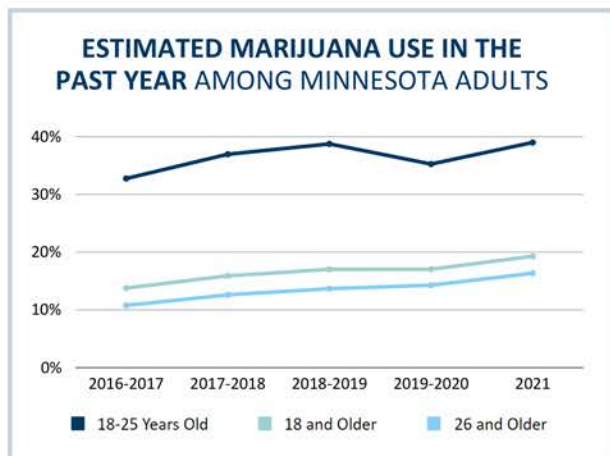
The International Cannabis Policy Study Minnesota 2022 Cannabis Report also includes information about marijuana use among adults. The study found that 33% of Minnesotans between the ages of 16 and 65 reported using cannabis in the past 12 months, [xxv] which represents a nearly 27% increase over the percentage of Minnesotans who reported using marijuana in the past 12 months in 2018, 2019, and 2020. [xxvi] Of those who reported using cannabis in the past 12 months in 2021 and 2022, 3% said they were at a high risk for problematic cannabis use, which is down from 7% between 2018 to 2020. [xxvii]

The COVID-19 pandemic appears to be an underlying factor potentially affecting the reported increase in cannabis use:

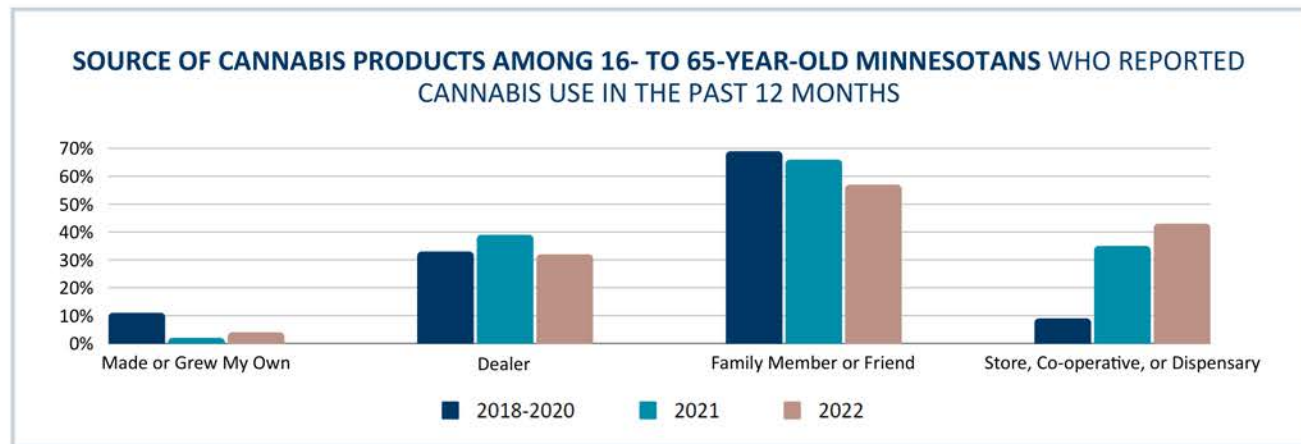
- 20% of Minnesota survey participants reported using more cannabis, or starting to use cannabis, during the pandemic
- The most common source of cannabis among Minnesotans was from a family member or friend (Figure 12) [xxviii]
- Sourcing of cannabis from family or friends decreased by nearly 14% from 2021 to 2022
- Sourcing cannabis from a dealer decreased by nearly 18% in 2022
- Sourcing from a store, cooperative, or dispensary increased by nearly 23% in 2022 [xxix]

The International Cannabis Policy Study Minnesota 2022 Cannabis Report found that dried herbs, edibles, and vape oils were the most common types of cannabis products consumed among Minnesotans who have used in the past 12 months (Figure 13). [xxx]

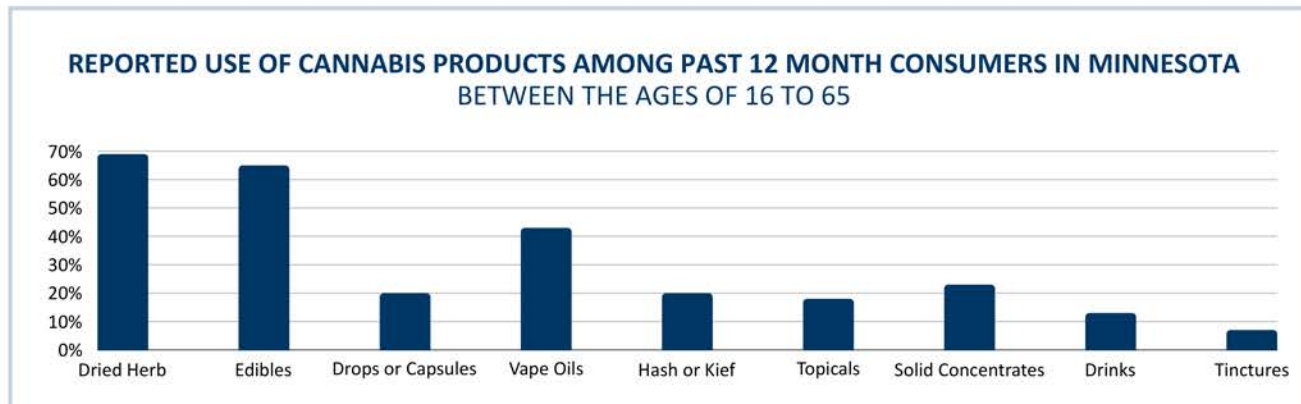
Of the Minnesotans who reported using cannabis products in the last 12 months, 65% reported consuming edibles. The nationally reported rate of edible use was 58%. [xxxi] Edibles were the only type of cannabis product with a reported use rate in Minnesota larger than the nationally reported use rate among past 12-month consumers. [xxxii]



[Figure 10; left, and Figure 11; right] Source: Substance Abuse and Mental Health Services Administration National Survey on Drug Use and Health [xxxiii] [xxxiv]



[Figure 12] Source: International Cannabis Policy Study Minnesota 2022 Cannabis Report [xxxv]



[Figure 13] Source: International Cannabis Policy Study Minnesota 2022 Cannabis Report [xxxvi]

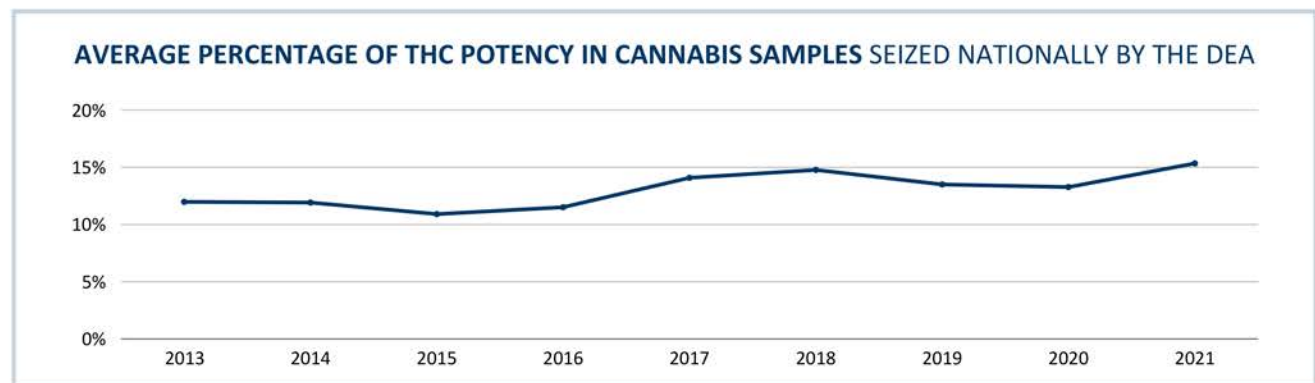
MARIJUANA POTENCY

Delta-9 THC is commonly cited as the primary ingredient and psychoactive compound in cannabis. [xxxvii], [xxxviii] THC potency can vary, impacting the degree of its psychoactive effects on people. [xxxix]

The following is an overview of changes in average cannabis potency, both nationally and in Minnesota, of samples collected, analyzed, and reported by researchers and government agencies.

POTENCY OF CANNABIS SAMPLES COLLECTED NATIONALLY

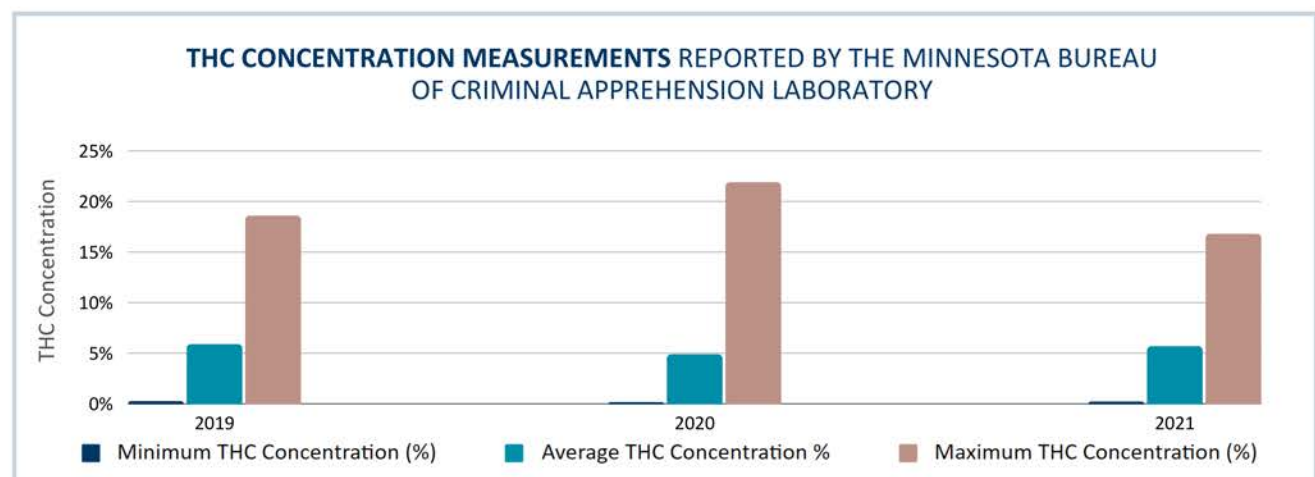
The National Center for Natural Products Research, based at the University of Mississippi School of Pharmacy, conducts THC potency analysis through its Potency Monitoring Program. Its research found that THC potency within cannabis samples collected nationally by the Drug Enforcement Administration (DEA) increased between 2013 and 2021, [xl] including a nearly 16% increase from 2020 to 2021, when the average potency of samples rose from 13.27% to 15.34% (Figure 14).



[Figure 14] Source: Potency Monitoring Program, National Center for Natural Products Research at the University of Mississippi School of Pharmacy

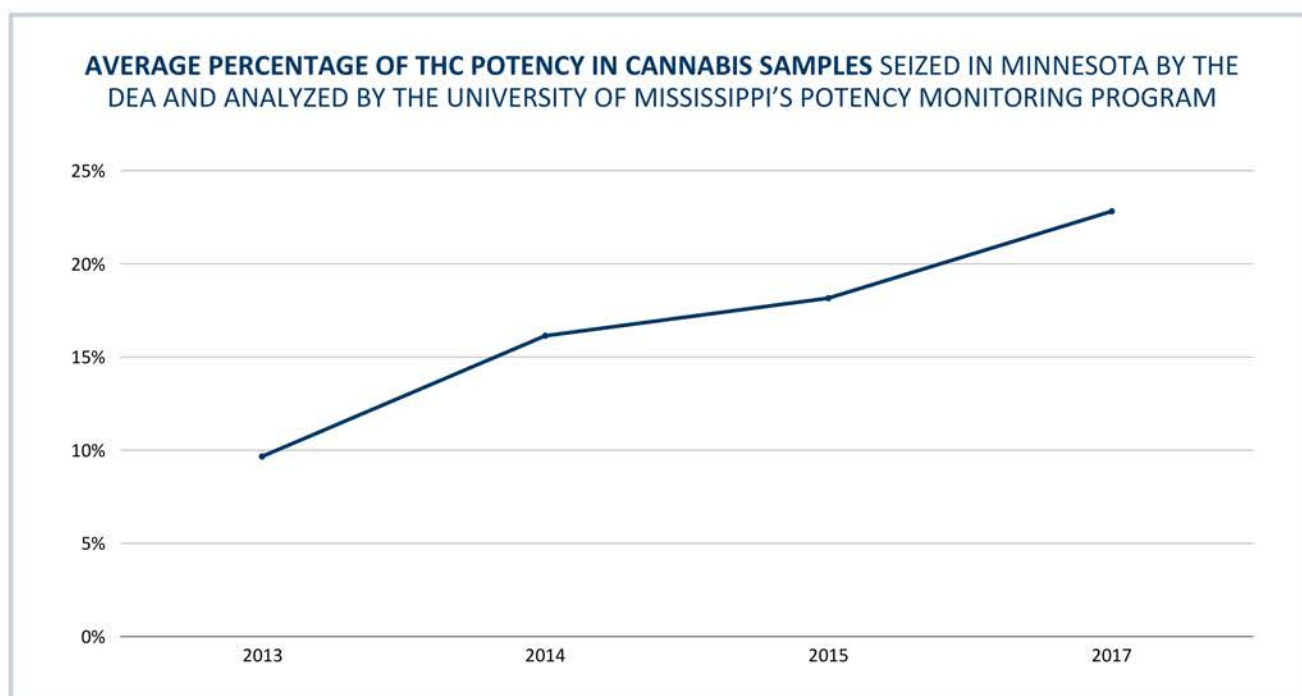
POTENCY OF CANNABIS SAMPLES COLLECTED IN MINNESOTA

The Minnesota Bureau of Criminal Apprehension found that the average THC (Delta 9-tetrahydrocannabinol) concentration of plant materials decreased from 5.9% in 2019 to 5.7% in 2021 (Figure 15).



[Figure 15] Source: Minnesota Bureau of Criminal Apprehension

The Potency Monitoring Program found that the average THC potency of cannabis samples seized in Minnesota by the DEA increased from 9.66% in 2013 to 22.82% in 2017. [xli]



[Figure 16] Source: Potency Monitoring Program, National Center for Natural Products Research at the University of Mississippi School of Pharmacy

Potency Monitoring Program data show cannabis samples seized by the DEA in Minnesota between 2014 and 2017 had average THC potencies greater than the national average (Figure 16):

- In 2014, the national average was 11.92% versus 16.14% in Minnesota
- In 2015, the national average was 10.91% versus 18.16% in Minnesota
- In 2016, no samples were tested in Minnesota
- In 2017, the national average was 14.08% versus 22.82% in Minnesota

According to the Midwest Regional Forensic Laboratory, which began conducting THC concentration analysis of samples collected in Minnesota in June 2020 [xlii]:

- The average THC potency of samples analyzed between June 2020 and December 2020 was 5.34%
- The average THC potency of samples analyzed between June 2020 and the end of 2022 increased by more than 39%

It is important to note that the 2023 data set is incomplete as only samples collected between January and mid-September 2023 were analyzed, (the average potency of those samples was 3.78%). Additionally, the Midwest Regional Forensic Laboratory did not record THC concentrations greater than 10%, so the data do not reflect the actual THC concentration levels of samples with higher potency levels collected in 2020, 2021, and 2022. There were no reported samples in 2023 with a THC concentration greater than 10%. [xliii]

IMPACTS OF MARIJUANA USAGE ON PUBLIC HEALTH, TRAFFIC SAFETY, THE WORKFORCE, AND SCHOOLS

Marijuana usage affects Minnesota communities across a broad spectrum of functions, including in the health care system, on the roads, in the criminal justice system, at places of employment, and in the classroom.

The following is an overview of the impacts of marijuana use on public health, traffic safety, the workforce, and in schools.

IMPACTS OF MARIJUANA ON PUBLIC HEALTH

More than 48 million people use marijuana in the United States, making it the most commonly used federally illegal drug, according to the Centers for Disease Control and Prevention. [xlv]

The following is an overview of the impacts of marijuana use on public health in Minnesota.

CANNABIS-RELATED POISON CONTROL SYSTEM CALLS

The Minnesota Poison Control System is housed within Hennepin Healthcare and provides poison control services to the entire state of Minnesota, including access to poison specialists 24-hours a day, seven days a week through a Poison Control Center hotline. People who call the hotline can receive immediate support and advice if they are in distress, as well as assistance with:

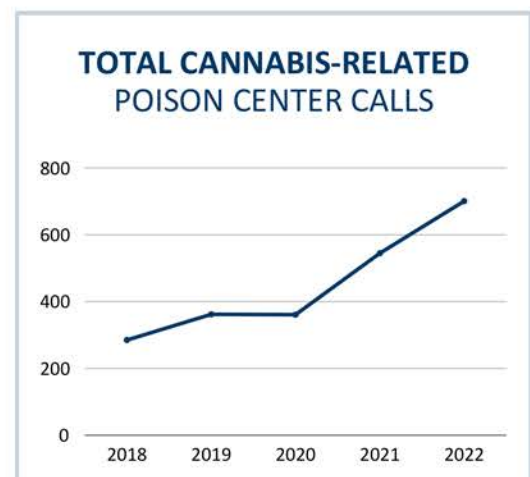
- Medication questions or mistakes, drug interactions, or adverse reactions
- Swallowing something that should not have been swallowed
- Inhaling a gas or fumes
- Eye or skin exposures to substances
- Food poisoning
- Venomous bites and stings

Reporting to the Poison Center is voluntary. As such, data presented here is likely an under-representation and the incidence of cannabis exposure or poisoning is almost always higher in the community. [xlv]

Since 2018, the center has received 234,168 calls, including:

- 44,901 in 2018 [xlvi]
- 46,283 in 2019 [xlvii]
- 44,990 in 2020 [xlviii]
- 44,319 in 2021 [xlix]
- 53,675 in 2022 [l], the last year for which data are available

During this period, cannabis-related calls increased by 146% (Figure 17).



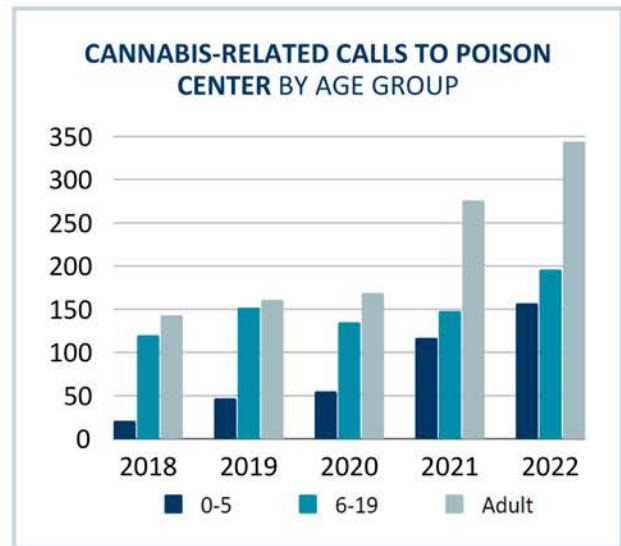
[Figure 17] Source: Minnesota Poison Control System

The following is a summary of calls to the Poison Control Center hotline between 2018 and 2022.

Cannabis-Related Calls by Age

Adults had the highest number of cannabis-related calls in each of the years examined, followed by the 6- to 19-year-old age group. All age groups saw an increase in calls (Figure 18):

- Calls involving people in the 0- to 5-year-old age group increased 648%
- Calls involving people in the adults age group increased 141%
- Calls from people in the 6- to 19-year-old age group increased 63%



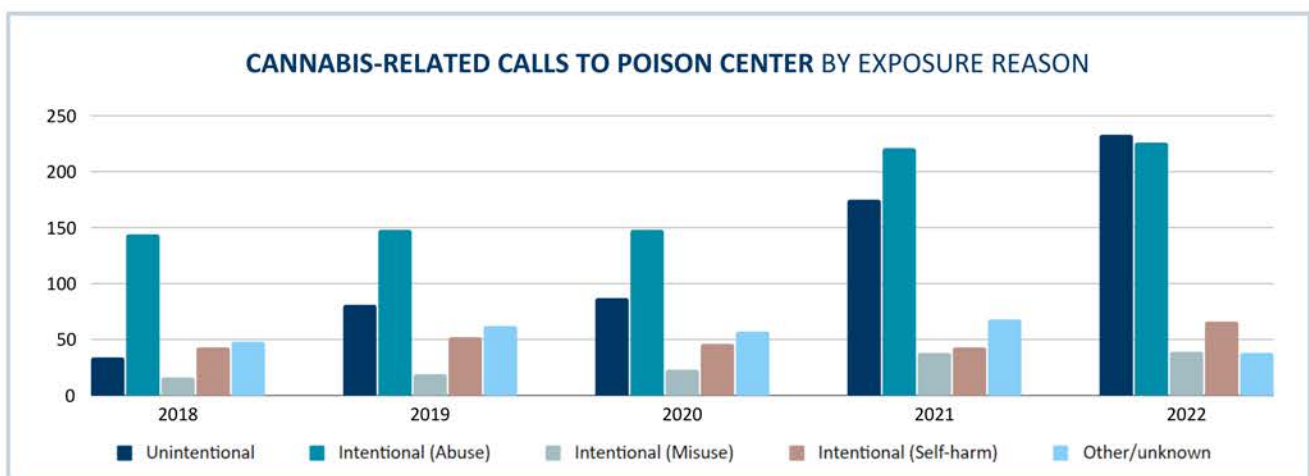
[Figure 18] Source: Minnesota Poison Control System

Cannabis-Related Calls by Exposure Reason

The Minnesota Poison Control System categorizes cannabis-related calls by the exposure reason into five sub-categories:

- **Unintentional:** the person did not intend to contact cannabis
- **Intentional (abuse):** the person intended to use cannabis recreationally (to get high)
- **Intentional (misuse):** the person intended to use cannabis but did so improperly or incorrectly
- **Intentional (self-harm):** the person intended to use cannabis to harm themselves
- **Other/Unknown:** the reason the person used cannabis is unknown

Intentional (abuse) cannabis-related calls represented the highest number of calls to the Poison Control Center hotline from 2018 to 2021. Calls for unintentional reasons increased by 585% between 2018 and 2022, becoming the most common reason for cannabis-related calls to the Poison Control Center hotline in 2022 (Figure 19).



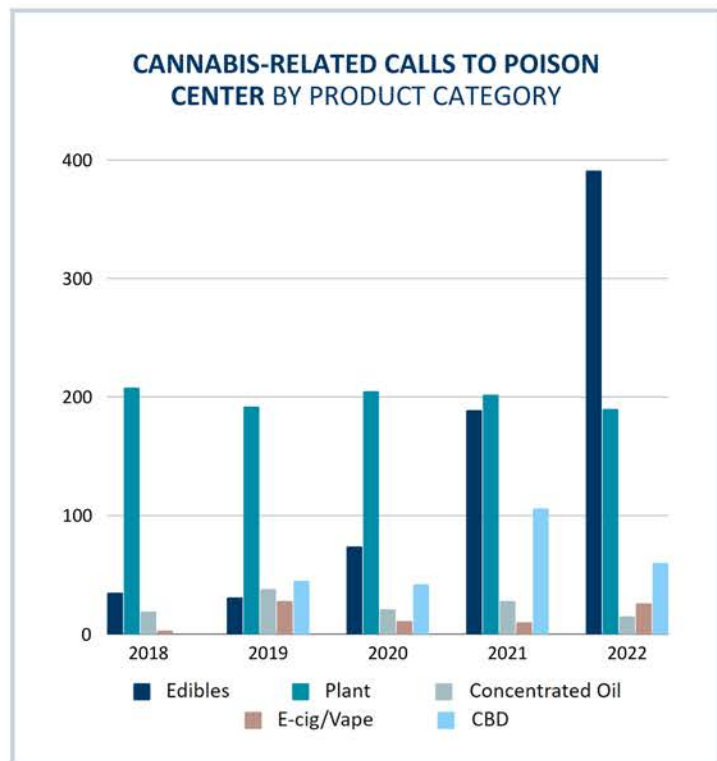
[Figure 19] Source: Minnesota Poison Control System

Cannabis-Related Calls by Product Type

The Minnesota Poison Control System categorizes calls by the product type into five sub-categories, including those most commonly reported:

- CBD
- Concentrated oil
- Vape/e-cig
- Edibles
- Plant material

Between 2018 and 2021, calls related to cannabis plant material, which includes dried or undried marijuana plants, represented the highest number of calls by product type. That changed in 2022, when edibles became the most common cannabis-related product call category after increasing by 1,017%, versus a 9% decrease for the plant material cannabis-related calls between 2018 and 2022 (Figure 20).



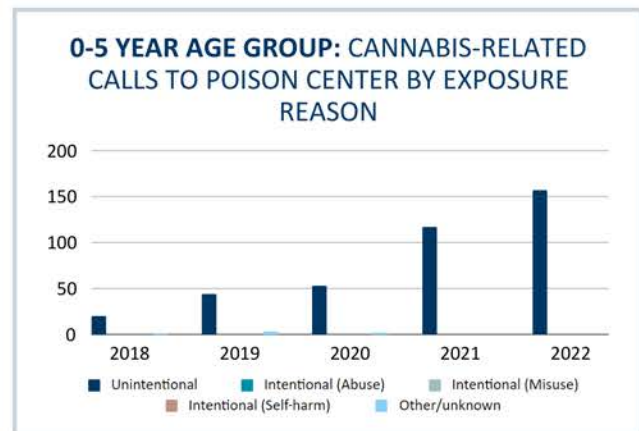
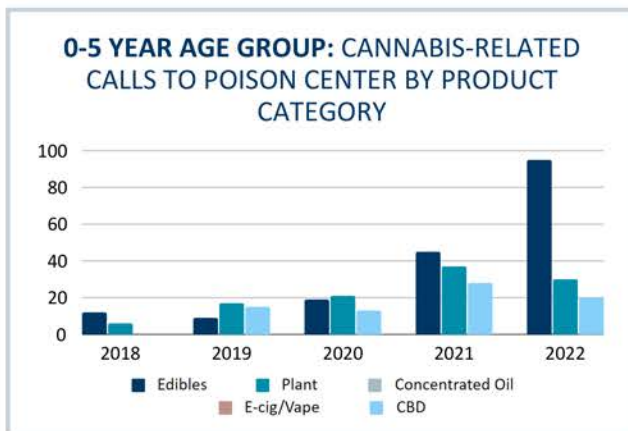
[Figure 20] Source: Minnesota Poison Control System

Cannabis-related Calls by Age Group, Exposure Reason, and Product Type

From 2018 to 2021, plant materials constituted the most frequently listed reason people called the Poison Control Center hotline. In 2022, edibles became the most frequently listed product type for all age groups.

0-5 Age Group

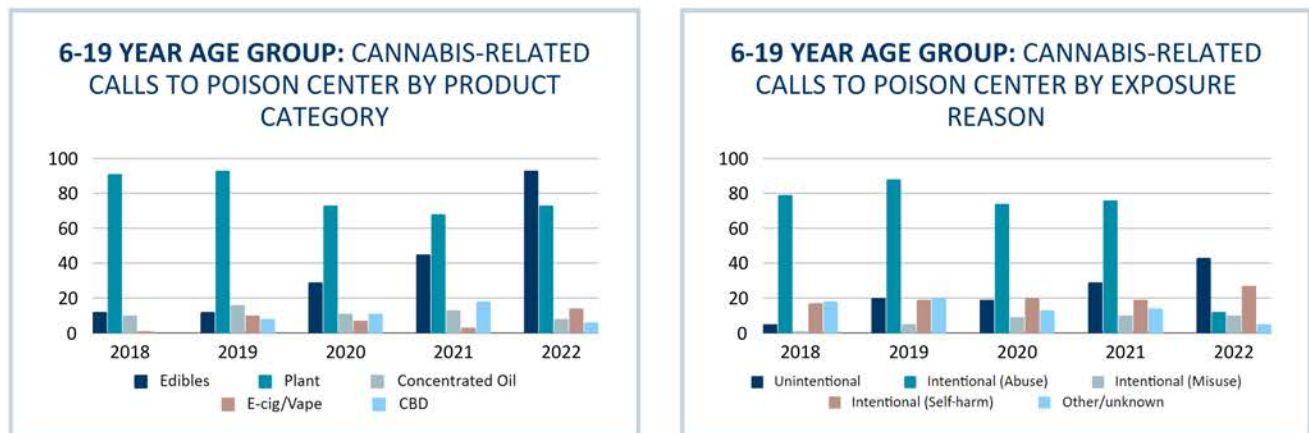
Edibles were the most frequently cited product type, increasing 692% from 2018 to 2022 (Figure 21). During this period, nearly all the calls for cannabis exposure in this age group were for unintentional exposure reasons, which increased by 685% (Figure 22).



[Figure 21; left and Figure 22; right] Source: Minnesota Poison Control System

6-19 Age Group

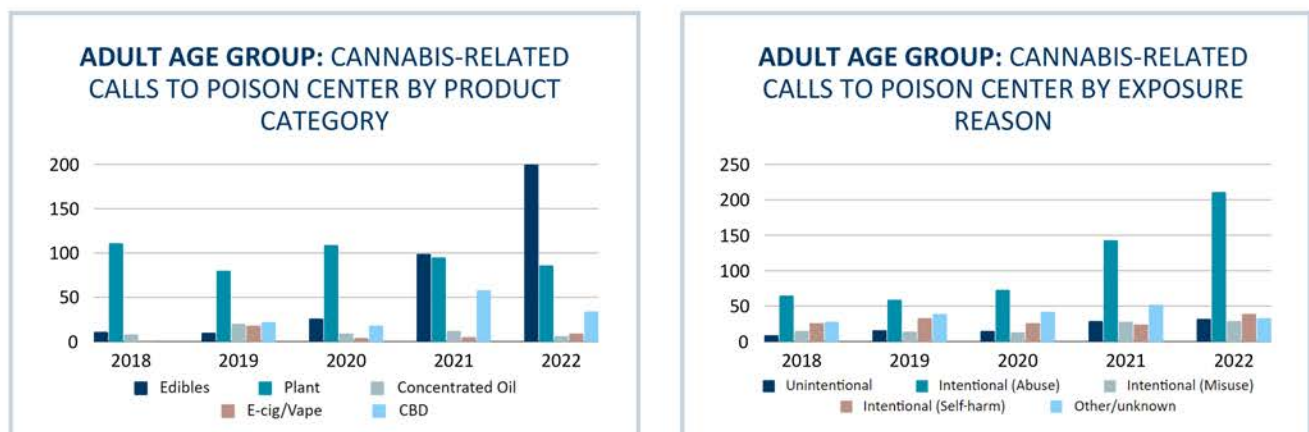
Plant materials were the most frequently cited product type from 2018 to 2021. Between 2018 and 2022, calls related to edibles increased by 675% and became the most frequently cited product type in 2022 (Figure 23). Intentional use (abuse) was the most common reason for calls in this age group between 2018 and 2021 (Figure 24). Unintentional reasons were most frequently cited in 2022.



[Figure 23; left and Figure 24; right] Source: Minnesota Poison Control System

Adult Age Group (20+)

Plant material was the most frequently cited product type from 2018 to 2020. In 2021 and 2022, calls for edibles were most common (Figure 25). Calls for intentional (abuse) reasons were most frequent each year, increasing by 225% between 2018 and 2022 (Figure 26).

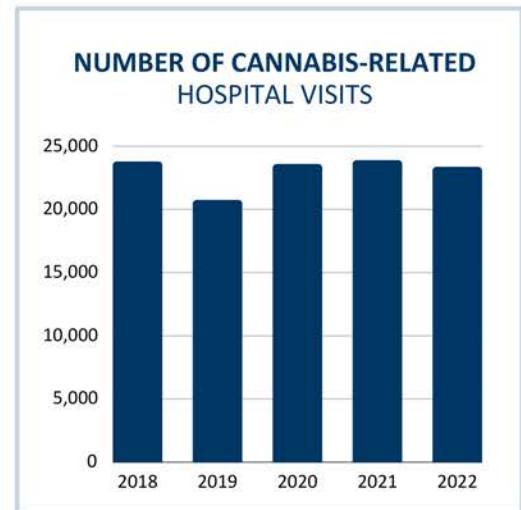


[Figure 25; left and Figure 26; right] Source: Minnesota Poison Control System

CANNABIS-RELATED HOSPITAL VISITS

Data for cannabis-related visits comes from hospital discharge data. The Minnesota Department of Health receives hospital discharge data from the Minnesota Hospital Association. This comprehensive dataset represents approximately 95% of hospital discharges statewide, spanning all 87 counties and including reports from all 123 acute care hospitals in the state, as well as additional hospitals in North Dakota.

It is important to note that hospital discharge data does not account for patients treated by Emergency Medical Services without subsequent hospital transportation or those treated at federally funded facilities (e.g., Veteran's Affairs, Indian Health Services), tribally operated facilities, or other out-of-state facilities.

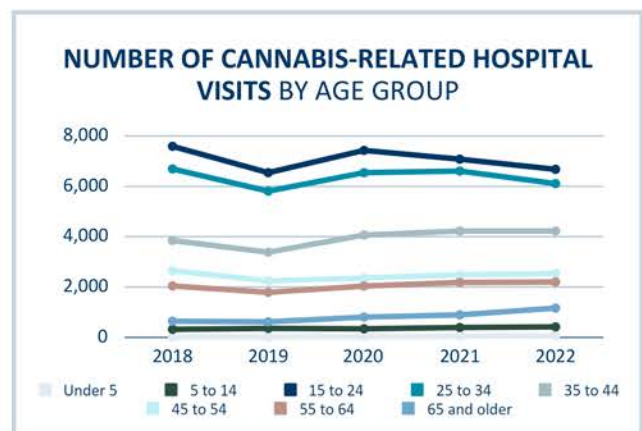
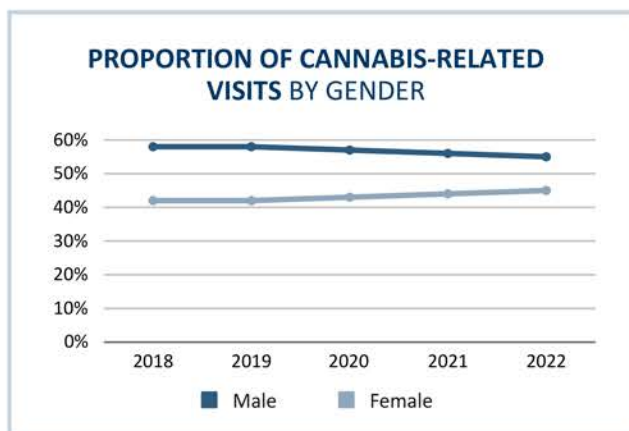


[Figure 27] Source: Minnesota Department of Health

These data encompass all hospital visits, both in the emergency department and inpatient hospitalization, among Minnesota residents presenting to a Minnesota or North Dakota hospital. The visits include individuals discharged with an ICD-10-CM diagnosis code for nonfatal cannabis poisonings and/or a cannabis-related disorder.

The identification of drugs suspected to be involved in hospital visits are oftentimes self-reported by the patient or determined by presenting symptoms at the hospital. Toxicology tests are not typically run for these patients to determine the specific substances involved, so interpretations of drug-specific findings should be approached with caution.

Cannabis-related visits include visits with a diagnosis code for cannabis use, cannabis abuse, cannabis dependence, and cannabis poisoning (see appendix for definitions of diagnosis codes). Cannabis-related visits have remained relatively stable from 2018 to 2022 (23,801 to 23,379 visits), decreasing 1.8% overall during that time (Figure 27). Male patients have accounted for a greater proportion of cannabis-related visits since 2018; however, the difference in the proportion of visits among male and female patients has grown smaller in recent years (Figure 28). From 2018-2022, Minnesotans aged 15-24 and 25-34 accounted for the greatest number of cannabis-related hospital visits each year (Figure 29). [li]



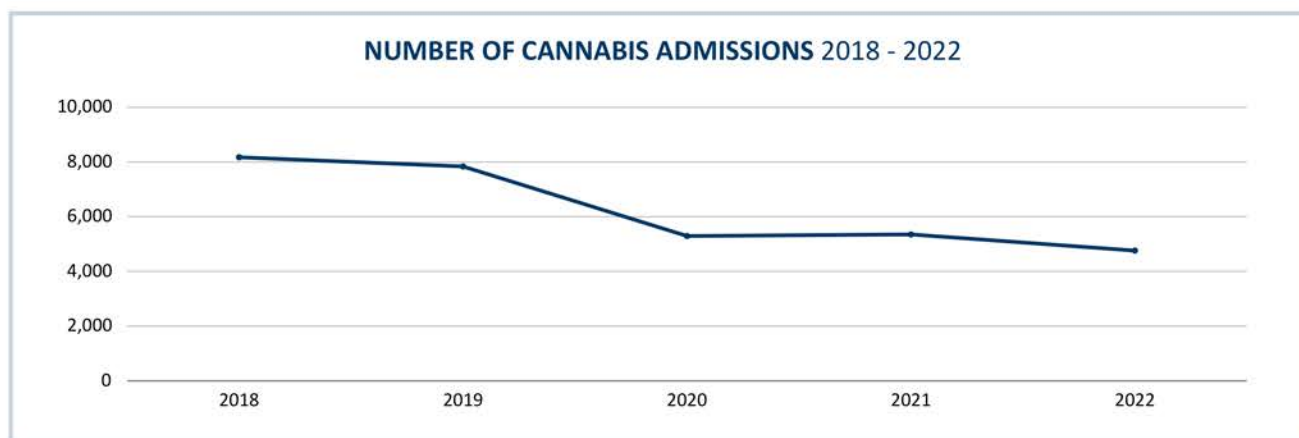
[Figure 28; left and Figure 29; right] Source: Minnesota Department of Health

CANNABIS-RELATED TREATMENT ADMISSIONS

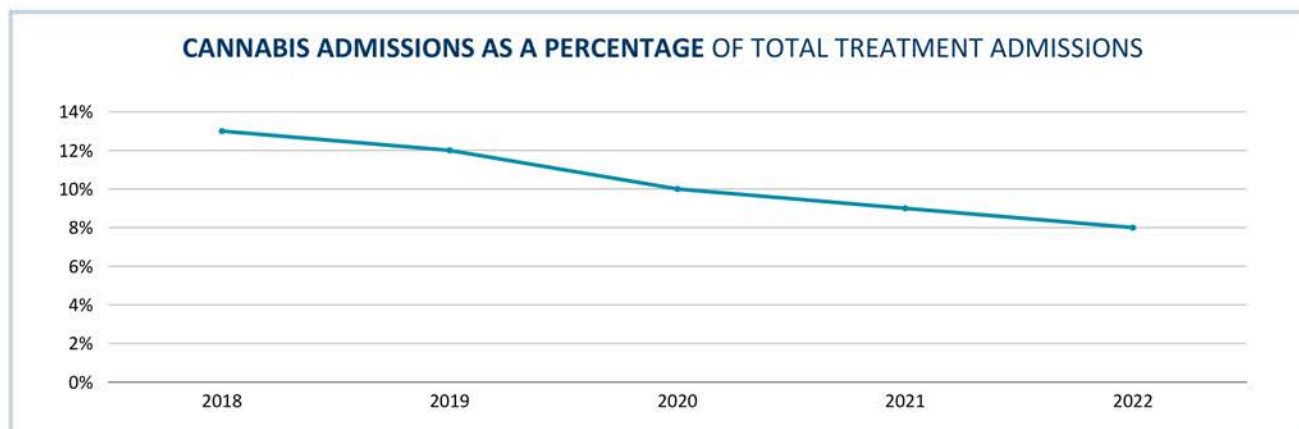
The Substance Abuse and Mental Health Services Administration uses the Treatment Episode Data Set (TEDS) system to collect client-level data for substance use treatment admissions and discharges from state agency hospital systems. Cannabis treatment admissions in the TEDS represent admissions where cannabis is indicated as the primary substance. The cannabis category comprised admissions for the use of marijuana/hashish, including THC and any other cannabis products. Data are for people aged 12 or older.

The National Survey on Drug Use and Health (NSDUH) found that in 2021, 94% of people aged 12 or older with a substance use disorder did not receive any treatment. [lii] As such, treatment admissions data should not be used as an indication of the number of people with a cannabis use disorder or the number of people who could benefit from treatment. Treatment admissions data beginning in 2020 were likely impacted by the COVID-19 pandemic.

The Minnesota TEDS indicates that the number of treatment admissions for cannabis use has decreased 42% in recent years—from 8,174 in 2018 to 4,761 in 2022 (Figure 30). Admissions for cannabis treatment as a percentage of total treatment admissions decreased from 13% to 8% during the same period (Figure 31). Further research is required to better understand trends, behavioral changes, and outcomes related to these data points.

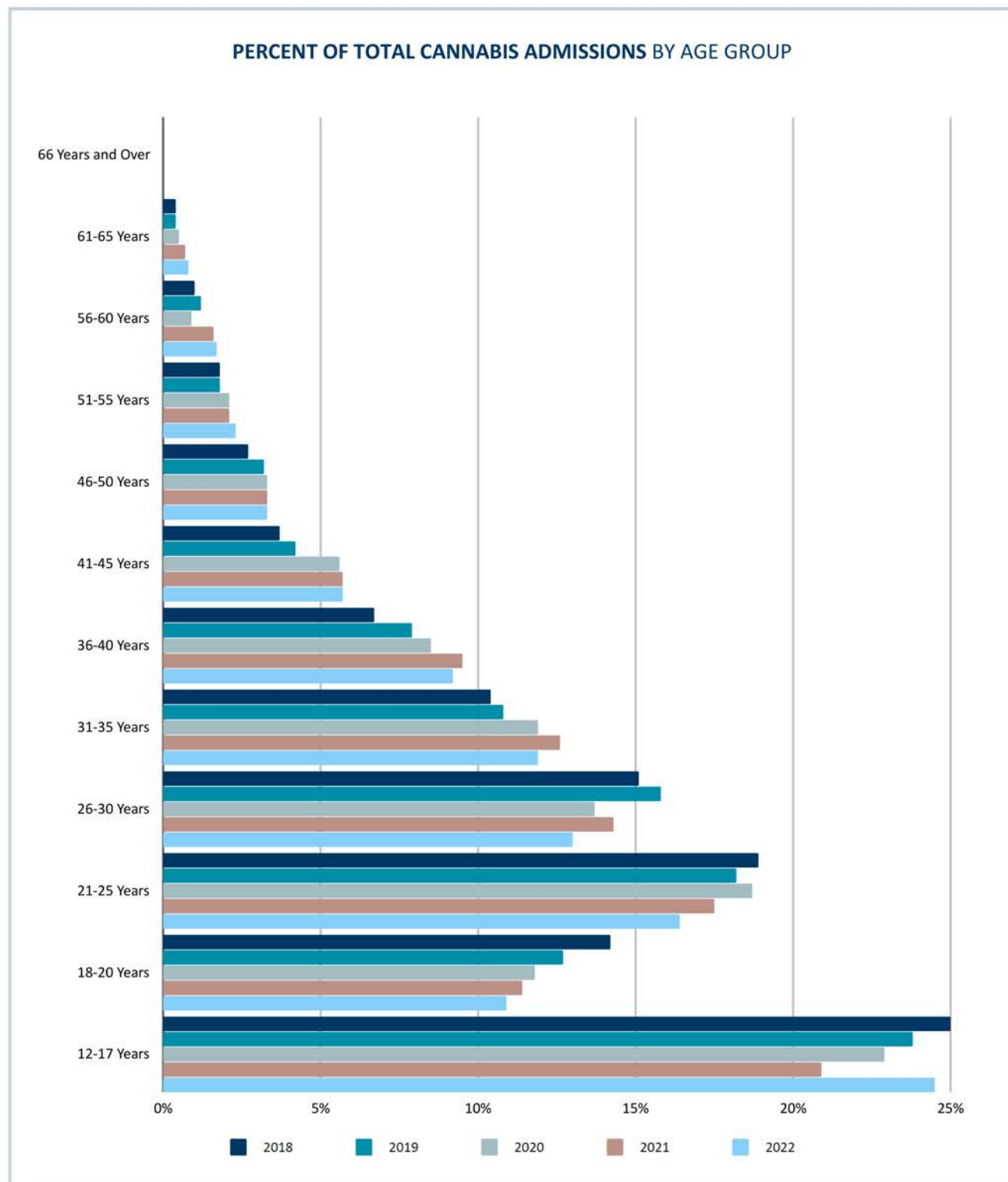


[Figure 30] Source: Substance Abuse and Mental Health Services Administration Treatment Episode Data Set



[Figure 31] Source: Substance Abuse and Mental Health Services Administration Treatment Episode Data Set

Of all the cannabis treatment admissions, the largest percentage of those seeking treatment is the 12- to 17-year-old age group (Figure 32). [liii]



[Figure 32] Source: Substance Abuse and Mental Health Services Administration Treatment Episode Data Set

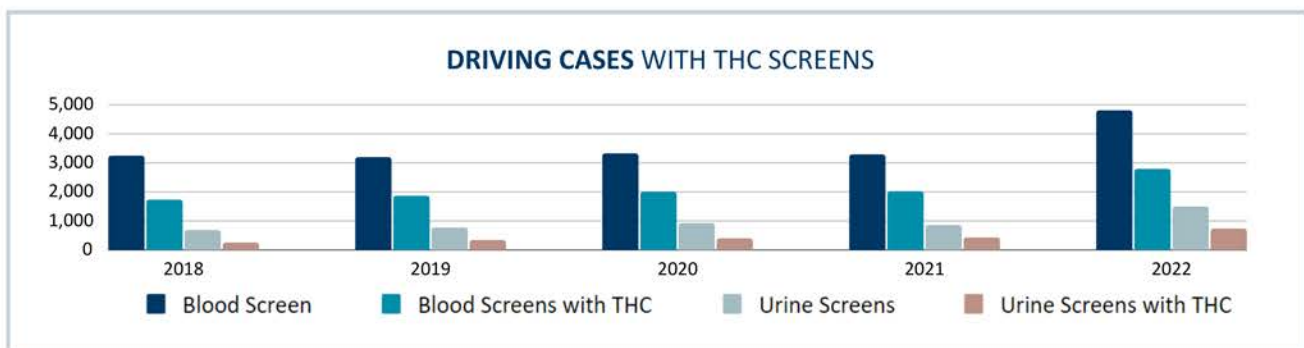
IMPACTS OF MARIJUANA USE ON TRAFFIC SAFETY

The Substance Abuse and Mental Health Services Administration notes that using drugs and alcohol can impact decision-making, coordination, and reaction time. Alcohol and drug use can also cause drowsiness, dizziness, and aggression, which can lead to reckless driving. According to the Minnesota Office of Traffic Safety (OTS), cannabis has measurable effects on people driving, [liv] including:

- Difficulties in road tracking
- Lane-position variability
- Decreased or divided attention
- Impaired cognitive performance
- Relaxed inhibitions
- Impaired executive functions, including route planning, risk taking, or a combination of these factors

Minnesota Drivers Testing Positive for THC

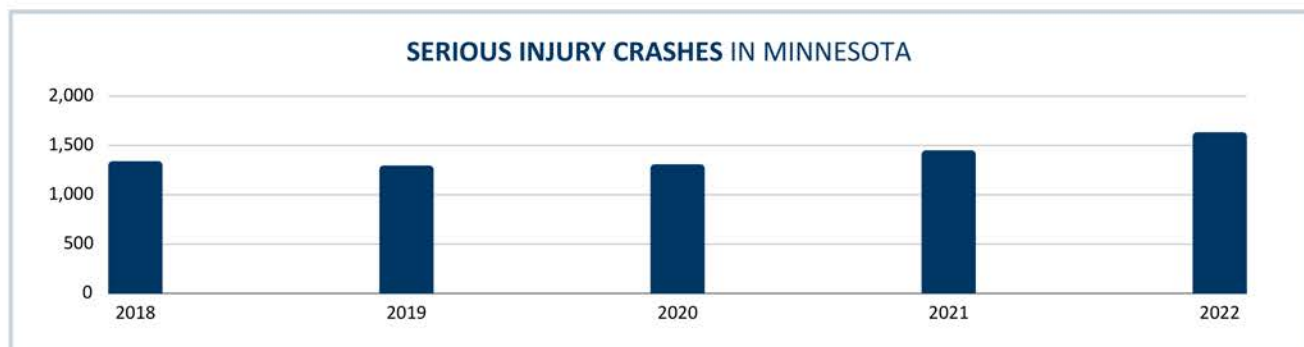
The Minnesota Bureau of Criminal Apprehension (BCA) Forensic Science Services performs toxicology testing on driving cases sent to them by investigating law enforcement agencies across Minnesota. According to the BCA, the number of THC-positive driver blood screens increased 61%, from 1,733 to 2,794, and the number of urine screens testing positive increased 189%, from 254 to 735, between 2018 and 2022 (Figure 33).



[Figure 33] Source: Minnesota Bureau of Criminal Apprehension (BCA) Forensic Science Services

Serious Injury Crashes in Minnesota

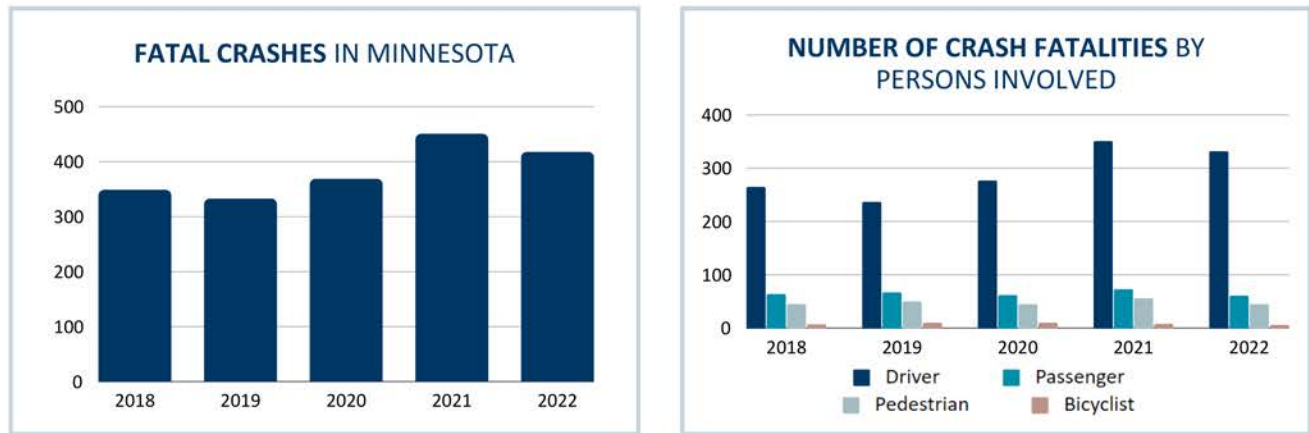
According to OTS, the number of serious crashes in Minnesota, whether THC was determined to be a factor or not, increased by 21.9% from 2018 to 2022, from 1,341 to 1,635 (Figure 34).



[Figure 34] Source: Minnesota Office of Traffic Safety (OTS)

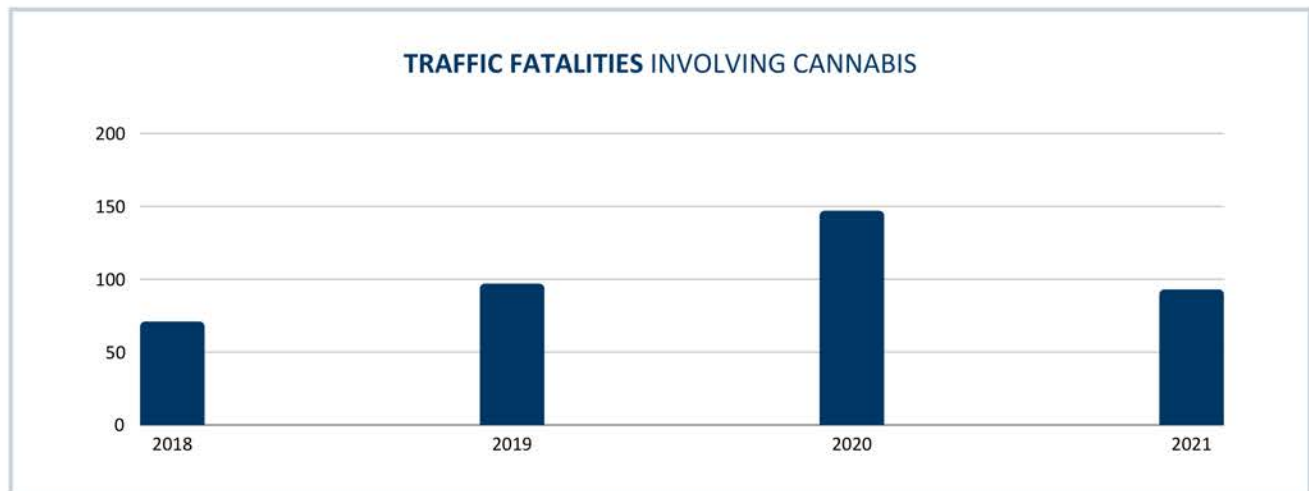
Motor Vehicle Crashes and Fatalities

According to OTS, the number of fatal motor vehicle crashes in the state, whether THC was determined to be a factor or not, increased by 19.7% between 2018 and 2022, from 349 to 418 (Figure 35). Driver fatalities during that period increased 25.2%, from 265 to 332, while passenger, pedestrian, and bicyclist fatalities remained stable (Figure 36).



[Figure 35; left and Figure 36; right] Source: Minnesota Office of Traffic Safety (OTS)

According to the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS), fatal traffic crashes in Minnesota involving Delta 9, unknown cannabinoids, or THC more than doubled between 2018 and 2020 before decreasing 36.7% in 2021 (Figure 37).

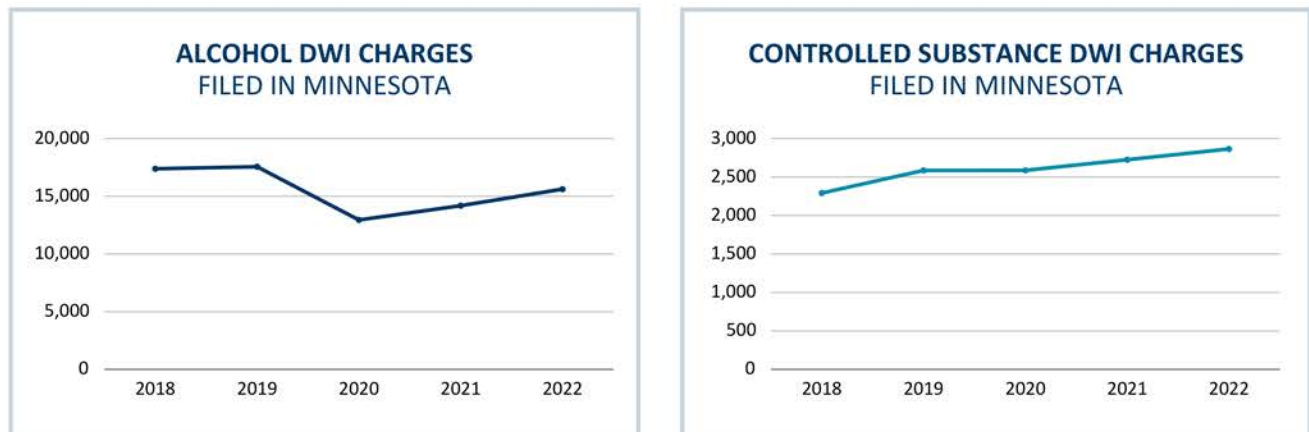


[Figure 37] Source: National Highway Traffic Safety Administration Fatality Analysis Reporting System

It is important to note that coroners and medical examiners typically report toxicology information to FARS via motor vehicle death certificates, in accordance with Minnesota Statute 169.09, Subdivision 11. Data do not indicate a person was impaired at the time of the crash, only the presence of alcohol or drugs, including cannabis, in their system.

Marijuana and Impaired Driving

Data from the Minnesota Judicial Branch District Court Criminal Charges Data Dashboard, which include information from district court filings for criminal charges in Minnesota, show that the number of criminal charges filed for alcohol-related driving while impaired (DWI) decreased 10.2% from 2018 to 2022 (Figure 38) while DWI charges involving a controlled substance, which may or may not include cannabis, increased 25% during the same period (Figure 39).



[Figure 38; left, and Figure 39; right] Source: Minnesota Judicial Branch District Court Criminal Charges Data Dashboard

IMPACT OF MARIJUANA USE IN SCHOOLS

Marijuana use among youth and adolescents is of concern due to the potential health risks associated with early aged marijuana use. According to the U.S. Department of Health and Human Services, frequent marijuana use during adolescence is associated with changes in the areas of the brain involved in attention, memory, decision-making, and motivation. [Ixiii] The Minnesota Department of Health (MDH) notes that cannabis use during youth could impact youth in a variety of ways, [Ixiv] including:

- Neuropsychological and neurodevelopmental decline
- Poor academic performance
- Increased school drop-out rates
- Increased risk for psychotic disorders in adulthood
- Increased risk for depression
- Suicidal ideations or behaviors [Ixv]

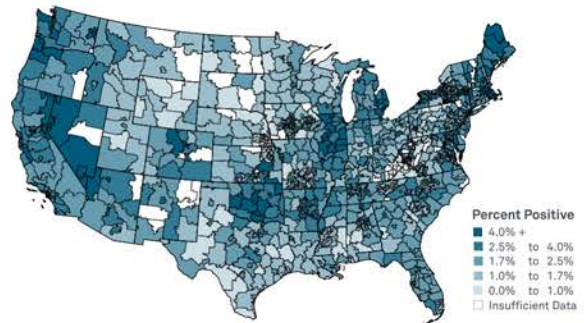
In addition, MDH also notes that adolescent use could increase the risk for future cannabis dependency. [Ixvi]

MARIJUANA USE IN THE WORKFORCE

According to the International Cannabis Policy Study Minnesota 2021 Cannabis Report, many adults use marijuana at work or attend work while under the influence:

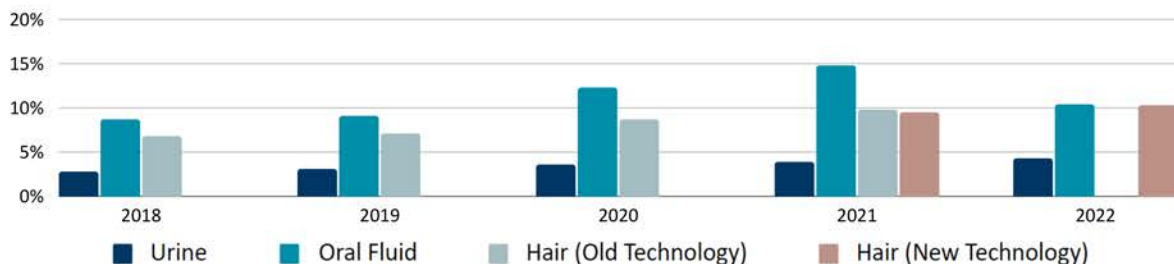
- In 2021, 18% of people nationally who used cannabis in the past year reported doing so at work, including during breaks or within two hours of starting work. [lv] This is a 16% increase over the percentage of adults who self-reported using cannabis at work from 2018 to 2020. [lvi]
- Between 2018 and 2022, marijuana positivity in urine drug tests increased among the general U.S. workforce in all states (Figure 41), whether recreational use was legalized, only medical use was legalized, or neither recreational nor medical use was legalized (Figure 42), according to the Quest Diagnostics Drug testing Index. [lvii]
- Nationally, marijuana positivity urine test rates increased by nearly 12.2% during pre-employment screenings from 2021 to 2022. Post-accident urine tests positive for marijuana increased by nearly 9% during that same time (Figure 43). [lviii]

**MARIJUANA POSITIVITY IN URINE DRUG TESTS
AMONG THE GENERAL U.S. WORKFORCE**



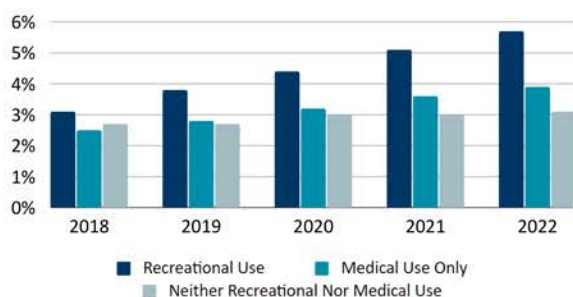
[Figure 40 included for additional context]
Source: Quest Diagnostics Drug Testing Index [lix]

MARIJUANA POSITIVITY IN DRUG TESTS AMONG THE GENERAL U.S. WORKFORCE

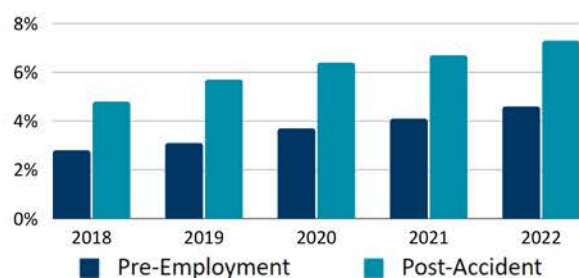


[Figure 41] Source: Quest Diagnostics Drug Testing Index [lx]

**MARIJUANA POSITIVITY BY 2021 STATE
LEGALIZED USE STATUS IN URINE DRUG TESTS
AMONG THE GENERAL U.S. WORKFORCE**



**MARIJUANA POSITIVITY RATES IN URINE DRUG TESTS
AMONG THE GENERAL U.S. WORKFORCE DURING PRE-
EMPLOYMENT AND POST-ACCIDENT TESTING**

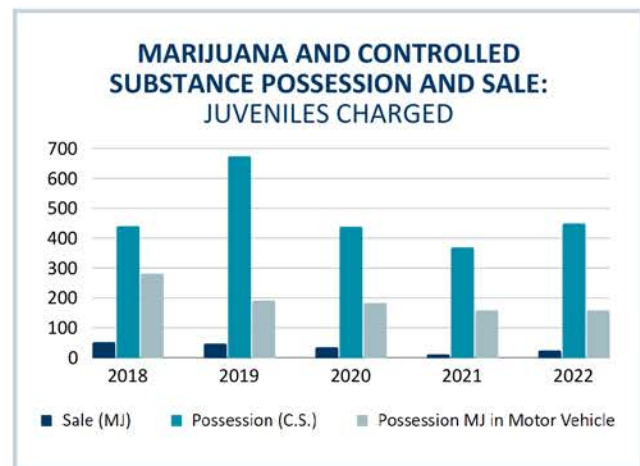
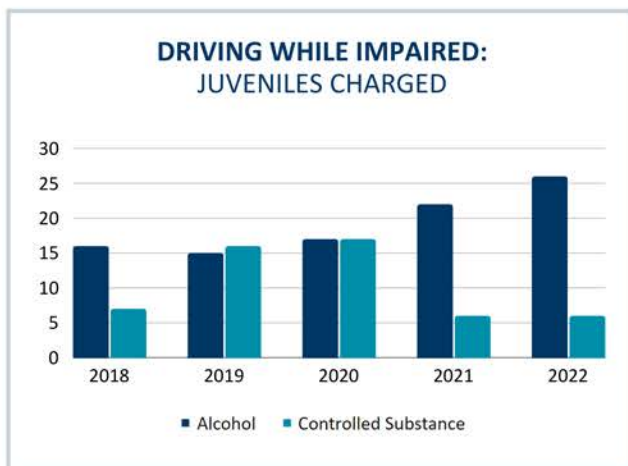


[Figure 42; left, and Figure 43; right] Source: Quest Diagnostics Drug Testing Index [lxi] [lxii]

MARIJUANA CRIMES AND THE JUVENILE JUSTICE SYSTEM

According to data from the State Court Administrator's Office - Minnesota Judicial Branch for the years 2018 through 2022:

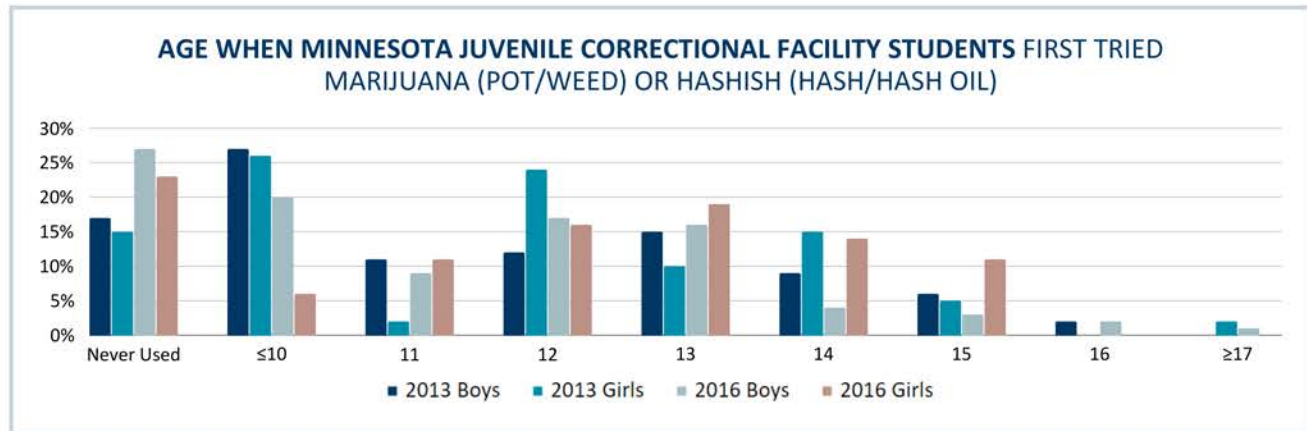
- The number of youth charged with driving under the influence of alcohol increased from 16 to 26. The number of youth charged for driving under the influence of any controlled substance, which may or may not include marijuana, decreased from seven to six (Figure 44)
- The number of youth charged with unlawfully selling one or more mixtures containing marijuana or THC, except a small amount of marijuana with no monetary exchange, decreased 53.8% (Figure 45)
- The number of youth charged with possession of more than 1.4 grams of marijuana in a motor vehicle decreased 43.8% (Figure 45)
- The number of youth charged with unlawfully possessing one or more mixtures containing a controlled substance (C.S.) classified in Schedule I, II, III, IV, except a small amount of marijuana (MJ), increased 2% (Figure 45)



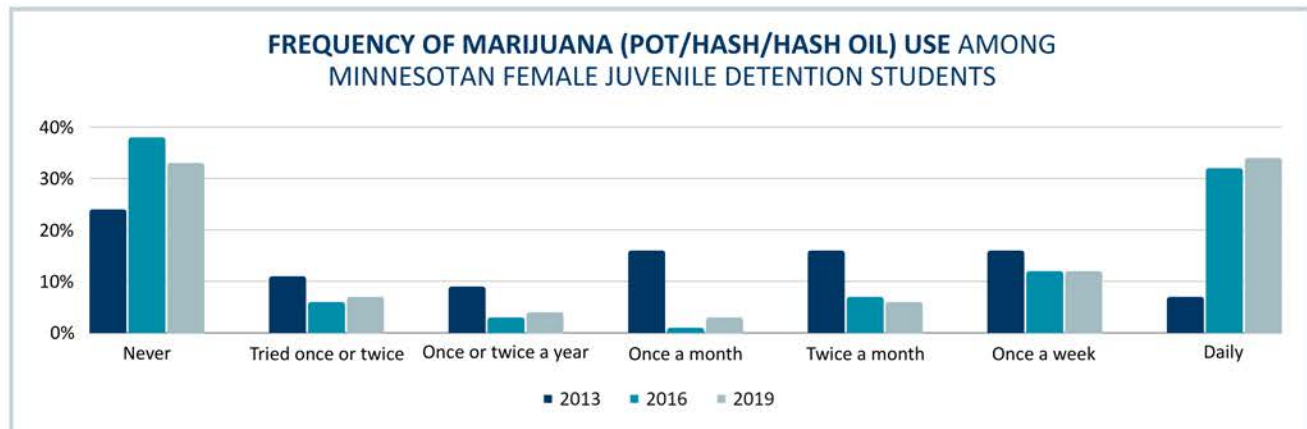
[Figure 44; left and Figure 45; right] Source: State Court Administrator's Office Minnesota Judicial Branch

According to the Minnesota Department of Education Minnesota Student Survey, students in correctional facilities self-reported more frequent marijuana use than the general Minnesota student populace. In 2019:

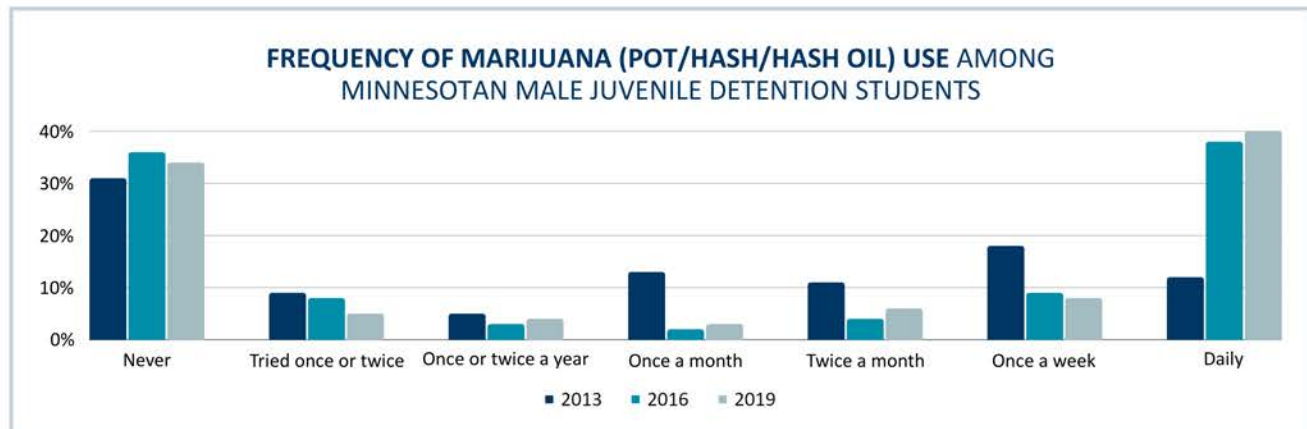
- 34% of female juvenile detention students reported using marijuana or hashish products daily (Figure 47)
- 40% of male juvenile detention students reported using marijuana or hashish products daily (Figure 48)
- 0.6% of eighth-, 1.5 percent of ninth-, and 3.9 percent of 11th-grade Minnesota students reported using marijuana daily.



[Figure 46; included for additional context] Source: Minnesota Department of Education Minnesota Student Survey



[Figure 47] Source: Minnesota Department of Education Minnesota Student Survey



[Figure 48] Source: Minnesota Department of Education Minnesota Student Survey

MARIJUANA AND THE OPIOID EPIDEMIC

According to the Centers for Disease Control and Prevention (CDC), the current overdose epidemic has been driven by opioid-involved deaths, in particular increases in deaths involving the synthetic opioid fentanyl.

In 2021, 106,699 overdose deaths occurred in the U.S. Approximately 1,354 of those deaths were Minnesotans. [lxvii]

The current opioid overdose epidemic is thought to have begun with the over-prescribing of opioids to treat pain, according to the CDC. Thus, some have theorized that using cannabis as an alternative to opioids to treat pain may result in a decrease in opioid overdoses.

A 2014 study found that states with medical cannabis had lower rates of opioid overdose deaths from 1999 to 2010 compared to states without medical cannabis. [lxviii] This association was reexamined in 2019 with an update to that study using data from 1999 to 2017. [lix]

The updated study found that the direction of the relationship between medical cannabis and opioid overdose deaths had reversed when more recent years of data were included. In the states that had medical cannabis, opioid overdose rates increased compared to states without medical cannabis. However, the authors conclude that it is unlikely that medical cannabis use exerted effects on opioid mortality but rather that the association is spurious, likely the result of unmeasured variables such as state incarceration rates, naloxone availability, and the extent of other services available. The study also did not find evidence that either recreational or more restrictive medical cannabis state laws were associated with changes in opioid overdose deaths.

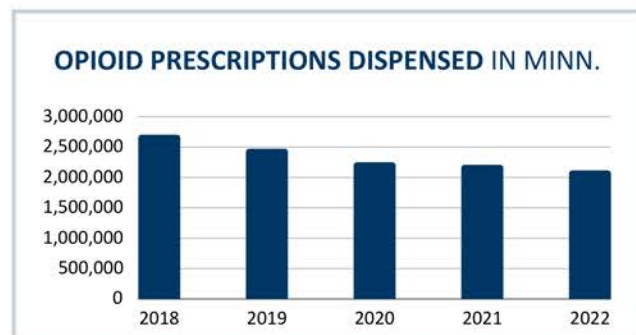
It is important to note that ecological studies examining state-level trends do not allow for conclusions about the relationship between cannabis and opioid overdose deaths in individuals. These studies also cannot account for other factors that might influence overdose deaths. As a result, the apparent correlation between medical cannabis and opioid overdose death rates could be misleading.

Between 2018 and 2022 in Minnesota:

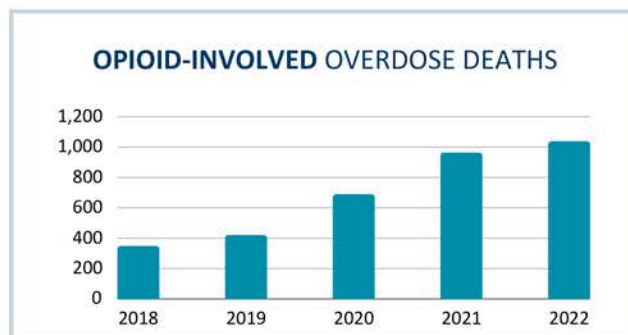
- The number of opioid prescriptions decreased 22% (Figure 49) [lxx]
- Opioid-involved overdose deaths increased 198% (Figure 50)
- Cannabis use increased nearly 27% [lxxi]

Although overdose deaths and cannabis use in Minnesota have both increased in recent years, the trend should be interpreted with caution. The data do not account for potential confounding factors that might be impacting overdose death rates. Thus, any similar trends may not be related.

Additionally, conclusions cannot be drawn about the relationship between cannabis use and opioid overdoses at the individual level due to the lack of data, including data related to whether people who use cannabis are more or less likely to die of an opioid overdose. Further research is required to better understand trends, behavioral changes, and outcomes related to these data points.



[Figure 49] Source: Minnesota Prescription Monitoring Program



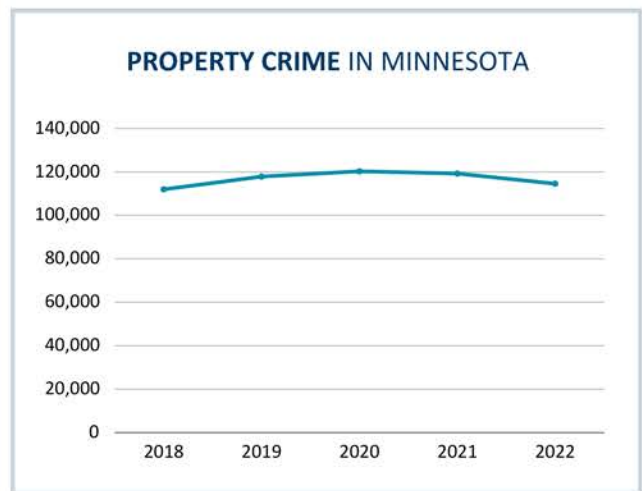
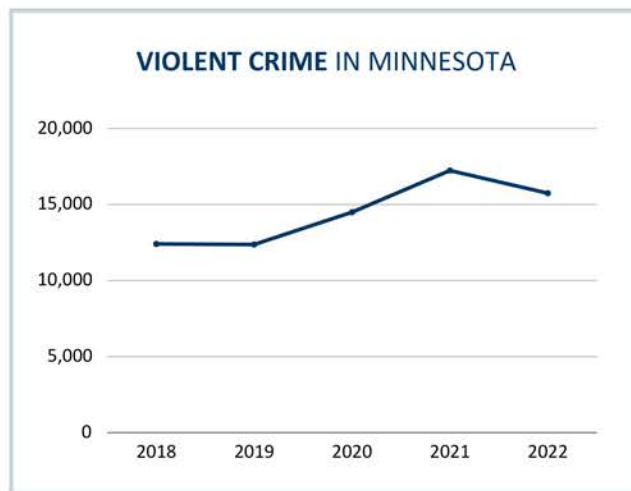
[Figure 50] Source: Minnesota Death Certificates

MARIJUANA CRIME AND THE ILLICIT MARKET

According to the Uniform Crime Report published by the Minnesota Bureau of Criminal Apprehension, violent crime, which includes aggravated assault, rape, robbery, and murder, increased by 26.9% between 2018 and 2022 (Figure 51).

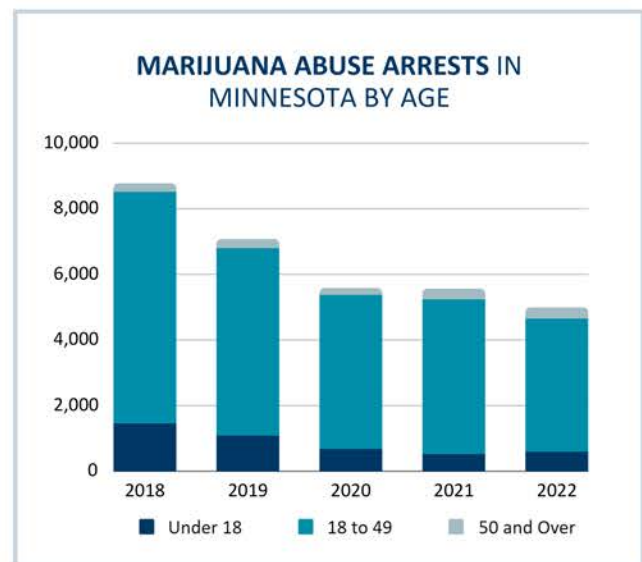
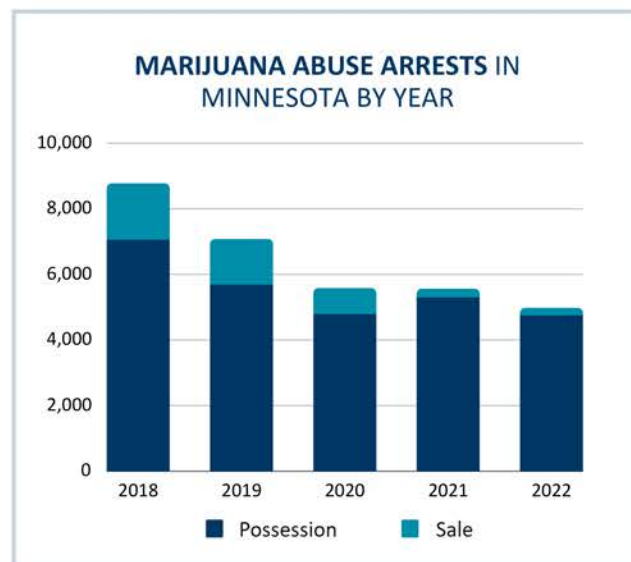
Property crime, which includes burglary, theft, vandalism, and arson, increased 2.3% from 2018 to 2022 (Figure 52).

It is important to note that violent and property crimes do not necessarily involve the use of marijuana. Further research is required to better understand trends, behavioral changes, and outcomes.



[Figure 51; left and Figure 52; right] Source: Minnesota Uniform Crime Report

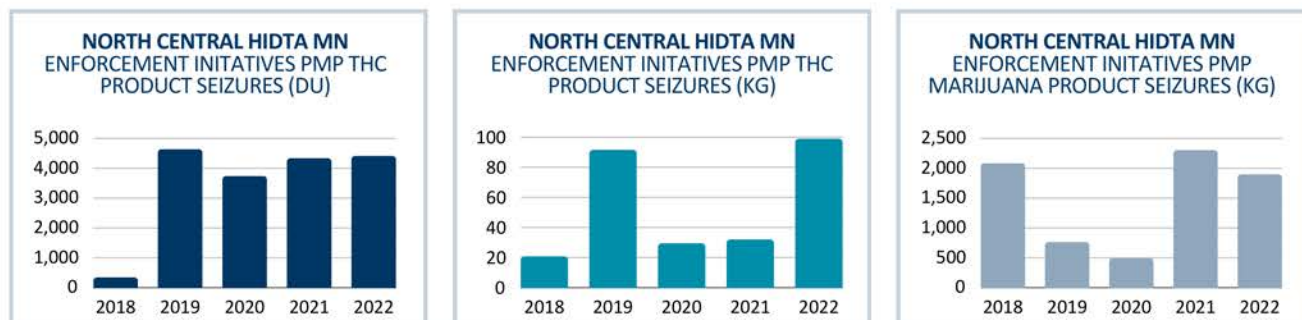
Arrests for marijuana possession decreased 32.5% and arrests for marijuana sale decreased 87.1% from 2018 to 2022 (Figure 53).



[Figure 53; left and Figure 54; right] Source: Minnesota Uniform Crime Report

Minnesota Drug Seizures

Since 2018, THC dosage units seized in Minnesota increased 1,179%, the kilogram weight of THC products seized increased 376%, and the kilogram weight of marijuana products seized decreased 9% (Figures 55, 56 and 57).



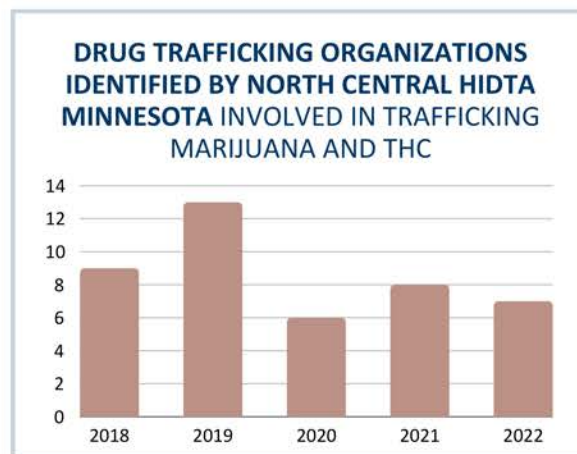
[Figure 55; left, Figure 56; center, and Figure 57; right] Source: North Central HIDTA Minnesota law enforcement initiatives performance management process marijuana seizures [lxxii] [lxxiii] [lxxiv]

Illicit Marijuana Trafficking

Drug trafficking organizations (DTOs) are networks of individuals that collaborate to sell and distribute drugs. The North Central HIDTA Minnesota Investigative Support Center (ISC) identifies and tracks DTOs involved in trafficking marijuana and THC products.

While some DTOs were reported as only trafficking marijuana, others trafficked marijuana and THC alongside other drugs, such as fentanyl, methamphetamine, cocaine, and MDMA. [lxxv]

The number of DTOs involved in trafficking marijuana has decreased since 2019 (Figure 58). However, the number of DTOs operating within Minnesota has remained relatively stable since 2020.



[Figure 58] Source: North Central HIDTA Minnesota law enforcement initiative [lxxvi]

In 2022, North Central HIDTA Minnesota ISC reported that just over 71% of DTOs involved in marijuana and THC trafficking were violent. Marijuana has been identified by North Central HIDTA Minnesota initiatives as often involving large amounts of bulk cash. Possession of large amounts of cash increases the likelihood of violent incidents from attempted robberies surrounding these drug transactions, according to NC HIDTA initiatives.

Currently, there is little data available about how recreational marijuana legalization might impact the illicit market and the operations of DTOs producing and selling marijuana in Minnesota. However, the International Policy Study Minnesota 2022 found that illicit markets persisted in other states where recreational marijuana was legalized.

The study examined data from 2019 and 2020 and found that 27% of survey participants cited the legal purchasing price as the reason they continued to purchase marijuana products through illicit markets. Roughly 17% cited inconvenience of legal sources as the primary factors influencing their decision to illicitly purchase marijuana. [lxxvii] Less common barriers within states where marijuana was legal include slow delivery and credit card requirements for purchases. [lxxviii]

APPENDICES

MINNESOTA STATUTE 277.29 SEC. 72

277.29 Sec. 72. The commissioner of public safety shall contract with Hennepin County to produce a statewide baseline high intensity drug trafficking area report on marijuana. The report must include information on past and present marijuana use in Minnesota; potency of marijuana; impacts of marijuana use on public health, emergency room admissions, traffic accidents, impaired driving citations, workforce, and schools; marijuana crimes and the juvenile justice system; marijuana's influence on the opioid epidemic; and the illicit market for marijuana. The report must be submitted to the chairs and ranking minority members of the house of representatives and senate committees with jurisdiction over public safety, health, education policy, labor, and transportation by February 1, 2024.

MINNESOTA STATUTE 169A.20 – CRIME OF DRIVING WHILE IMPAIRED

It is a crime for a person to drive, operate, or be in physical control of any motor vehicle within this state or on any boundary water of this state when:

- Pre-August 1, 2023
 - Subdivision 1 (2) – the person is under the influence of a controlled substance
 - Subdivision 1 (7) – the person's body contains any amount of a Schedule I or II controlled substance (or its metabolite) except for marijuana or THC
- Post-August 1, 2023
 - Subdivision 1 (7) is changed to read: the person's body contains any amount of a controlled substance listed in Schedule I or II, or its metabolite, other than cannabis flower, a cannabis product, a lower-potency hemp edible, a hemp-derived consumer product, an artificially derived cannabinoid, or tetrahydrocannabinols; or
 - Subdivision (8) is added and reads: the person is under the influence of cannabis flower, a cannabis product, a lower-potency hemp edible, a hemp-derived consumer product, an artificially derived cannabinoid, or tetrahydrocannabinols.

Note: Per Minnesota Statute 169A.20, the state must prove a person is “under the influence” of a cannabis product to prosecute a DUI; it is not enough for a cannabis product to be present in the person's body. The following are case law interpretations of this requirement.

CASE LAW INTERPRETING “UNDER THE INFLUENCE”

General Definition

The standard jury instructions indicate that “[t]here is no set standard as to the quantity of a controlled substance a person must ingest before [he] is regarded as being ‘under the influence.’” 10A Minnesota Practice CRIMJIG 29.04 (2006). Rather, a person is considered to be under the influence “[w]hen [he] is so affected by a controlled substance that [he] does not possess that clearness of intellect and control of [himself] as [he] otherwise would have.” *Id.* The statute is violated if, “as a result of consuming a controlled substance, the person's ability or capacity to [drive] a motor vehicle is impaired.” *Id.*

“Ordinarily, the state proves its case by showing the amount of [controlled substance] consumed (either by witnesses or chemical tests), or by evidence of outward manifestations of [impairment], or by a combination of both methods.” *State, City of Eagan v. Elmourabit*, 373 N.W.2d 290, 293 (Minn. 1985).

Cases Where “Under the Influence” of Cannabis Product Affirmed:

State v. Easterling, 2020 WL 5361078 (Minn. Ct. App. Sept. 8, 2020): The court affirmed a conviction for DUI for marijuana when the following circumstances were proven at trial: (1) the police officer had been trained in sobriety testing, including the detection of “impaired driving with unknown controlled substances”; (2) the officer testified that driving conduct, including failing to yield for vehicles that have the right-of-way, may indicate that a person is driving under the influence of a substance; (3) the officer saw Easterling turn left in front of a school bus that had the right-of-way at an intersection; (4) Easterling’s vehicle came close to the bus, and the bus had to slow down to avoid a collision; (5) when the officer approached Easterling’s vehicle after stopping her, he saw a large cloud of smoke vent out of the vehicle; (6) the officer detected a strong odor of burnt marijuana; (7) Easterling admitted that she smoked marijuana about an hour before the traffic stop; (8) the officer observed a trainee officer conduct field sobriety tests, including a horizontal gaze nystagmus test, the walk-and-turn test, the one-leg stand test, and the lack-of-convergence test; and (9) after watching the tests that the trainee officer conducted, the officer concluded that Easterling should be arrested for impaired driving.

Cases Where “Under the Influence” of Cannabis Product Not Affirmed:

State v. Suber, 2008 WL 942622 (Minn. Ct. App. Apr. 8, 2008): Evidence was insufficient to support conviction for driving under the influence of a controlled substance; defendant admitted that he smoked marijuana 17 hours before his arrest, the State’s drug recognition expert (DRE) testified that marijuana impairment lasted approximately two to four hours and that marijuana would be detectable in a urinalysis for seven to ten days after ingestion, defendant told arresting officer that he had not slept in two days, defendant’s red watery eyes could have been caused by his lack of sleep, and defendant had Asperger’s syndrome, which could have affected his performance of field sobriety tests. In this case, all parties agreed BCA results which showed marijuana in Defendant’s system were erroneously admitted and could not be considered.

State v. Berger, 2020 WL 7329979 (Minn. Ct. App. Dec. 14, 2020): The circumstances proven were: (1) Berger was stopped by an officer after leaving a closed park around 3:30 a.m.; (2) the officer noticed Berger had bloodshot eyes and faintly smelled of alcohol and marijuana; (3) PBT results for alcohol were 0.00; (4) no contraband or drugs were found in the car; (5) the stopping officer did not suspect that Berger was under the influence; (6) while Berger was at the jail to pick up the passenger who had been arrested for a probation violation, the officer learned Berger had a previous arrest for a drug case so the officer spoke to Berger again; (7) during that conversation Berger’s skin was flush and his eyes were dilated and bloodshot; (8) the officer had Berger perform the modified Romberg test, the walk and turn test, and the one leg stand test, concluding that Berger failed them all; (9) a blood sample showed the presence of THC. The court concluded that this evidence did not prove beyond a reasonable doubt that Berger was under the influence of THC, focusing primarily on lack of driving conduct to indicate impairment.

CANNABIS-RELATED HOSPITAL VISITS DEFINITION

ICD-10-CM	Diagnosis Codes and Descriptions
F12.1	Cannabis abuse
F12.2	Cannabis dependence
F12.9	Cannabis use
T40.711	Poisoning by cannabis (derivatives), accidental (unintentional)
T40.712	Poisoning by cannabis (derivatives), intentional self-harm
T40.714	Poisoning by cannabis, undetermined
T40.721	Poisoning by synthetic cannabinoids, accidental (unintentional)
T40.722	Poisoning by synthetic cannabinoids, intentional self-harm
T40.724	Poisoning by synthetic cannabinoids, undetermined
New code effective 10/1/2021 - differentiate between cannabis/synthetic cannabinoids	

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- [i] Minnesota Legislative Reference Library. Minnesota Issue Guide: Cannabis. Retrieved from <https://www.lrl.mn.gov/guides/guides?issue=cannabis#:~:text=Minnesota%20legalized%20medical%20cannabis%20in,Cannabis%20to%20implemen%20the%20law>
- [ii] Minnesota Department of Health. Medical Cannabis Program Key Dates. Retrieved from <https://www.health.state.mn.us/people/cannabis/about/timeline.html>
- [iii] Minnesota Department of Health. Medical Cannabis Program Key Dates. Retrieved from <https://www.health.state.mn.us/people/cannabis/about/timeline.html>
- [iv] Minnesota Department of Health. Medical Cannabis Program Key Dates. Retrieved from <https://www.health.state.mn.us/people/cannabis/about/timeline.html>
- [v] Minnesota Department of Health. Hemp-Derived Cannabinoid Product Compliance Fact Sheet. Retrieved from <https://www.health.state.mn.us/people/cannabis/edibles/docs/compliancefactsheet.pdf>
- [vi] Minnesota Department of Health. Hemp-Derived Cannabinoid Product Compliance Fact Sheet. Retrieved from <https://www.health.state.mn.us/people/cannabis/edibles/docs/compliancefactsheet.pdf>
- [vii] Minnesota Department of Health. Hemp-Derived Cannabinoid Product Compliance Fact Sheet. Retrieved from <https://www.health.state.mn.us/people/cannabis/edibles/docs/compliancefactsheet.pdf>
- [viii] Minnesota Department of Health. Hemp-Derived Cannabinoid Product Compliance Fact Sheet. Retrieved from <https://www.health.state.mn.us/people/cannabis/edibles/docs/compliancefactsheet.pdf>
- [ix] Minnesota Legislative Reference Library. Minnesota Issue Guide: Cannabis. Retrieved from <https://www.lrl.mn.gov/guides/guides?issue=cannabis#recreational>
- [x] Minnesota Department of Health. Cannabis for Adult Consumers. Retrieved from <https://cannabis.state.mn.us/consumers.html>
- [xi] Minnesota Department of Health Cannabis for Adult Consumers. Retrieved from <https://cannabis.state.mn.us/consumers.html>
- [xii] Minnesota Department of Health. Cannabis for Adult Consumers. Retrieved from <https://cannabis.state.mn.us/consumers.html>
- [xiii] Minnesota Department of Health. Cannabis for Adult Consumers. Retrieved from <https://cannabis.state.mn.us/consumers.html>
- [xiv] Minnesota Department of Health. Cannabis for Adult Consumers. Retrieved from <https://cannabis.state.mn.us/consumers.html>
- [xv] Minnesota Department of Health. Minnesota Student Survey. Retrieved from <https://www.health.state.mn.us/data/mchs/surveys/mss/index.html>
- [xvi] National Library of Medicine. Megan A. Moreno, Aubrey D. Gower, Marina C. Jenkins, Bradley Kerr, and Jesse Gritton. Marijuana Promotions on Social Media: Adolescents' Views on Prevention Strategies. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6027581/>

[xvii] National Library of Medicine. Jennifer M. Whitehill, PhD, Pamela J. Trangenstein, PhD, MPH, Marina C. Jenkins, David H. Jernigan, PhD, and Megan A Moreno, MD, MEd, MPH. Exposure to Cannabis Marketing in Social and Traditional Media and Past-Year Use Among Adolescents in States with Legal Retail Cannabis. Retrieved from

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6980270/#:~:text=Exposure%20to%20cannabis%20promoti ons%20via,or%20reinforcing%20positive%20outcome%20expectations>

[xviii] University of Wisconsin-Madison School of Medicine and Public Health. Study: Higher Social Media Engagement with Marijuana Marketing Linked to Higher Rates of Use. Retrieved from <https://www.med.wisc.edu/news-and-events/2019/october/megan-moreno-marijuana-marketing-and-usage/>

[xix] University of Wisconsin-Madison School of Medicine and Public Health. Study: Higher Social Media Engagement with Marijuana Marketing Linked to Higher Rates of Use. Retrieved from <https://www.med.wisc.edu/news-and-events/2019/october/megan-moreno-marijuana-marketing-and-usage/>

[xx] Helgertz SR. Teens and Tobacco in Minnesota: Highlights from the 2020 Minnesota Youth Tobacco Survey: Minnesota Center for Health Statistics, Minnesota Department of Health, February 2021. Retrieved from <https://www.health.state.mn.us/communities/tobacco/data/docs/2020mytsreport.pdf>

[xxi] Helgertz SR. Teens and Tobacco in Minnesota: Highlights from the 2020 Minnesota Youth Tobacco Survey: Minnesota Center for Health Statistics, Minnesota Department of Health, February 2021. Retrieved from <https://www.health.state.mn.us/communities/tobacco/data/docs/2020mytsreport.pdf>

[xxii] National Survey on Drug Use and Health (NSDUH). Retrieved from <https://www.samhsa.gov/data/data-we-collect/nsduh-national-survey-drug-use-and-health>

[xxiii] Substance Abuse and Mental Health Services Administration. Interactive NSDUH State Estimates. Retrieved from <https://pdas.samhsa.gov/saes/state>

[xxiv] Substance Abuse and Mental Health Services Administration. Interactive NSDUH State Estimates. Retrieved from <https://pdas.samhsa.gov/saes/state>

[xxv] International Cannabis Policy Study. Minnesota 2022 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/231066.pdf>

[xxvi] International Cannabis Policy Study. Minnesota 2022 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/231066.pdf>

[xxvii] International Cannabis Policy Study. Minnesota 2022 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/231066.pdf>

[xxviii] International Cannabis Policy Study. Minnesota 2022 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/231066.pdf>

[xxix] International Cannabis Policy Study. Minnesota 2022 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/231066.pdf>

[xxx] International Cannabis Policy Study. Minnesota 2022 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/231066.pdf>

-
- [xxxi] International Cannabis Policy Study. Minnesota 2022 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/231066.pdf>
- [xxxii] International Cannabis Policy Study. Minnesota 2022 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/231066.pdf>
- [xxxiii] Substance Abuse and Mental Health Services Administration. Interactive NSDUH State Estimates. Retrieved from <https://pdas.samhsa.gov/saes/state>
- [xxxiv] Substance Abuse and Mental Health Services Administration. Interactive NSDUH State Estimates. Retrieved from <https://pdas.samhsa.gov/saes/state>
- [xxxv] International Cannabis Policy Study. Minnesota 2021 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/230994.pdf>
- [xxxvi] International Cannabis Policy Study Minnesota 2021 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/230994.pdf>
- [xxxvii] U.S. Department of Justice/Drug Enforcement Administration. Drug Fact Sheet. Retrieved from https://www.dea.gov/sites/default/files/2020-06/Marijuana-Cannabis-2020_0.pdf
- [xxxviii] National Library of Medicine. Terence Ng, Vikas Gupta and Maureen C. Keshock. Tetrahydrocannabinol (THC). Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK563174/>
- [xxxix] Marijuana Fact Check: Potency. Retrieved from <https://www.mjfactcheck.org/potency>
- [xl] National Institute on Drug Abuse. Cannabis Potency Data. Retrieved from <https://nida.nih.gov/research/research-data-measures-resources/cannabis-potency-data>
- [xli] National Institute on Drug Abuse. Cannabis Potency Data. Retrieved from <https://nida.nih.gov/research/research-data-measures-resources/cannabis-potency-data>
- [xlii] Anoka County Sheriff's Office. Midwest Regional Forensic Laboratory Services Guide. Retrieved from <https://www.anokacountymn.gov/1393/Forensic-Services>
- [xliii] Anoka County Sheriff's Office. Midwest Regional Forensic Laboratory Services Guide. Retrieved from <https://www.anokacountymn.gov/1393/Forensic-Services>
- [xliv] Centers for Disease Control and Prevention. Retrieved from <https://www.cdc.gov/marijuana/index.htm#:~:text=Marijuana%E2%80%94which%20can%20also%20be,people%20using%20it%20in%202019>
- [xlv] Minnesota Poison Control System
- [xlvi] Minnesota Poison Control System 2018 Annual Report. Retrieved from <https://mnpoison.org/wp-content/uploads/Poison-Center-Annual-Report-2018-FINAL.pdf>
- [xlvii] Minnesota Poison Control System 2019 Annual Report. Retrieved from <https://mnpoison.org/wp-content/uploads/Poison-Center-Annual-Report-2019.pdf>

[xlvii] Minnesota Poison Control System 2020 Annual Report. Retrieved from <https://mnpoison.org/wp-content/uploads/Poison-Center-Annual-Report-2020-Final-Version-compressed.pdf>

[xlix] Minnesota Poison Control System 2021 Annual Report. Retrieved from <https://mnpoison.org/wp-content/uploads/Annual-Report-Template-2021-last-initials.pdf>

[l] Minnesota Poison Control System 2021 Annual Report. Retrieved from <https://mnpoison.org/wp-content/uploads/Minnesota-Poison-Control-System-Annual-Report-2022-initials.pdf>

[li] Hospital Discharge Data, Minnesota Department of Health, Injury and Violence Prevention Section.

[lii] U.S. Department of Health and Human Services. SAMHSA Announces National Survey on Drug Use and Health (NSDUH) Results Detailing Mental Illness and Substance Use Levels in 2021. Retrieved from <https://www.hhs.gov/about/news/2023/01/04/samhsa-announces-national-survey-drug-use-health-results-detailing-mental-illness-substance-use-levels-2021.html>

[liii] Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Based on administrative data reported by states to TEDS through June 30, 2023. Quick Statistics Results. Retrieved from https://www.samhsa.gov/data/quick-statistics-results?qs_type=teds&state=Minnesota&year=2022&type=Admissions&view=full

[liv] Minnesota Office of Traffic Safety. Retrieved from <https://dps.mn.gov/divisions/ots/drugged-driving/Pages/default.aspx>

[lv] International Cannabis Policy Study. Minnesota 2021 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/230994.pdf>

[lvi] International Cannabis Policy Study. Minnesota 2021 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/230994.pdf>

[lvii] Quest Diagnostics Drug Testing Index. Retrieved from <https://www.questdiagnostics.com/content/dam/corporate/restricted/documents/employer-solutions/2023-drug-testing-index-and-industry-insights/Drug-Testing-Index-2023-Data-Tables-20230511.pdf>

[lviii] Quest Diagnostics Drug Testing Index. Retrieved from <https://www.questdiagnostics.com/content/dam/corporate/restricted/documents/employer-solutions/2023-drug-testing-index-and-industry-insights/Drug-Testing-Index-2023-Data-Tables-20230511.pdf>

[lix] Quest Diagnostics 2021 Annual Report and Industry Insights: Drug Testing Index™ and Industry Insights. Retrieved from https://www.questdiagnostics.com/content/dam/corporate/restricted/documents/employer-solutions/SB9607_5397_Drug_Testing_Index_2021_5-26-21_v7_final.pdf

[lx] Quest Diagnostics Drug Testing Index. Retrieved from <https://www.questdiagnostics.com/content/dam/corporate/restricted/documents/employer-solutions/2023-drug-testing-index-and-industry-insights/Drug-Testing-Index-2023-Data-Tables-20230511.pdf>

[lxi] Quest Diagnostics Drug Testing Index. Retrieved from <https://www.questdiagnostics.com/content/dam/corporate/restricted/documents/employer-solutions/2023-drug-testing-index-and-industry-insights/Drug-Testing-Index-2023-Data-Tables-20230511.pdf>

-
- [lxii] Quest Diagnostics Drug Testing Index. Retrieved from <https://www.questdiagnostics.com/content/dam/corporate/restricted/documents/employer-solutions/2023-drug-testing-index-and-industry-insights/Drug-Testing-Index-2023-Data-Tables-20230511.pdf>
- [lxiii] U.S. Department of Health and Human Services. Retrieved from <https://www.hhs.gov/surgeongeneral/reports-and-publications/addiction-and-substance-misuse/advisory-on-marijuana-use-and-developing-brain/index.html#:~:text=The%20human%20brain%20continues%20to,decision%2Dmaking%2C%20and%20motivation>
- [lxiv] Minnesota Department of Health. Important Information and Warnings About Using Medical Cannabis. Retrieved from <https://www.health.state.mn.us/people/cannabis/docs/patients/patientinfosheet.pdf>
- [lxv] Substance Abuse and Mental Health Services Administration. Preventing Marijuana Use Among Youth. Retrieved from <https://store.samhsa.gov/sites/default/files/pep21-06-01-001.pdf>
- [lxvi] Minnesota Department of Health. Important Information and Warnings About Using Medical Cannabis. Retrieved from <https://www.health.state.mn.us/people/cannabis/docs/patients/patientinfosheet.pdf>
- [lxvii] Minnesota Department of Health. DeLaquil, M., Giesel, S., and Wright, N. (2023) Statewide Trends in Drug Overdose: Final 2021 Update, Data Brief. Retrieved from <https://www.health.state.mn.us/communities/opioids/documents/final2021odmortalityreport.pdf>
- [lxviii] National Library of Medicine. Marcus A Bachhuber, Brendan Saloner, Chinazo O. Cunningham and Colleen L. Barry. Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in the United States, 1999-2010. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/25154332/>
- [lxix] National Library of Medicine. Chelsea L. Shover, Corey S. Davis, Sanford C. Gordon and Keith Humphreys. Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in the United States, 1999-2010. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/31182592/>
- [lxx] Minnesota Department of Health. Drug Overboard Dashboard. Retrieved from <https://www.health.state.mn.us/communities/opioids/opioid-dashboard/index.html>
- [lxxi] International Cannabis Policy Study. Minnesota 2022 Cannabis Report. Retrieved from <https://www.lrl.mn.gov/docs/2023/other/231066.pdf>
- [lxxii] North Central High Intensity Drug Trafficking Areas Performance Management Process Database
- [lxxiii] North Central High Intensity Drug Trafficking Areas Performance Management Process Database
- [lxxiv] North Central High Intensity Drug Trafficking Areas Performance Management Process Database
- [lxxv] North Central High Intensity Drug Trafficking Areas Performance Management Process Database
- [lxxvi] North Central High Intensity Drug Trafficking Areas Performance Management Process Database

[lxxvii] Journal of Studies on Alcohol and Drugs. Samantha Goodman, Ph.D., Elle Wadsworth, Ph.D., and David Hammond, Ph.D. Reasons for Purchasing Cannabis from Illegal Sources in Legal Markets: Findings Among Cannabis Consumers in Canada and U.S. States, 2019-2020. Retrieved from <https://www.jsad.com/doi/abs/10.15288/jsad.2022.83.392?journalCode=jsad>

[lxxviii] Journal of Studies on Alcohol and Drugs. Samantha Goodman, Ph.D., Elle Wadsworth, Ph.D., and David Hammond, Ph.D. Reasons for Purchasing Cannabis from Illegal Sources in Legal Markets: Findings Among Cannabis Consumers in Canada and U.S. States, 2019-2020. Retrieved from <https://www.jsad.com/doi/abs/10.15288/jsad.2022.83.392?journalCode=jsad>