Cannabis Public Health Surveillance:

2024 Cannabis Health Statistics Report

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Connecticut Department of Public Health

Manisha Juthani, MD, Commissioner

Prepared by:

Jack King, MPH Epidemiologist II

Alyson Codner, MPH Epidemiologist I

Stephanie Poulin, MPH Epidemiologist III

Community, Family Health, and Prevention Branch Chronic Diseases and Injury Prevention Section Epidemiology Unit

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Connecticut Department of Public Health Community, Family Health, and Prevention Branch 410 Capitol Avenue Hartford, CT 06134-0308 Phone: (860) 509-8251 <u>https://portal.ct.gov/DPH/Health-Education-Management--</u> <u>Surveillance/Cannabis/Cannabis-Health-Statistics</u>

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Purpose

This report is a product of the Epidemiology Unit of the Connecticut Department of Public Health (DPH) Community, Family Health, and Prevention Branch (CFHPB). Its purpose is to provide cannabis data and statistics on adverse health events, demographic risk factors, and trends related to cannabis consumption in Connecticut, per legislative mandate. In 2021, the state passed legislation¹ that legalizes and regulates the adult use of cannabis in Connecticut. As part of that legislation, State of Connecticut General Statute, Section 21a-422e (<u>CGS Sec. 21a-422e</u>) states:

(a) There is established, within the Department of Public Health, a program to collect and abstract timely public health information on cannabis associated illness and adverse events, nonfatal and fatal injuries and cannabis use poisoning data, from state and national data sources. Such program shall include, but need not be limited to, the following: (1) Serving as a data coordinator, analysis and reporting source of cannabis data and statistics that include, but are not limited to, illness, adverse events, injury, pregnancy outcomes, childhood poisoning, adult and youth use, cannabis-related emergency room visits and urgent care episodic mental health visits; (2) performing epidemiologic analysis on demographic, health and mortality data to identify risk factors and changes in trends; (3) working with the Departments of Consumer Protection and Mental Health and Addiction Services and any other entity that the Commissioner of Public Health deems necessary to disseminate public health alerts; and (4) sharing state-wide data to inform policy makers and citizens on the impact of cannabis legalization by posting public health prevention information and cannabis use associated morbidity and mortality statistics to the Department of Public Health's Internet web site.

(b) The Department of Public Health shall, not later than April 1, 2023, and annually thereafter, report in accordance with the provisions of section 11-4a of the general statutes, to the joint standing committees of the General Assembly with cognizance relating to public health, human services, and appropriations and the budgets of state agencies about the public health information on cannabis collected by the department under subsection (a) of this section.

The first annual cannabis health statistics report² was published in April 2023. This is the second annual cannabis health statistics report. It has three components: 1) an executive summary with a brief overview of the most important findings, 2) a main section containing a description of the findings as well as key statistics and figures, and 3) a collection of separate, supplemental documents that present detailed statistics and a comprehensive description of the applied methodology.

The supplemental documents referenced throughout this report and located on the DPH Cannabis Health Statistics website are as follows:

- Suppl. 1: Behavioral Risk Factor Surveillance System 2022 Supplemental Tables
- *Suppl. 2*: Connecticut Inpatient Hospitalization and Emergency Department Visit 2022 Supplemental Tables

Terms

- Cannabis
 - CGS Sec. 21a-420 defines the term "cannabis" as being equivalent with the term "marijuana". For this report, "cannabis" is used to maintain consistency and avoid confusion.
- Self-Reported Cannabis Use History
 - Different surveys rely on different terminology to define windows of time for cannabis use history. Analyses of Behavioral Risk Factor Surveillance System³ (BRFSS) data typically present cannabis use within the past 30 days as "current use". Analyses of National Survey on Drug Use and Health⁴ (NSDUH) data typically specify a time frame (e.g., "use in the past month", "use in the past year"). To avoid confusion when comparing prevalence estimates across data sources, a defined window of time is presented for all prevalence estimates (e.g., lifetime, past year, past month) regardless of the data source.
- Uncertainty
 - Instead of using a bright line threshold for "statistical significance", it was decided that group differences should be described using other language, often invoking statistical characteristics like 95% confidence intervals (CI) and coefficients of variation (CV, also known as relative standard errors) to illustrate degrees of uncertainty. It should be noted, however, that all group prevalence differences highlighted in the main body of the report, unless otherwise specified, did not have overlapping 95% CIs and thus a statistical test of group differences based on the same statistical assumptions used to generate the confidence intervals would result in a p-value < 0.05 (i.e., "statistically significant")⁵.

Acronyms

- Data Sources
 - BRFSS: Behavioral Risk Factor Surveillance System³
 - NSDUH: National Survey on Drug Use and Health⁴
 - CIHEDVD: Connecticut Inpatient Hospitalization and Emergency Department Visit Dataset
 - o TEDS-A: Treatment Episode Data Set Admissions⁶
- Other Acronyms
 - DUIC: Driving Under the Influence of Cannabis
 - ED: Emergency Department
 - o NH: Non-Hispanic

Executive Summary

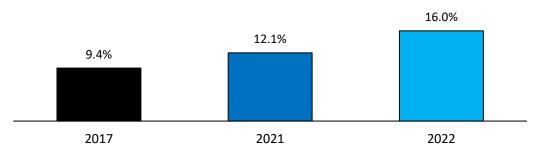
- The prevalence of adult cannabis use in Connecticut increased from 2021 to 2022.
- One half of adult past month cannabis users reported they use cannabis on a daily or near-daily basis.
- Overall rates of cannabis-related ED visits and inpatient hospitalizations decreased from 2021 to 2022.
- Cannabis-related ED visit rates decreased or remained stable among all age groups except among 10 to 14 year-olds, whose rates have been generally upward-moving since 2016.
- Young adult residents continue to report low perceived risk from cannabis use, use it frequently, experience higher rates of cannabis-related adverse health outcomes, and report that they think about or attempt quitting cannabis at a higher rate than adults in older age groups.
- Non-Hispanic Black residents continue to have the highest rates of cannabis-related emergency department visits and inpatient hospitalizations of any race and ethnicity group.
- One in five adult past month cannabis users reported driving within three hours of using cannabis.

Use and Risk Behaviors

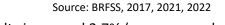
Survey Data

Cannabis Use Among Adults: Behavioral Risk Factor Surveillance System (BRFSS)

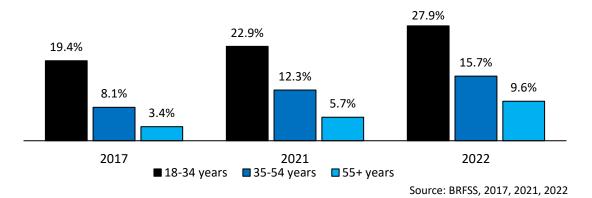
The Behavioral Risk Factor Surveillance System (BRFSS) enables researchers to examine relationships between a wide range of health risk behaviors and demographic characteristics among adults aged 18 years or older⁷. The Connecticut BRFSS included questions about cannabis use beginning in 2017 and then again in 2021. The 2022 Connecticut survey included new questions on driving under the influence of cannabis, contemplating quitting cannabis, and perceived health risks of daily cannabis use. Detailed statistics, including confidence intervals, coefficients of variation, and statistical model results are provided in the supplemental document titled "Behavioral Risk Factor Surveillance System 2022 Supplemental Tables", which can be found on the Cannabis Health Statistics page on the DPH website (*Suppl. 1*).



Past Month Cannabis Use

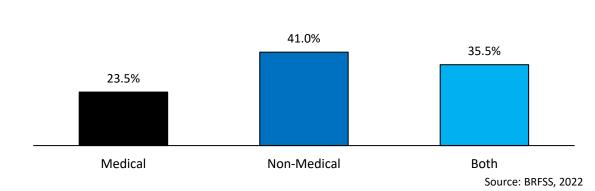


From 2017 to 2021, past month cannabis use among adults increased 2.7% (on average about 0.7% per year) from 9.4% to 12.1%. From 2021 to 2022 past month use increased 3.9%.



In 2022, more than one in four adults aged 18 to 34 years reported past month cannabis use. A statistical model calculated using 2022 data suggests adults aged 18 to 34 years have about three times higher odds of being past month cannabis users than those aged 55+ years (*Suppl.* 1). Though the 55+ years group has the lowest prevalence of past month cannabis use, they are

the age group with the largest increase in use since 2017 (3.4% to 9.6%; 2.8 times higher). Other predictors of past month cannabis use include gender, income, sexual orientation, mental health status, disability status, smoking, and drinking to excess (*Suppl. 1*).

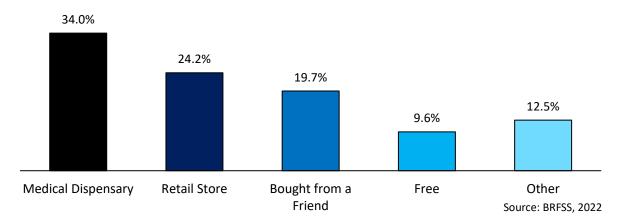


Reason for Cannabis Use

A little less than one quarter of adult past month cannabis users report using it primarily for medical reasons. A statistical model suggests medical cannabis users tend to be older, female, lower income, have a chronic condition, have a disability, and not drink to excess. Past month cannabis users who report using it primarily for non-medical reasons tend to be male and to drink to excess (*Suppl. 1*).

Daily/Near-Daily Cannabis Use

8% of all Connecticut adults and 50% of past month cannabis users used cannabis 20 or more days in the past month (i.e., daily/near-daily cannabis use). Predictors of daily/near-daily cannabis use were similar to predictors of any past month cannabis use (*Suppl. 1*).



Source of Cannabis among Past Month Cannabis Users

More than one-third of cannabis users say they usually obtain cannabis from a medical dispensary, though less than one-quarter report they use cannabis primarily for medical purposes. The second most common source of cannabis is from a retail store. Least common were the sources that are grouped in the "Other" category, which includes grocery/convenience stores, online, growing it yourself, or "some other source".

Driving Under the Influence of Cannabis (DUIC)

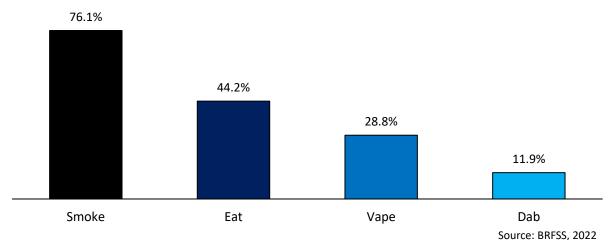


Source: BRFSS, 2022

Driving under the influence of cannabis was relatively common among adult past month cannabis users: approximately one in five adult cannabis users reported driving within three hours of using cannabis. This proportion was higher for adults aged 18-34 years (24.6%). A statistical model identified the following characteristics as predictors of DUIC among cannabis users: relatively younger age (18-34), male gender, non-Hispanic Black race and ethnicity, and being an excessive drinker (*Suppl. 1*).

Perceived Risk of Daily or Near-Daily Cannabis Use

Less than half of adults believe daily/near-daily cannabis use poses moderate to great risk to a person's health. Statistical modelling suggests older adults, Hispanics, and women tend to perceive higher risk from daily/near-daily cannabis use. Adults with incomes of \$25,000 or higher, poor mental health, cigarette smoking, or excessive drinking behavior tend to report a lower perceived risk from daily/near-daily cannabis use (*Suppl. 1*).



Methods of Cannabis Consumption

Among adult past month cannabis users, smoking was the most commonly reported method of consumption (76%), followed by edible cannabis (44%), vaping (29%), and dabbing (12%). In 2022, respondents could pick multiple methods of consumption, so the percentages do not add to 100%.



Source: BRFSS, 2022

Among past month cannabis users, approximately one in six had contemplated quitting or had attempted to do so without success.

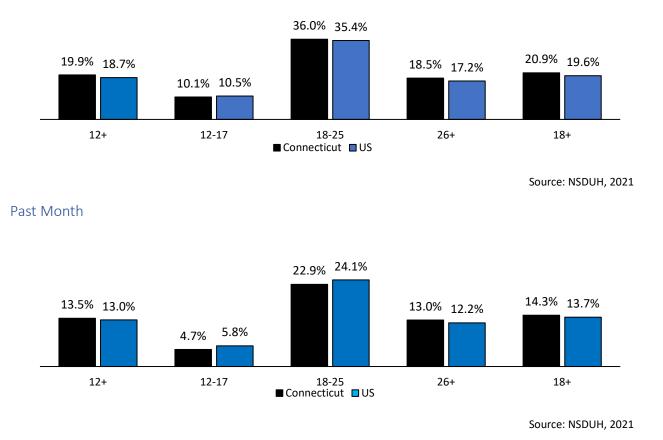
BRFSS Data Limitations

These results should be interpreted with some caution, particularly when comparing 2017 and later years. Cannabis-related questions on the 2017 questionnaire were collected using a postsurvey; BRFSS respondents were asked to remain on the telephone for a bit longer to answer additional questions in exchange for a gift card. This affected response rates for certain questions and may have introduced further selection bias. 2021 was also an extraordinary year for data collection and for society in general because of the impact of the COVID-19 pandemic. Lastly, all data were self-reported and thus subject to reporting bias; changing perceptions around the social acceptability of cannabis use may or may not have affected responses to cannabis-related survey questions. For a comprehensive description of more general BRFSS limitations, see "Cannabis Public Health Surveillance: State of the Surveillance System Report"⁸ on the Cannabis Health Statistics page of the DPH website.

Cannabis Use Among Adolescents and Adults: National Survey on Drug Use and Health (NSDUH)

Every year, the Substance Abuse and Mental Health Services Administration (SAMHSA) administers the National Survey on Drug Use and Health (NSDUH) to non-institutionalized individuals aged 12 years and older across the United States. NSDUH provides national and state-level estimates on substance use, mental health issues, and related outcomes. The following section summarizes estimates for the state of Connecticut and the United States from the following report: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2021⁴.

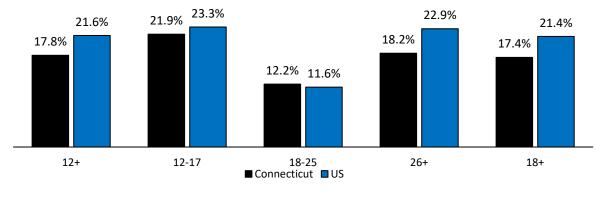
Past Year and Past Month Cannabis Use



Past Year

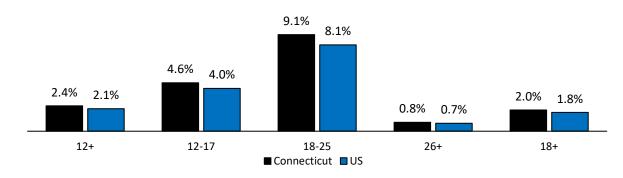
Past year cannabis use among all individuals 12 years and older was approximately 20% in Connecticut and 19% in the United States (US), while past month use of cannabis in Connecticut and the US was 14% and 13% respectively. 18 to 25 year-olds reported the highest usage of any age category in both the US and Connecticut for past year cannabis use and past month cannabis use.

Perception of Risk from Smoking Cannabis



Source: NSDUH, 2021

Younger adults aged 18 to 25 years were less likely to perceive smoking cannabis once per month as risky compared to any other age group with only 12% perceiving great risk of monthly use in Connecticut and the US overall.



First Time Cannabis Use in the Past Year

Source: NSDUH, 2021

In Connecticut, 9% of adults aged 18 to 25 years reported using cannabis for the first time in the past year, which was the highest prevalence of first-time use in any age group in 2021.

NSDUH Data Limitations

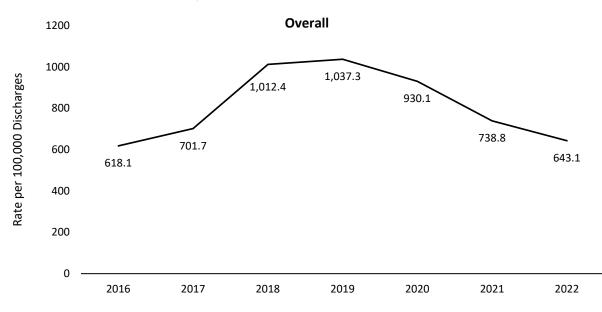
National- and state-level data from the 2021 NSDUH were abstracted from the Substance Abuse and Mental Health Agency annual report⁹. The data are presented for a single year and cannot be compared to previous NSDUH estimates due to changes in data collection methods and differences in estimates between 2021 and the years prior to the pandemic¹⁰. Detailed statistics as well as a more comprehensive explanation of the data limitations can be found in the 2021 NSDUH methodology¹⁰.

Morbidity

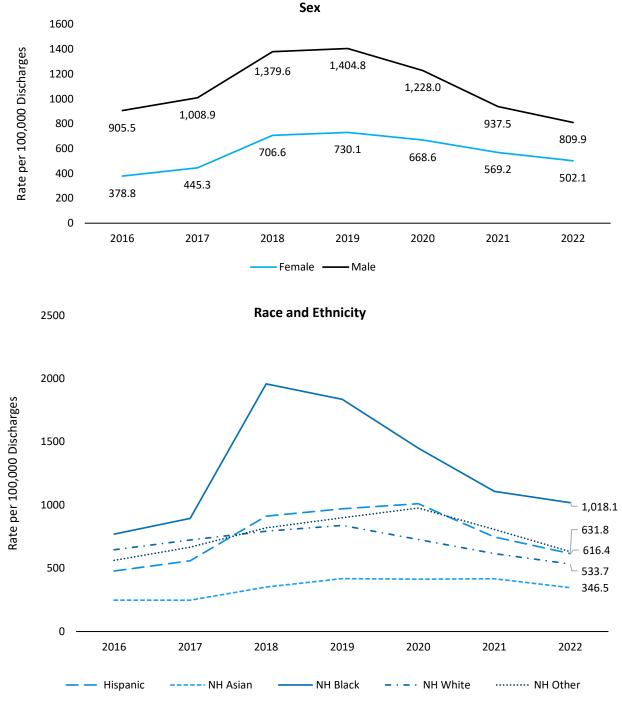
Healthcare Administrative Data

Acute Healthcare Encounters: Connecticut Inpatient Hospitalization and Emergency Department Visit Dataset (CIHEDVD)

When a person goes to an emergency department (ED) or is admitted to a hospital, healthcare workers use a specialized coding system to document the reason or reasons for the visit. The current coding system, called the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), includes codes for documenting cannabis-related diagnoses. By searching for these codes in data submitted to DPH by Connecticut hospitals, it is possible to calculate the percentage of all healthcare visits where cannabis use was noted in the visit record. For more comprehensive statistics including case counts, total sample sizes, standard errors, and 95% confidence intervals for each rate as well as detailed information about the methods used, please refer to the supplemental document titled "Connecticut Inpatient Hospitalization and Emergency Department Visit 2022 Supplemental Tables" (*Suppl. 2*) on the Cannabis Health Statistics page of the DPH website.

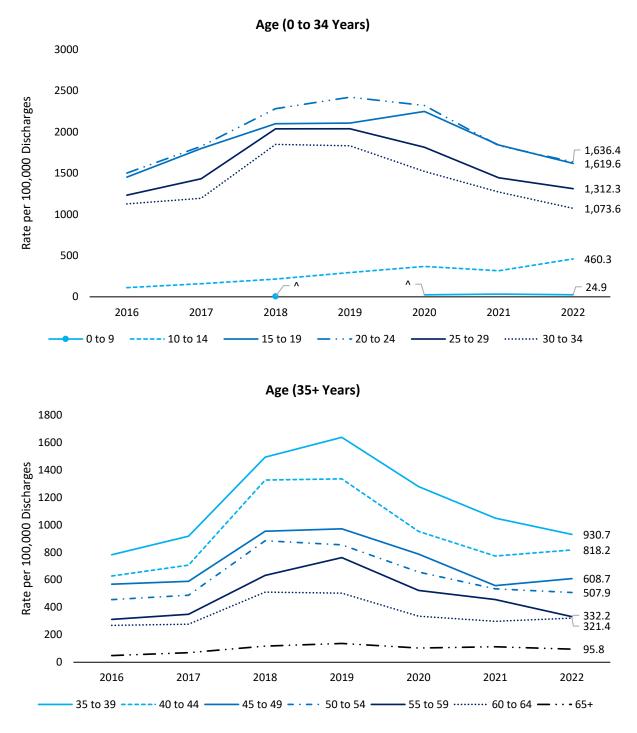


Cannabis-Related ED Visit Rates, 2016-2022



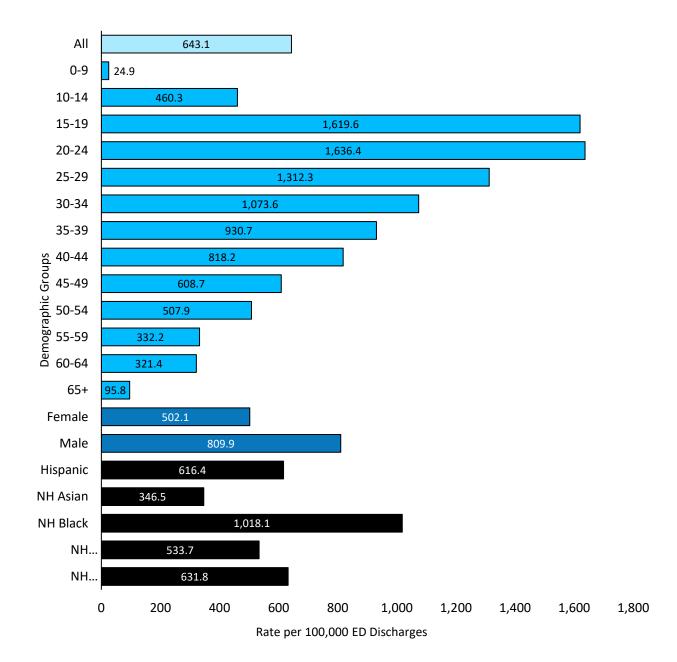
Source: CIHEDVD, 2016-2022

From 2021 to 2022, cannabis-related ED visit rates decreased overall and for both sexes. There were clear reductions in rates among those who identify as Hispanic, non-Hispanic White, and non-Hispanic Other, but changes were uncertain among other race and ethnicity groups. See *Suppl. 2* for detailed data from 2022. See the 2023 cannabis health statistics report² for historical data.



Source: CIHEDVD, 2016-2022

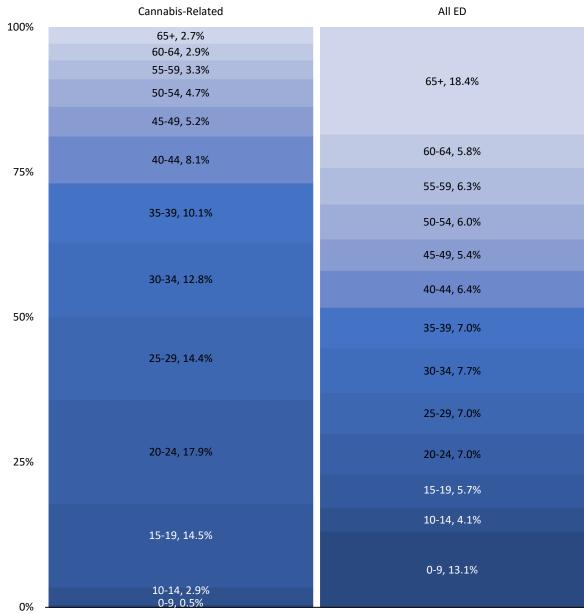
For most age groups, the rate of cannabis-related ED visits was stable between 2021 and 2022. The 15 to 19, 20 to 24, 30 to 34, and 55 to 59 year age groups saw reductions in the cannabis-related ED visit rate over this time. The only group that saw an increase was the 10 to 14 year age group; this trend has been generally upward-moving since 2016. See *Suppl. 2* for detailed data from 2022. See the 2023 cannabis health statistics report² for historical data.



Cannabis-Related ED Visit Rates by Demographics, 2022

Source: CIHEDVD, 2022

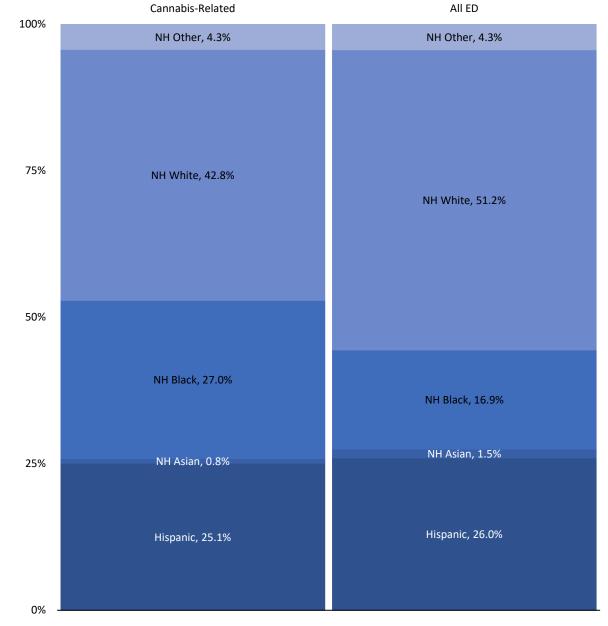
Disparities in cannabis-related ED visit rates by demographics were largely the same as reported in the 2023 cannabis surveillance report². Older teens and younger adults had the highest rates. Age-specific rates tended to decrease after this point. Males continue to have higher rates than females. Non-Hispanic Blacks had the highest rates of any race and ethnicity group and non-Hispanic Asians had the lowest rates. See *Suppl. 2* for detailed data.



Proportion of Total ED Visits by Age Group, Cannabis-Related vs. All ED, 2022

Source: CIHEDVD, 2022

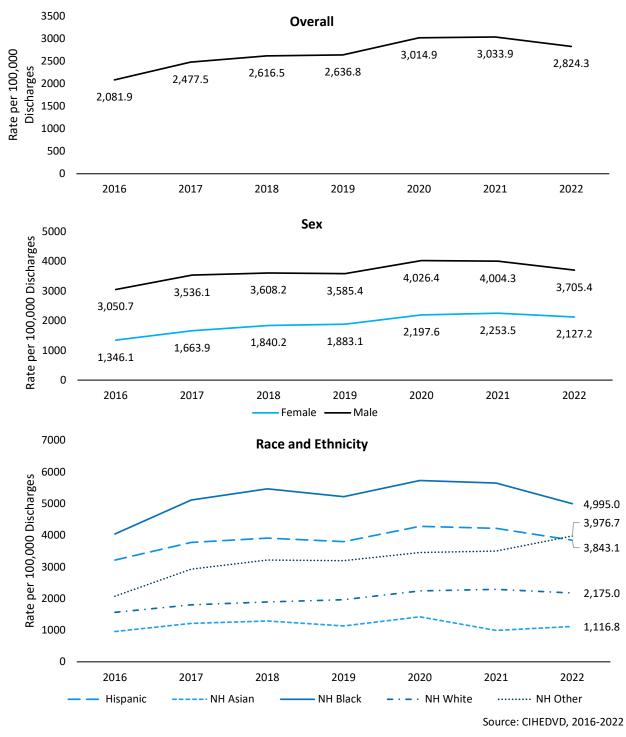
Patients with ED visits related to cannabis tend to be much younger; 15 to 29 year-olds accounted for 19.7% of all ED discharges but this group accounted for 46.8% of all cannabis-related ED discharges. Whereas 65+ year-olds accounted for 18.4% of all ED discharges, they accounted for only 2.7% of cannabis-related ED discharges. See *Suppl. 2* for detailed data.



Proportion of Total ED Discharges by Race and Ethnicity, Cannabis-Related vs. All ED, 2022

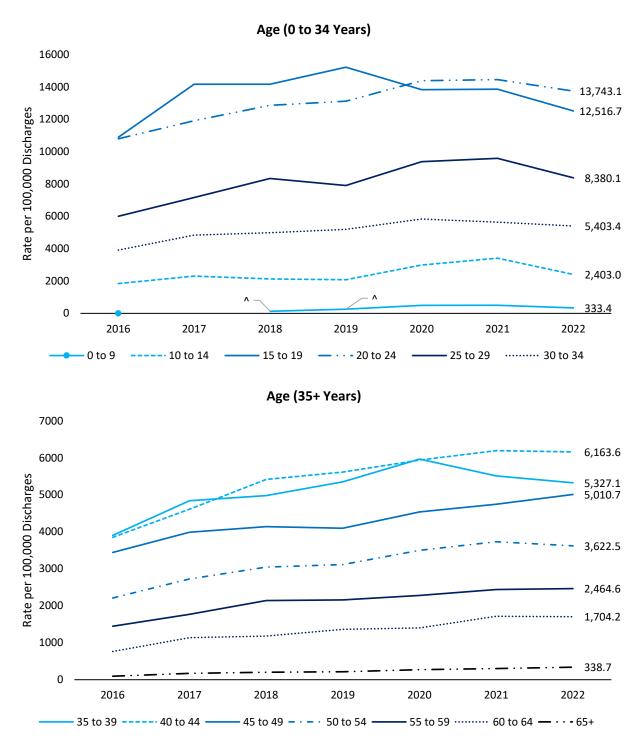
Source: CIHEDVD, 2022

Non-Hispanic Black patients accounted for 27.0% of cannabis-related ED visits compared to 16.9% of all ED visits. Non-Hispanic White patients accounted for 42.8% of cannabis-related ED visits compared to 51.2% of all ED visits. Non-Hispanic Asian patients accounted for 0.8% of cannabis-related ED visits compared to 1.5% of all ED visits. There was little difference in the proportion of cannabis-related vs all ED visits for those who identify as Hispanic or non-Hispanic Other. See *Suppl. 2* for detailed data.



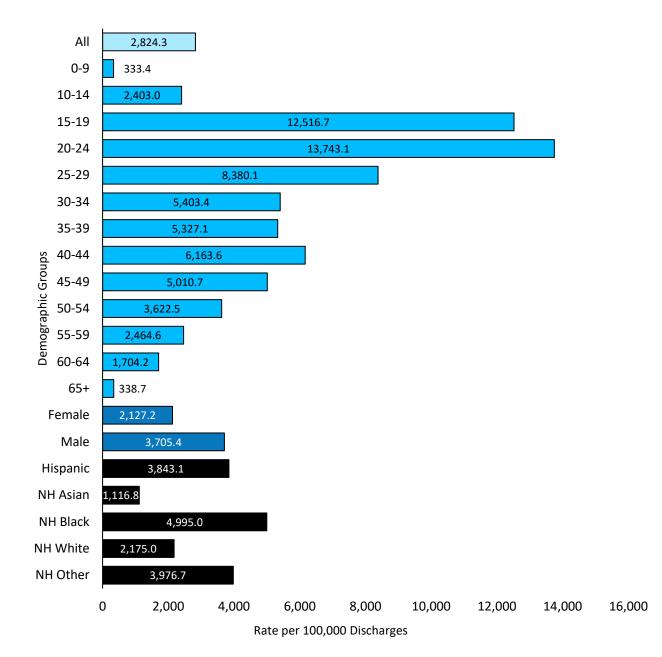
Cannabis-Related Inpatient Hospitalization Rates, 2016-2022

Overall, cannabis-related inpatient hospitalization rates dropped from 2021 to 2022. This was also the case for males but the trend among females was stable. There were clear reductions in this rate among those who identify as Hispanic and non-Hispanic Black, but changes were uncertain among other race and ethnicity groups. See *Suppl. 2* for detailed data from 2022. See the 2023 cannabis health statistics report² for historical data.



Source: CIHEDVD, 2016-2022

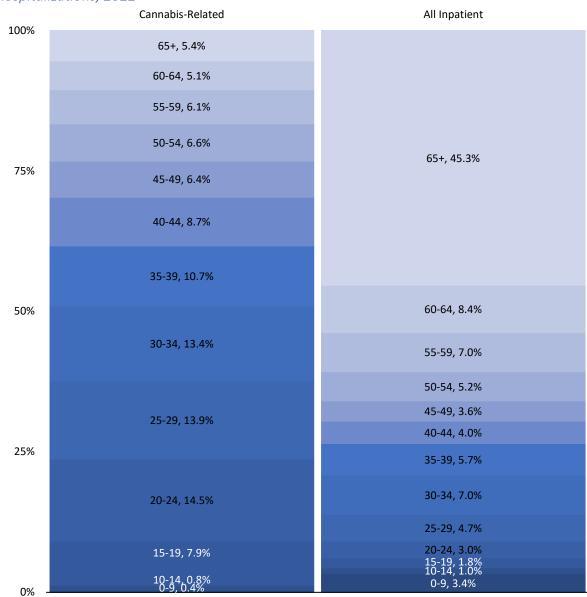
The only age group with a clear change in the cannabis-related inpatient hospitalization rate between 2021 and 2022 was those aged 25 to 29 years. This group saw a small decrease. All other differences between years were too uncertain to draw conclusions. See *Suppl. 2* for detailed data from 2022. See the 2023 cannabis health statistics report² for historical data.



Cannabis-Related Inpatient Hospitalization Rates by Demographics, 2022

Source: CIHEDVD, 2022

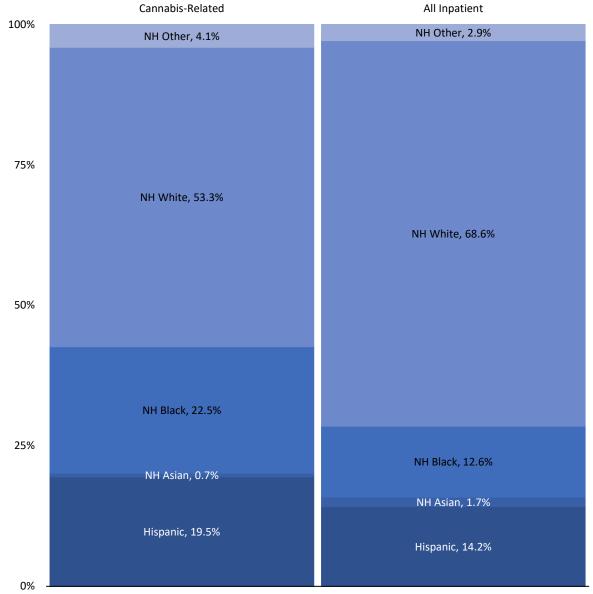
Disparities in cannabis-related inpatient hospitalization rates by demographics were largely the same as reported in the 2023 cannabis surveillance report. Older teens and younger adults had the highest rates. Age-specific rates tended to decrease after this point, though this trend was less consistent among inpatient hospitalization rates than it was among ED visit rates. Males continue to have higher rates than females. Non-Hispanic Blacks had the highest rates of any race and ethnicity group and non-Hispanic Asians had the lowest rates. See *Suppl. 2* for detailed data.



Proportion of Total Inpatient Discharges by Age Group, Cannabis-Related vs. All Inpatient Hospitalizations, 2022

Source: CIHEDVD, 2022

Patients with inpatient discharges related to cannabis tend to be younger; 15 to 39 year-olds accounted for 22.2% of all inpatient discharges but this group accounted for 60.4% of all cannabis-related inpatient discharges. Whereas 65+ year-olds accounted for 45.3% of all inpatient discharges, they accounted for only 5.4% of cannabis-related inpatient discharges. See *Suppl. 2* for detailed data.



Proportion of Total Inpatient Discharges by Race and Ethnicity, Cannabis-Related vs. All Inpatient Hospitalizations, 2022

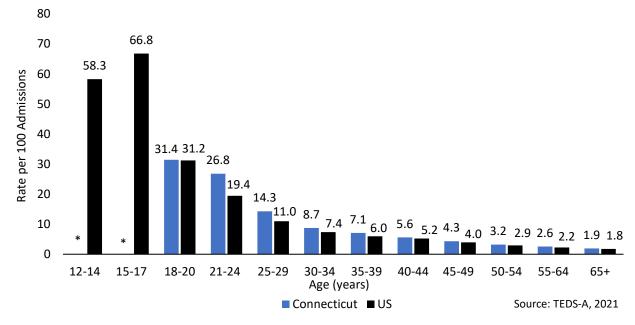
Source: CIHEDVD, 2022

Those who identified as non-Hispanic Other, non-Hispanic Black, and Hispanic accounted for a larger proportion of cannabis-related inpatient hospitalizations than for all inpatient hospitalizations. Non-Hispanic Whites and non-Hispanic Asians accounted for a larger proportion of all inpatient discharges than cannabis-related discharges. See *Suppl. 2* for detailed data.

CIHEDVD Limitations

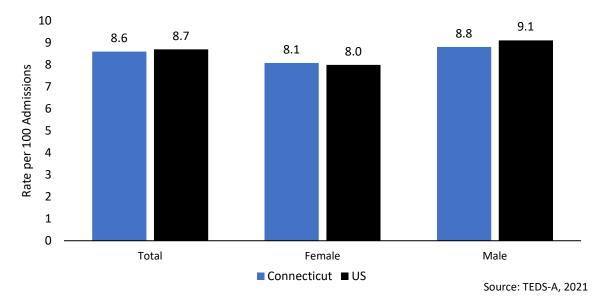
A cannabis-related diagnosis code could be documented in a hospital or ED record because cannabis use precipitated an adverse health event, as a result of routine screening, or because cannabis use was discussed during the visit for some other reason. Though our methodology is limited, it is recommended by the Council for State and Territorial Epidemiologists and is the best process for tracking cannabis-related healthcare burden known to CFHPB Epidemiology Unit staff¹¹. Additionally, the COVID-19 pandemic may have affected patterns in hospital and ED usage, and trends from 2020 onward should be interpreted with caution.

Substance Use Treatment Admissions: Treatment Episode Data Set-Admissions (TEDS-A) The Substance Abuse Mental Health Services Administration receives admissions data collected by state agencies from substance use treatment facilities and compiles it into a dataset known as the Treatment Episode Dataset - Admissions (TEDS-A)⁶. This dataset provides demographic and clinical data included in admission records for individuals aged 12 years and older, including primary substance of use at time of admission. Some of the rates shown are suppressed (*) due to small sample size.



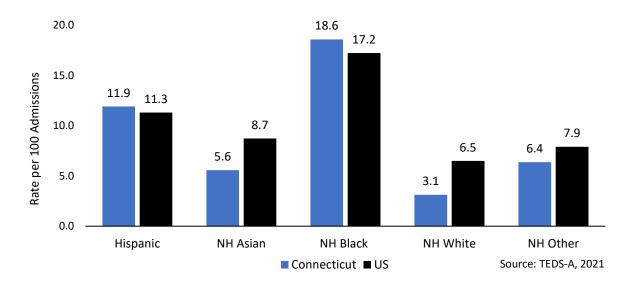






Females and males had similar crude rates of admissions in Connecticut and nationwide.





There were some disparities in rate of admissions between race and ethnicity groups, with the highest rates among Non-Hispanic Black individuals (18.6 per 100).

TEDS-A Limitations

The TEDS-A dataset includes detailed data on admissions, not individual people, from facilities that receive public funding. The data coverage varies by state depending on state funding and licensing. All data are cross-sectional, so causation between demographic and cannabis substance use visits cannot be established.

Conclusion

This report relied on a variety of data sources to describe cannabis use and related health outcomes in Connecticut. Analysis of these data re-emphasized trends discussed in the previous year's report² and uncovered several new findings.

Overall, the prevalence of adult cannabis use in Connecticut increased from 2021 to 2022. One half of adult past month cannabis users report they use cannabis nearly every day. Although there are several strong predictors of adult cannabis use generally (e.g., age, mental health status, disability status, smoking status, drinking behavior), there were few characteristics that distinguished heavier cannabis users from less-frequent users.

There were several disparities in cannabis use by age. Young adult residents continue to report low perceived risk from cannabis use, use it frequently, and experience higher rates of cannabis-related adverse health outcomes; however, they also report that they think about or attempt quitting cannabis at a higher rate than adults in older age groups. Overall, rates of cannabis-related ED visits and inpatient hospitalizations decreased from 2021 to 2022. Cannabis-related ED visit rates decreased or remained stable in all age groups except among 10 to 14 year-olds, whose rate has been generally upward-moving since 2016.

Some demographic groups discussed in the 2023 report² continue to have disparities in cannabis use and related risky behaviors and adverse health outcomes. Non-Hispanic Black residents continue to have the highest rates of cannabis-related ED visits and inpatient hospitalizations of any race and ethnicity group.

This year's report also highlights potential concerns regarding driving under the influence of cannabis. One in five adult past month cannabis users report driving within three hours of using cannabis. Additionally, while retail stores or medical dispensaries are the usual source of cannabis for more than half of Connecticut past month cannabis users, other sources such as "bought from a friend" are prominent.

Next Steps

Some topics of interest were not addressed in this legislative report due to limited data availability and the ongoing development of epidemiological methods. These topics include cannabis use and related health outcomes among high school students and pregnant women and cannabis hyperemesis syndrome. Data from the Youth Risk Behavior Surveillance System (YRBSS) is administered in odd years and no new data has been released since the last report². The Pregnancy Risk Assessment Monitoring Systems (PRAMS) did not include cannabis-related questions in its most-recently available dataset – this data will be included in the 2025 report. Statistics on cannabis hyperemesis syndrome will be included when the methodology for tracking such events is fully developed and validated.

Per legislative mandate, DPH staff will continue to provide cannabis data and statistics on adverse health events, demographic risk factors, and trends related to cannabis consumption in Connecticut. Suggestions for additional research questions or potential sources of data to be included in future reports are welcomed. To send a comment, suggestion, or question, please complete the form linked on the Cannabis Health Statistics page of the DPH website.

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