MMCPS-24

MCA MARYLAND CANNABIS ADMINISTRATION

Maryland Medical Cannabis Patient Survey Report 2024

Prepared for
Maryland Cannabis Administration

Prepared by
Cannabis Public Policy Consulting

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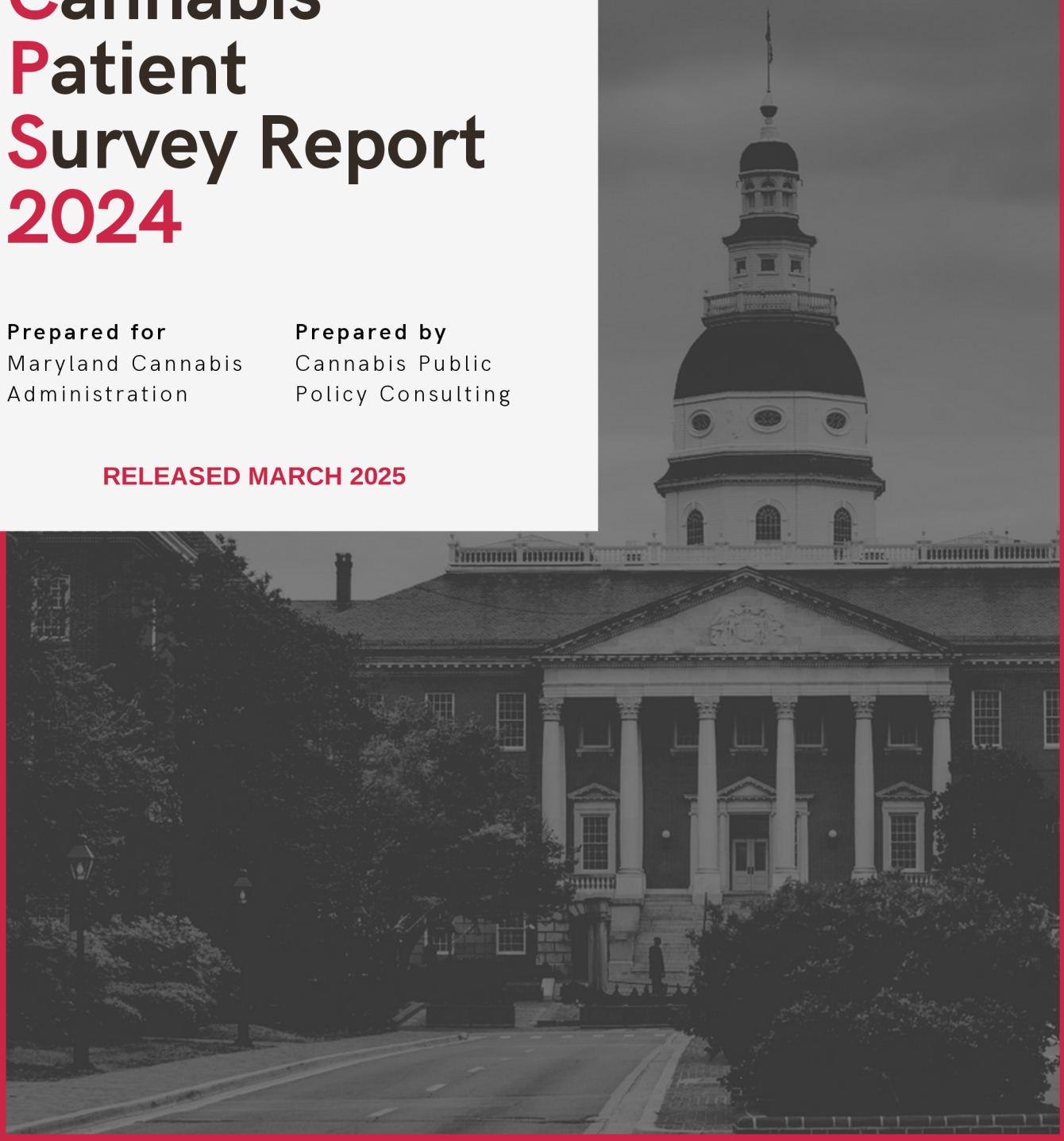

The Maryland Cannabis Administration (MCA), the successor agency to the Maryland Medical Cannabis Commission (MMCC), sponsored this survey and report from Cannabis Public Policy Consulting (CPPC). This is MCA's third annual survey of its medical cannabis patients. The first survey was conducted in the fall of 2022, just ahead of a ballot referendum where Maryland voters approved expanded cannabis legalization to adults 21 and older beginning July 1, 2023. The second survey took place in the fall of 2023, right after legal adult-use sales started, which offered a first look at changes in patient perceptions and behaviors after legalization. This most recent survey was implemented over a one-week period in October 2024 ("MMCPS-24"), 15 months after legal adult-use cannabis sales began in Maryland. Responses were collected from more than 12,000 certified patients ages 18 and older. The MMCPS-24 builds on findings in prior cycles, with a particular eye to patient perceptions and interactions with the medical program more than one year after expanded legalization of cannabis in Maryland for adults 21+. This report details changes in program interactions and opportunities to continue to improve the medical program, as well as the continued monitoring of key patterns of use and risk behaviors to inform public health and safety protection efforts.

For questions about this document, please contact publichealth.mca@maryland.gov

NOTHING IN THIS REPORT IS INTENDED AS MEDICAL ADVICE

CANNABIS PUBLIC POLICY CONSULTING

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Executive Summary

The size of the medical program has decreased, which is a trend seen in other states following adult-use legalization; however, those who remain in the program by and large report continued cannabis usage for medical purposes. This is evidenced by the growing percentage of respondents using cannabis exclusively for medical purposes, which increased from 64% in 2022 to 74% in 2024. Additionally, most respondents (92%) indicated their intent to remain in the medical program, despite the overall decline in patient enrollment.

A primary goal of this survey is to understand and enhance patients' experiences in the medical cannabis program. Patients continue to report a high degree of confidence in the safety of medical cannabis products purchased in licensed dispensaries, with 94% reporting very or somewhat high confidence. The most frequently used features that distinguish certified patients from adult-use were access to medical-only products and patient-only lines or hours in dispensaries. Just over half of respondents expressed that increased availability of low THC products would provide at least a little improvement in their patient experience. Many patients also said their experience could be improved with additional accommodations in dispensaries (e.g. ramps, automatic doors, and/or larger print resources, as well as greater availability of Clinical Directors during business hours.)

Patients reported overall low utilization of Clinical Directors. Fewer than half of patients reported ever meeting with a Clinical Director, whether in-person or by phone or video chat. Clinical Directors were a primary source of information for just 7-11% of respondents on assorted medical cannabis topics. This could be due to the fact that nearly 1 out of 3 respondents reported that they were unaware that this service existed. Despite low engagement rates, patients who did engage with Clinical Directors expressed satisfaction with the information provided. Over 70% of respondents expressed interest in having Clinical Directors always available during standard business hours. Currently, just 4% of respondents ranked Clinical Directors as the most important factor for staying in the medical program.

Most respondents (62%) reported completing their MCA medical patient registration without assistance. However, survey responses indicate that 40% of patients may be unclear about the distinction between their patient registration status (renewed every six years) with MCA and their required

annual provider recertification. This confusion may stem from terminology changes in MCA policies, as evidenced by the high volume of related questions received by MCA staff. Recommendations to reduce patient confusion and minimize burden on MCA staff include using consistent terminology across all program materials, encouraging certifying providers to educate patients about the annual certification process and its distinction from the registration timeline, and refining MCA FAQs and tools to address common questions about registration and provider certification processes.

The majority (84%) of respondents expressed interest in a helpline to access professional clinical guidance on medical cannabis topics. Respondents were most interested in advice on different cannabis products and strains for specific, qualifying medical conditions.

Patterns of medical cannabis use have remained consistent after a full year of adult-use cannabis legalization, including certification for qualifying conditions, monthly use frequency, and median THC dose per use. In 2023 and 2024, edibles were the most frequently used method by patients in the past month.

Most respondents reported 'no change' since adult-use legalization in the availability or price of the medical cannabis they typically purchase. About 20% have purchased cannabis as an adult-use consumer (e.g., without utilizing their medical certification at the point-of-sale) and among them, 15% did so because they had exceeded their monthly allotment.[1] Given the relatively high allotment limit, combined with respondents reporting a high average THC dose per use, this finding raises concerns about potential health risks, adverse effects, and cannabis use disorder (CUD). Education on use of the lowest effective THC dose as well as information on cannabinoid and terpene profiles may be beneficial. Certifying providers may also play a role in promoting lower THC dosages as respondents who consulted their certifying provider with greater frequency (e.g., more than twice per year) tended to report lower THC doses per use occasion.

When asked about the potential of on-site consumption establishments for the first time, respondents expressed interest in this topic, especially among younger adults. It is important to note, however, that greater interest in consumption lounges was observed among respondents who had lower negative risk perceptions about the dangers of driving under the influence of cannabis. Education about the hazards of driving while under the influence of cannabis (DUIC) and the importance of utilizing sober drivers (e.g., designated drivers, rideshare services) should be prioritized to reduce risks of harms potentially associated with cannabis use at a consumption lounge.

[1] The standard monthly allotment limit for certified patients is 4.0 ounces (120 grams) of flower or equivalent in other products; however, a provider may certify a patient for more or less than the standard allotment.

Increased driving under the influence of cannabis (DUIC) reported by respondents continues to be observed following adult-use legalization. DUIC rates initially doubled from 18 to 39% between 2022 to 2023, then dropped slightly between 2023 to 2024 surveys (from 39 to 34%). Continued point-of-sale and public education is warranted to further reduce DUIC rates.

No change was noted in the rate of cannabis use disorder (CUD) in the year since adult-use legalization, with about a third of medical patients meeting the criteria, consistent with prevalence reports in related literature.[2] Notably, satisfaction with information on CUD was lower among people with higher CUD scores, indicating a major gap area and opportunity for improving information on CUD and treatment resources. This could be addressed through point-of-sale materials as well as through a medical cannabis helpline resource, as described above.

Respondents with children under the age of 18 in the home were more likely to store their cannabis in a locked location, and they smoked and/or vaped cannabis inside their house less often than those without children in their household. These findings did not differ by primary cannabis consumption method (i.e., smoking vs edibles) and were overall consistent with findings from the 2023 survey. Continued education is recommended to prevent accidental ingestions in kids, and to protect them from cannabis smoke and vape emissions.

Patients reported generally high levels of comfort in speaking to others (i.e., friends, family, primary care providers (PCPs), and other healthcare providers) about their use of cannabis, a finding consistent with the 2023 survey. Age-related differences were identified, such that younger respondents reported greater comfort in speaking with their friends about their cannabis use compared to all other categories, whereas older respondents reported lowest comfort in discussing their cannabis use with friends and greatest comfort discussing cannabis use with their PCP.

Respondents consistently rated the following as top public education topics each survey year: mental health (#1); education for healthcare providers about cannabis use (#2); and potency, dosage, and delayed onset of products (#3). In the present survey, respondents were most interested in education about cannabis' potential benefits to mental health, especially those who rated their mental health as "fair" or "poor." However, given risks to mental health reported in the research literature, we strongly recommend public education includes both potential benefits and risks to mental health to provide cannabis consumers with a well-rounded understanding of cannabis' potential impacts on mental health as a whole.

[2] Hasin DS, Saha TD, Kerridge BT, et al. Prevalence of Marijuana Use Disorders in the United States Between 2001-2002 and 2012-2013. JAMA Psychiatry. 2015;72(12):1235–1242. doi:10.1001/jamapsychiatry.2015.1858

Definitions and Acronyms

Cannabis flower/Flower — the smokable part of the cannabis plant

CBD — cannabidiol

Certified patient — an individual who has met their medical provider's criteria for treatment with medical cannabis and for whom the provider has issued a certification

Clinical Director — an individual registered with the MCA to provide guidance to medical cannabis patients on specific topics including drug interactions, side effects, contraindications, strengths and effects of medical cannabis strains and methods, forms and routes of medical cannabis administration

Concentrate — a cannabis product that is a highly concentrated form of cannabis, including dabs, wax, shatter, resin, and Rick Simpson Oil

Consumption — using cannabis products

Correlated — having a mutual relationship or connection

CUD— Cannabis Use Disorder

CUDIT— Cannabis Use Disorder Identification Test

Descriptive characteristics — a summary statistic that quantitatively describes or summarizes features from our sample

Dose — a quantity of cannabis products taken or recommended to be taken at a particular time, measured in mg/THC by combining the quantity and THC potency of cannabis consumed per sitting

DUIC — driving under the influence of cannabis; driving within 3 hours of consuming cannabis or while under the influence of cannabis

Edibles — food products infused with cannabis extract

Inferential findings — findings where statistical analysis was performed to identify and examine statistical relationship between variables and outcomes of interest

Medical cannabis use — cannabis used to relieve the symptoms of a medical condition

MCA — Maryland Cannabis Administration

MMCC — Maryland Medical Cannabis Commission

MMCPS — Maryland Medical Cannabis Patient Survey

Patients — people registered and certified to use medical cannabis in Maryland

Polysubstance use — the use of more than one substance, including but not limited to alcohol and opioids

Principal investigator — the individual responsible for the preparation, conduct, and administration of the study

Problematic use — a problematic pattern of cannabis use leading to clinically significant impairment or distress

PTSD — post-traumatic stress disorder

Qualifying conditions — cachexia, anorexia, wasting syndrome, severe or chronic pain, severe nausea, seizures, severe or persistent muscle spasms, glaucoma, PTSD, or another chronic medical condition that is severe and for which other treatments have been ineffective and the symptoms reasonably can be expected to be relieved by the medical use of cannabis

Nonmedical cannabis use — cannabis used for anything other than to relieve the symptoms of a medical condition

Registration — required medical cannabis patient documentation with the Maryland Cannabis Administration that is good for six years.

Respondents — Maryland medical cannabis patients who completed the MMCPS surveys

THC — Tetrahydrocannabinol

Vaping — the action of inhaling and exhaling aerosolized cannabis concentrate

Section 1. Research Methodology

1.1 Research Methods

The MMCPS-24 launched on Thursday, October 10, 2024, at 9:00 a.m. ET on the Qualtrics web survey platform. All active, certified medical patients over age 18 were invited to complete the survey, and patient participation was voluntary. An invitation to participate in the survey was sent to 107,391 email addresses (provided to MCA by patients during registration) through the Qualtrics distribution tool, with 1.8% (1,950) of the emails bouncing back. The survey was open and collected responses for seven days. This timeframe was determined by two main goals: 1) to keep the survey open for about one week to provide patients with sufficient opportunity to provide feedback, and 2) to collect a similar number of complete responses as the MMCPS-22 and MMCPS-23 (i.e., approximately 13,000 to 16,000, respectively). The survey closed at 2:00 p.m. ET on Thursday, October 17. Of the 18,451 patients who initiated the survey, 775 were excluded due to failing Qualtrics' fraud detection measures (e.g., bot detection, duplicate responses), 1,242 were excluded for incorrectly answering a basic attention check question, 4,548 were excluded for exiting the survey before completion, and 253 were excluded for not meeting study requirements (e.g., reporting an age below 18 years or declining consent). In total, 6,174 participants were removed, resulting in a final study sample of 12,277 participants.

1.2 Respondent Demographic Characteristics

For a complete review of demographic distributions, refer to Appendix B of the report. Select demographic characteristics of the 2022, 2023 and 2024 survey samples are summarized in Table 1. A majority of respondents in the 2024 survey sample were female (57%), White (79%), and between the ages of 36 and 45 (21%). Nearly one-quarter of the participants received a bachelor's degree (23%), and an additional third had completed some college or received an associate's degree (33%). Most respondents were employed full-time (49%), while 27% were retired. The median annual household income for respondents in this sample was $62,500. The counties with the highest representation were Baltimore County (16%) and Montgomery County (12%; see Figure 1). The median length of time that respondents had been in the medical cannabis program was 4 years. Furthermore, the sample consisted of 101 (0.8%) pregnant and/or breastfeeding respondents, and nearly all (96%) survey respondents had active, current health insurance at the time of the survey. Demographic characteristics between the 2022, 2023, and 2024 samples matched by 99% on average, which strengthens our confidence in the findings presented throughout the report, particularly when data across survey years are compared or compiled. Moreover, the samples matched the demographic characteristics (age, race, and county of residence) of the 2024 actual patient population by 98% on average, which strengthens our confidence in the generalizability of the survey findings to the full patient population.

Table 1. Select Demographic Distributions from the 2022, 2023 and 2024 Survey Samples, and the Actual 2024 Patient Population

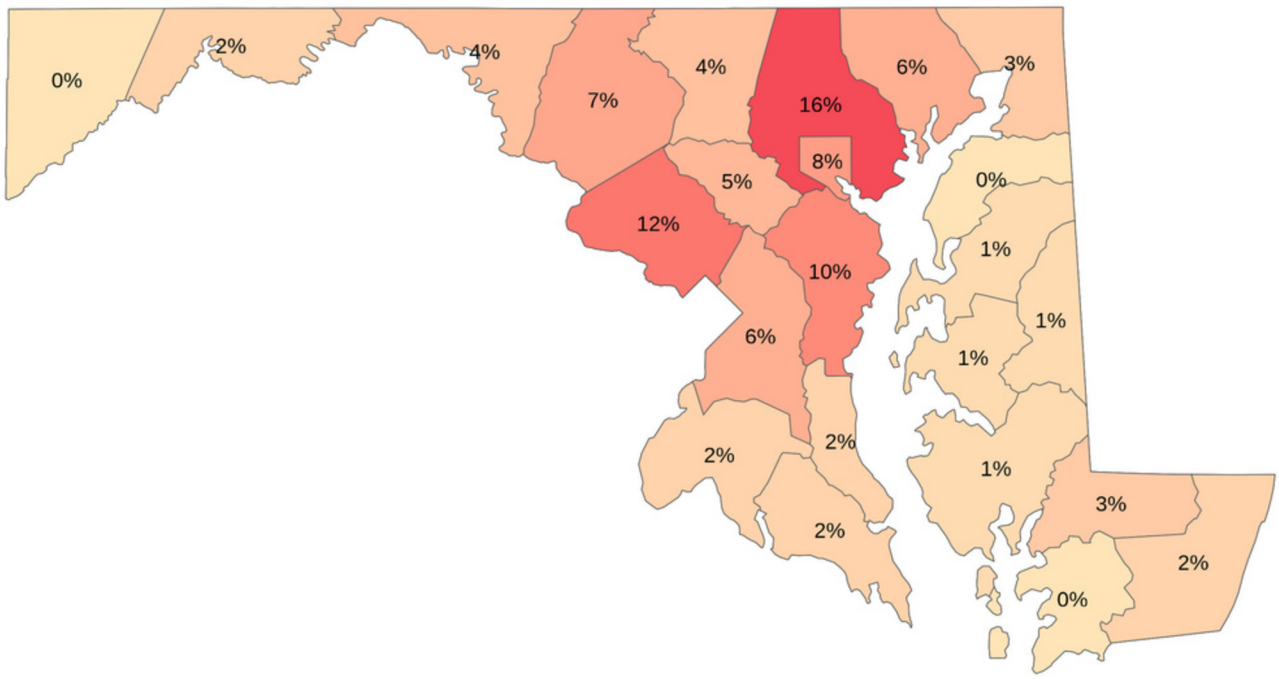
	2022 Sample (N=13,011)	2023 Sample (N=16,448)	2024 Sample (N=12,277)	2024 Patient Population (N=107,391)
Age				
18 to 25	6.8%	4.7%	3.8%	6.9%
26 to 35	20.6%	15.7%	13.0%	18.6%
36 to 45	24.1%	21.5%	21.0%	23.0%
46 to 55	17.3%	17.5%	19.0%	17.9%
56 to 65	17.0%	20.1%	20.0%	17.2%
66 or older	14.3%	20.6%	22.0%	16.4%
Race				
American Indian, Native American, Alaska Native	0.5%	0.6%	1.3%	0.4%
Asian	1.8%	1.2%	1.5%	1.3%
Black or African American	14.7%	16.1%	16.9%	18.5%
Native Hawaiian or other Pacific Islander	0.1%	0.2%	0.2%	0.1%
White	78.9%	75.5%	79.0%	67.5%
Two or more races	2.6%	3.5%	1.0%	3.3%
Gender				
Male	43.7%	40.7%	40.0%	51.0%
Female	53.8%	56.7%	57.0%	49.0%
Transgender female	0.2%	0.2%	0.1%	--

	2022 Sample (N=13,011)	2023 Sample (N=16,448)	2024 Sample (N=12,277)	2024 Patient Population (N=107,391)
Transgender male	0.3%	0.2%	0.4%	--
Nonbinary	1.2%	1.2%	1.5%	--
Not included above	0.1%	0.1%	0.1%	--
Prefer not to answer	0.8%	0.9%	0.8%	--
Annual Household Income				
	$62,500	$62,500	$62,500	--
Education				
High school diploma or equivalent	16.4%	17.4%	17.0%	--
Some college, associate's degree	32.1%	32.8%	33.0%	--
Bachelor's degree	24.9%	23.4%	23.0%	--
Graduate degree	19.4%	19.3%	20.0%	--
None of the above	7.2%	7.1%	7.3%	--
County				
Allegany County	2.0%	2.0%	1.7%	1.9%
Anne Arundel County	11.0%	11.0%	10.0%	11.6%
Baltimore City	9.0%	9.0%	8.3%	8.0%
Baltimore County	18.0%	17.0%	16.0%	16.6%
Calvert County	2.0%	2.0%	1.9%	1.8%
Caroline County	1.0%	1.0%	0.8%	0.8%
Carroll County	4.0%	4.0%	4.3%	4.3%
Cecil County	2.0%	3.0%	3.0%	2.6%

	2022 Sample (N=13,011)	2023 Sample (N=16,448)	2024 Sample (N=12,277)	2024 Patient Population (N=107,391)
Charles County	2.0%	2.0%	2.0%	2.1%
Dorchester County	1.0%	1.0%	0.9%	1.1%
Frederick County	6.0%	6.0%	6.7%	6.4%
Garrett County	1.0%	0.4%	0.5%	0.4%
Harford County	6.0%	6.0%	6.0%	6.1%
Howard County	5.0%	5.0%	5.4%	5.2%
Kent County	0.3%	0.4%	0.5%	0.4%
Montgomery County	13.0%	12.0%	12.0%	11.6%
Prince George's County	6.0%	6.0%	6.1%	6.5%
Queen Anne's County	1.0%	1.0%	1.4%	1.3%
Saint Mary's County	0.0%	2.0%	1.7%	1.7%
Somerset County	2.0%	0.0%	0.4%	0.4%
Talbot County	1.0%	1.0%	1.0%	1.0%
Washington County	3.0%	3.0%	3.5%	3.3%
Wicomico County	3.0%	2.0%	2.8%	2.8%
Worcester County	2.0%	2.0%	2.1%	2.0%

' -- ' indicates that no data was available.

Figure 1. MMCPS-24 Respondent Distribution by Maryland County



Section 2. Program Interactions

2.1. How has participation in the medical program changed in the year since expanded legalization?

Findings from all the MMCPS years indicate patients' growing interest in remaining in the medical cannabis program. When asked if they plan to remain in the program by renewing their certification, 62% of respondents said "Yes" in 2022, increasing to 87% in 2023, and reaching 92% in 2024 (see Figure 2 below). However, these findings contradict the actual MCA data on the count of active medical cannabis patients in the program, suggesting that those participating in the surveys are more engaged with the medical program. Figure 3 shows the monthly patient count from January 2021 to October 2024. From January 2021 through October 2022, the patient count grew rapidly, with an average increase of about 1,800 new patients each month. After voters approved the adult-use cannabis ballot measure in November 2022, growth slowed, with the patient count averaging around 600 new patients per month from November 2022 to June 2023, when registered patient levels reached their highest at 163,935.[3] When the adult-use market opened in July 2023, the patient count began to decline, decreasing by an average of 3,700 patients per month between July 2023 and October 2024. The trend in MCA's patient count mirrors that of other states' medical cannabis programs. A study analyzing medical cannabis enrollment from 2016 to 2020 found that five out of seven states with legal adult-use cannabis experienced a decline in patient enrollment.[4] For reference, Figure 3a depicts patient count trends in the 24 months prior to- and 36 months following the introduction of adult-use cannabis sales in four states: Arizona, New Mexico, Maryland, and Colorado. In all states except Colorado, patient counts increased rapidly until the onset of adult-use sales, after which they began to decline. Colorado's medical program maintained stable patient counts during the timeframe shown; however, in more recent years (beyond the scope of the graph), patient numbers have significantly declined. These trends confirm that MCA is undergoing the natural evolution of a medical cannabis program, as a portion of patients gradually transition to the adult-use market, which offers fewer barriers and competitive product pricing.

[3] https://cannabis.maryland.gov/Pages/Data.aspx
[4] https://pmc.ncbi.nlm.nih.gov/articles/PMC10233658/

Figure 2. Do you plan to remain in the medical cannabis program by renewing your certification?

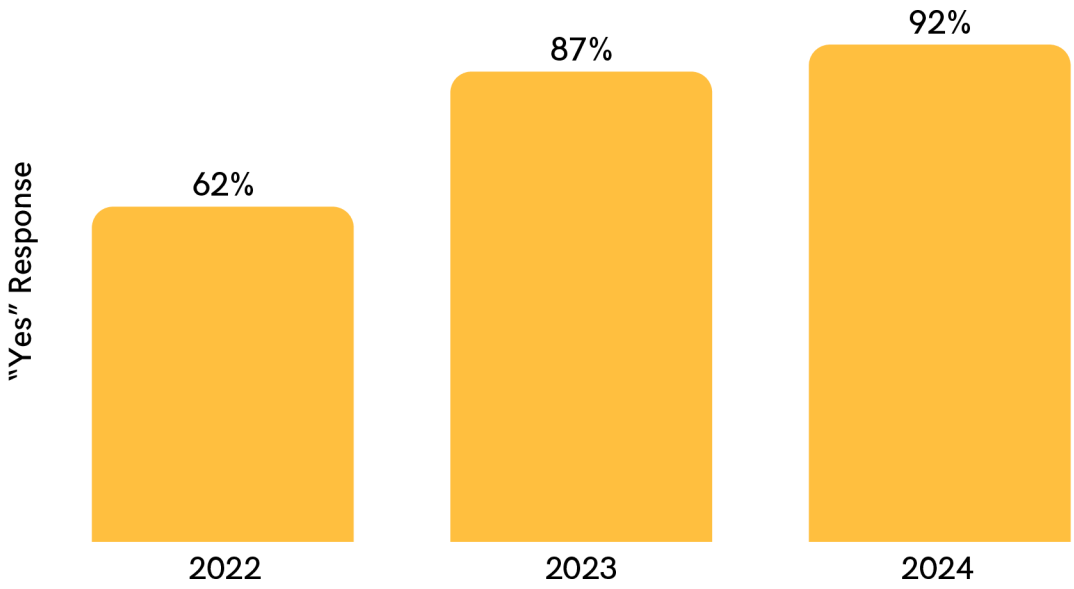


Figure 3a. Monthly Count of Active Medical Cannabis Patients in the MCA Program: 2021 to Present

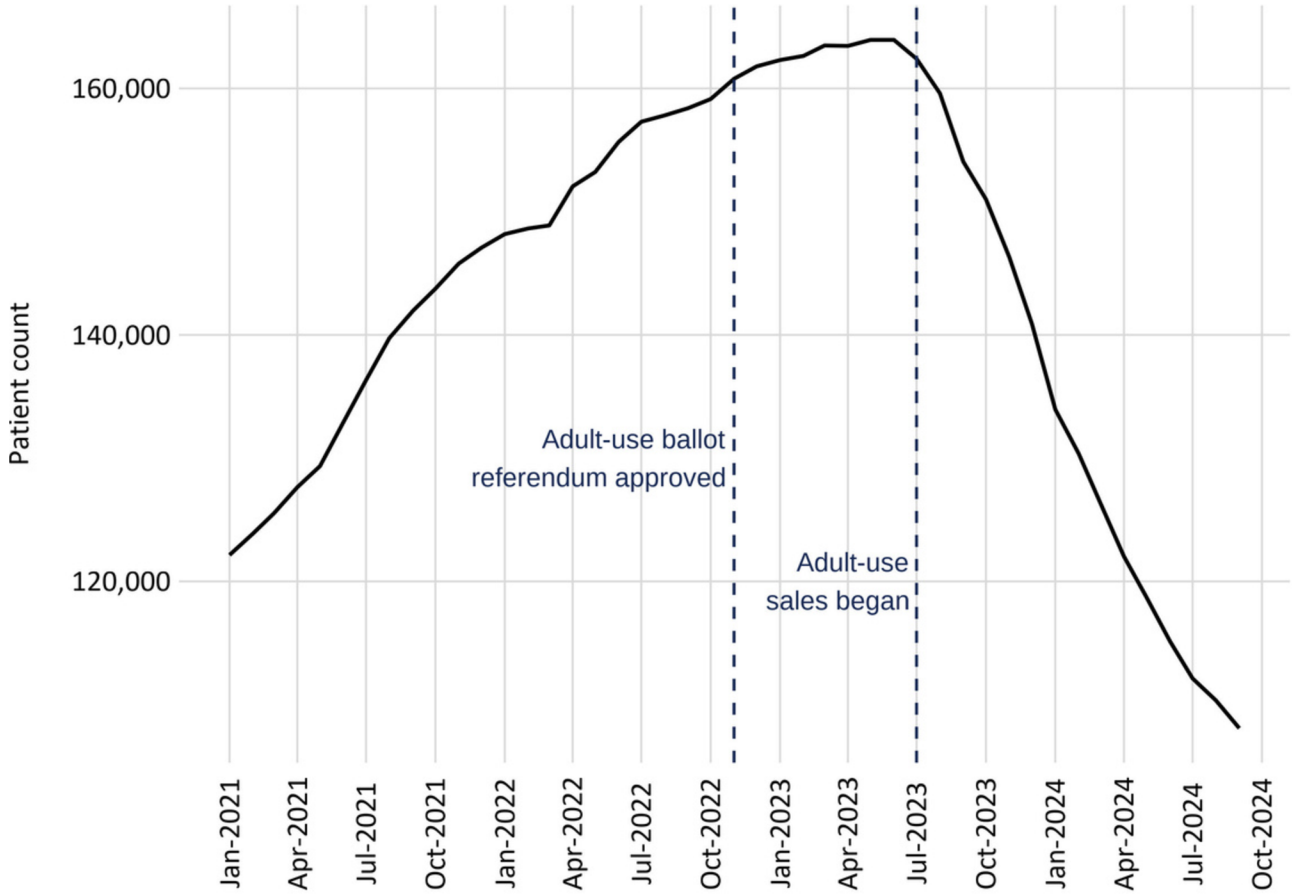
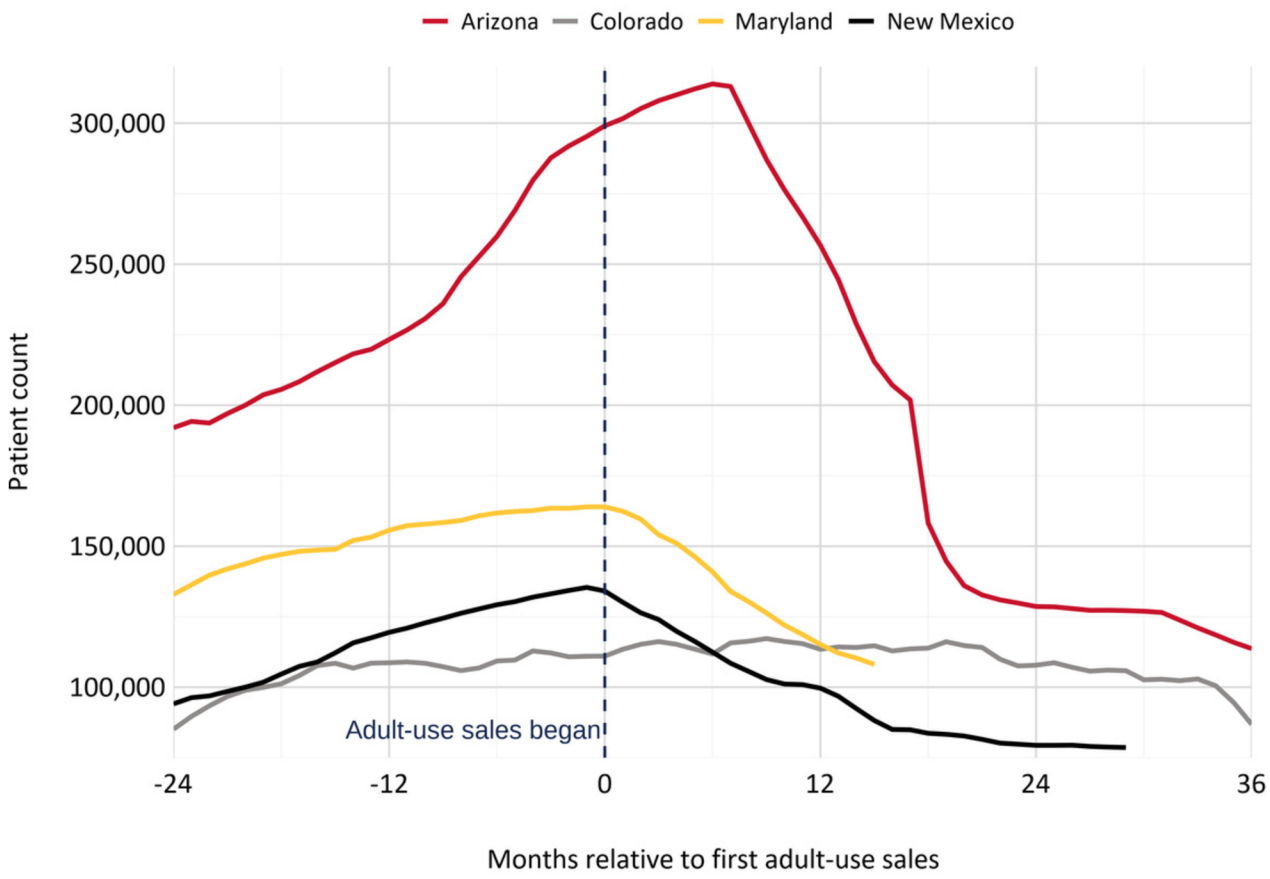


Figure 3b. Medical Cannabis Patient Count Trends in the Months Prior to and Following Adult-use Legalization



A primary goal of the MMCPS is to assess patients' experiences in the medical cannabis program. To achieve this, in the 2023 and 2024 surveys, participants were asked to rank the reasons they remain in the program, helping identify the most important program elements for patients. See Table 2. Between the two survey years, the most important reasons were: the availability of higher potency products; the benefit of having no sales tax; patient-only lines or hours; and wider availability of strains and products. Frequency of use was statistically significantly higher among respondents planning to remain in the medical program, averaging 23 days per month, compared to 16 days per month for those intending to leave. The dose (mg/THC) per use did not differ significantly between the groups, indicating that individuals planning to stay in the program likely consume larger overall quantities of the product. This further supports the finding that the tax-free benefit provided by the medical program may be a key factor influencing patients' decision to remain enrolled, since it would help them to save money since they are likely consuming larger quantities on a more frequent basis. Note that in the 2023 survey, "wider availability of

strains and products" was the most important reason for 34.2% of the sample. Recognizing its significance to the patient population, we removed this factor in 2024 to introduce new considerations, and thus the 2023 and 2024 responses should be compared with that in mind.

Table 2. Percentage of Respondents Ranking Each Factor as the Top Reason for Remaining in the Medical Cannabis Program

	2023	2024
Higher potency of products	12.5%	38.0%
Tax benefit	18.8%	26.0%
Patient-only lines or hours	10.3%	13.0%
Patient-only product discounts at dispensaries	n.d.	6.7%
Education (Clinical Directors)	3.4%	4.1%
Stronger legal protections	11.1%	3.8%
Access to delivery services	1.6%	3.1%
Higher possession/purchase limits	1.6%	2.8%
Other	3.3%	2.0%
Lower age restrictions	0.5%	0.8%
Wider availability of products and strains*	34.2%	n.d.

n.d. = no data collected in that survey year

*In 2023, "wider availability of strains and products" was the most important reason. Recognizing its significance to the patient population, we removed this factor in 2024 to introduce new considerations.

Respondents who selected "No" to the question about whether they plan to remain in the medical program were prompted with a follow-up multiple-choice question to identify their primary reason for leaving. The response options and their distributions are shown in Table 3. Common reasons for leaving included the costs associated with annual recertification (22%) and concerns about purchasing or possessing a firearm (18%). However, the majority (34%) selected the "Other, please specify" option. Among those who provided a response in the open text field, common reasons for departure included quitting or significantly reducing cannabis consumption

(31%) and not finding medical cannabis effective for their condition (16%, see Table 3a). Concerns over purchasing or possessing a firearm also appeared in a small number of qualitative responses to the “Other, please specify” category, suggesting that respondents did not see that option in the original question, or they may have wanted to provide additional details.

Table 3. What is the primary reason you plan to leave the medical program?

	2023	2024
Other, please specify:	10.9%	34.0%
Cost of annual recertification from a certifying healthcare provider	37.7%	21.8%
Concern over purchasing/possessing a firearm (medical cannabis patients are prohibited from purchasing/possessing firearms)	11.6%	18.4%
The products I use are sold on the adult-use market (don't require a medical card)	26.2%	12.9%
Higher cost of medical cannabis products	5.6%	4.1%
The amount of paperwork/ administration in the medical program (e.g. the registration, certification, and card process are burdensome/confusing)	4.3%	4.8%
I prefer anonymity of adult-use market	3.6%	4.1%

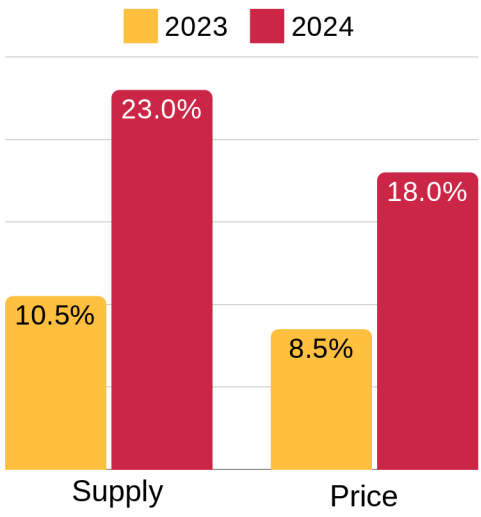
Table 3a. Themes in the open text responses among those who responded "Other" reason for leaving the medical program

Theme	%
Quit or greatly reduced consumption of cannabis	31.0%
Not effective for condition	16.0%
Plan to stay in med program (i.e., incorrectly answered previous question)	11.0%
System issues (with providers, dispensaries, etc.)	8.0%
Moving out of state	7.0%
Plan to use adult-use market	7.0%
Distrust in systems (program, dispensaries, providers, etc.)	7.0%
Concern over purchasing/possessing a firearm	4.0%
Cost-related	2.0%

2.2. How have patient experiences changed in the year since expanded legalization?

A comparison of the 2024 survey responses to those from 2023 reveals improvements in patient experiences. The percentage of respondents who reported improvements in both the supply and pricing of preferred medical cannabis products increased since the launch of adult-use sales. The surveys asked respondents, "How has the legalization of adult-use cannabis affected the supply of the medical cannabis products you typically purchase?" Response options included "Improved", "No change", and "Worsened".

Figure 4. Percent Reporting Improvements in Supply, Price of Cannabis Since Adult-use Legalization: 2023 and 2024 Surveys



The same question was then asked regarding price. There was a 12.5% increase in the number of respondents who selected "Improved" for supply, and a 9% increase in those who selected "Improved" for price (Figure 4).

The frequency of dispensary feature usage since legalization of adult-use cannabis was measured in both 2023 and 2024. Figure 5 presents this data, showing similar use patterns of all features from both surveys. The most frequently used dispensary features were access to medical-only products (62% reporting “All the time”) and patient-only lines or hours (57% reporting “All the time”). The 2024 data was further analyzed by age group to assess differences in feature usage. Figure 6 presents the average frequency overall and broken down by age group. Averages were calculated using coded values: Never = 0, Sometimes = 1, Usually = 2, and All the time = 3, with horizontal lines indicating the overall average, independent of age. Respondents aged 21-45 tended to be the highest users of all features, while those aged 86+ reported higher-than-average usage of Clinical Directors and access to medical-only products (note: the 86+ group included only 18 respondents).

Figure 5. Frequency Using Dispensary Features Since Legalization of Adult-use Cannabis: 2023 and 2024 Survey Data

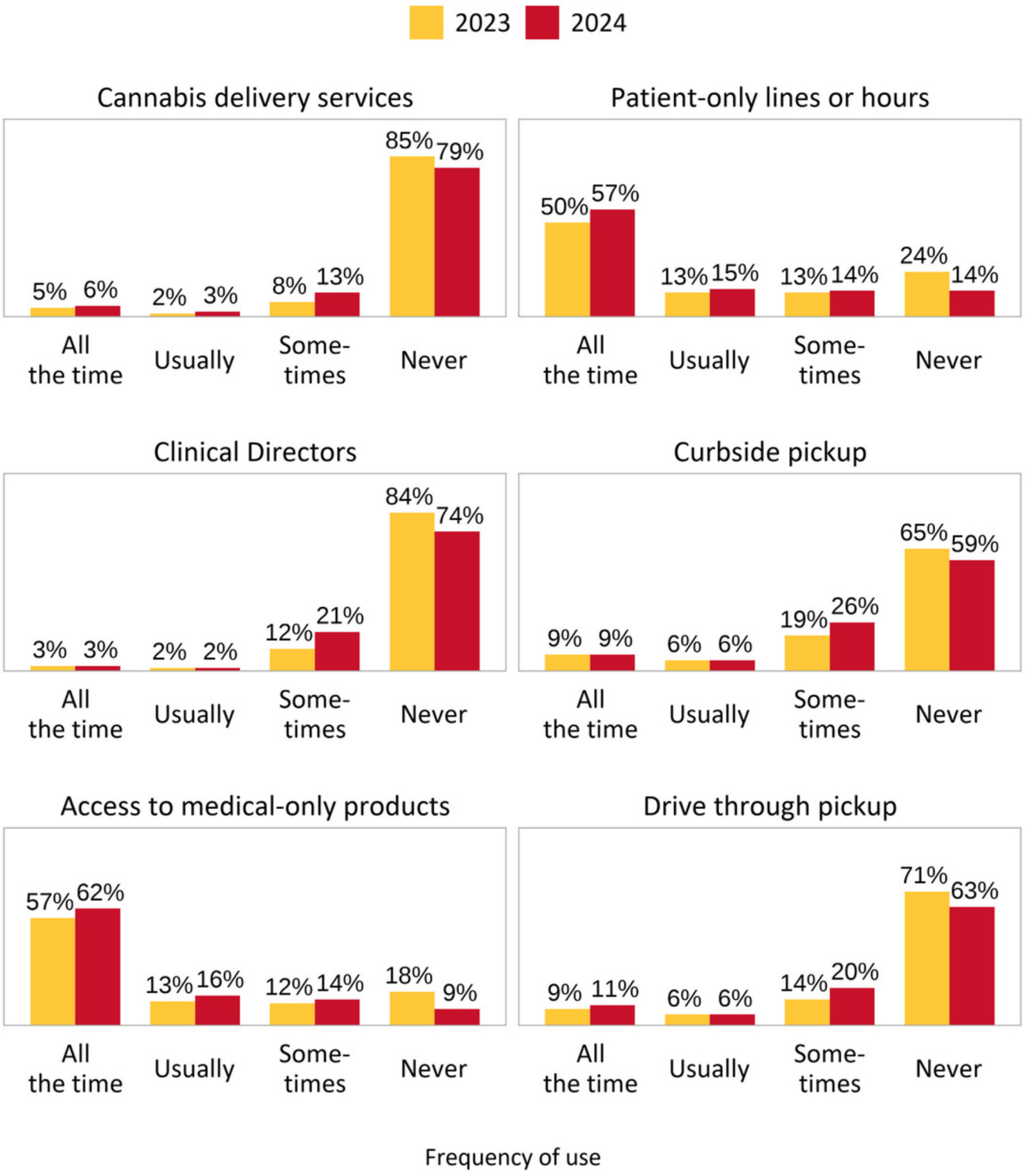
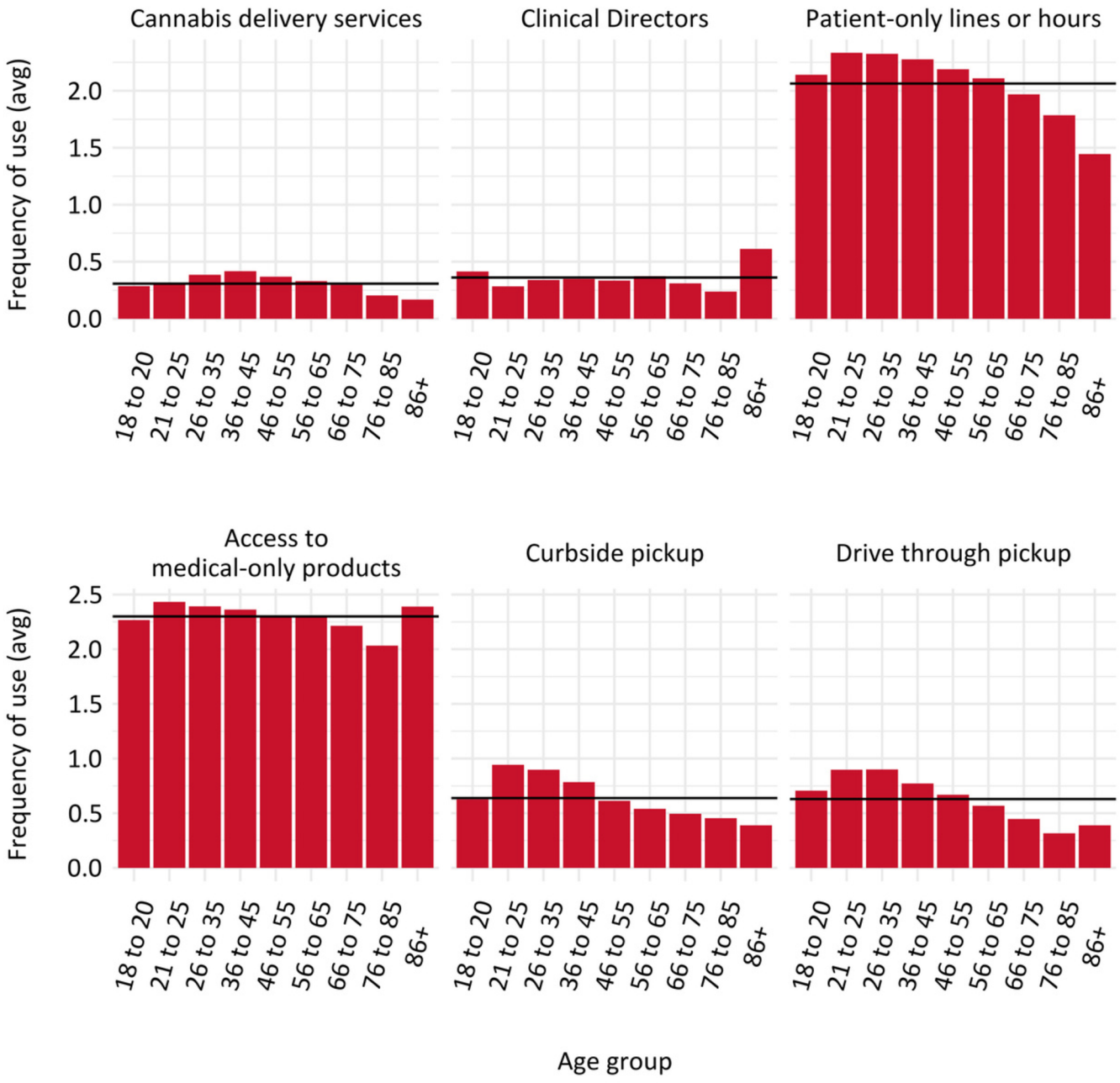


Figure 6. Frequency of Dispensary Feature Usage Since Adult-Use Legalization: Average by Age Group (2024)



Frequency averages were determined by averaging coded values where Never = 0, Sometimes = 1, Usually = 2, and All the time = 3.
Overall means are indicated with the horizontal lines.

The 2024 survey assessed interest in potential new dispensary features by asking respondents how much each of four proposed features would improve their experience as medical patients. The features included: 1) having a Clinical Director available during all standard business hours (9 am to 5 pm, Monday through Friday); 2) having a Clinical Director available during extended weekday hours and on weekends; 3) offering more low-THC products; and 4) increasing accessibility accommodations (such as ramps, automatic doors, large-font resources). Response options ranged from "Great improvement" to "No improvement". Among the features, 26% of respondents indicated that increasing accessibility accommodations would result in a "Great Improvement," making it the most strongly endorsed feature in terms of the highest single response category (see Figure 7). Additionally, ensuring the availability of a Clinical Director during standard business hours was reported as improving the patient experience to some degree by the largest percentage (71%).

Figure 7. Response Distribution on the Extent to Which Each Dispensary Feature Would Improve Respondents' Experiences as Medical Patients

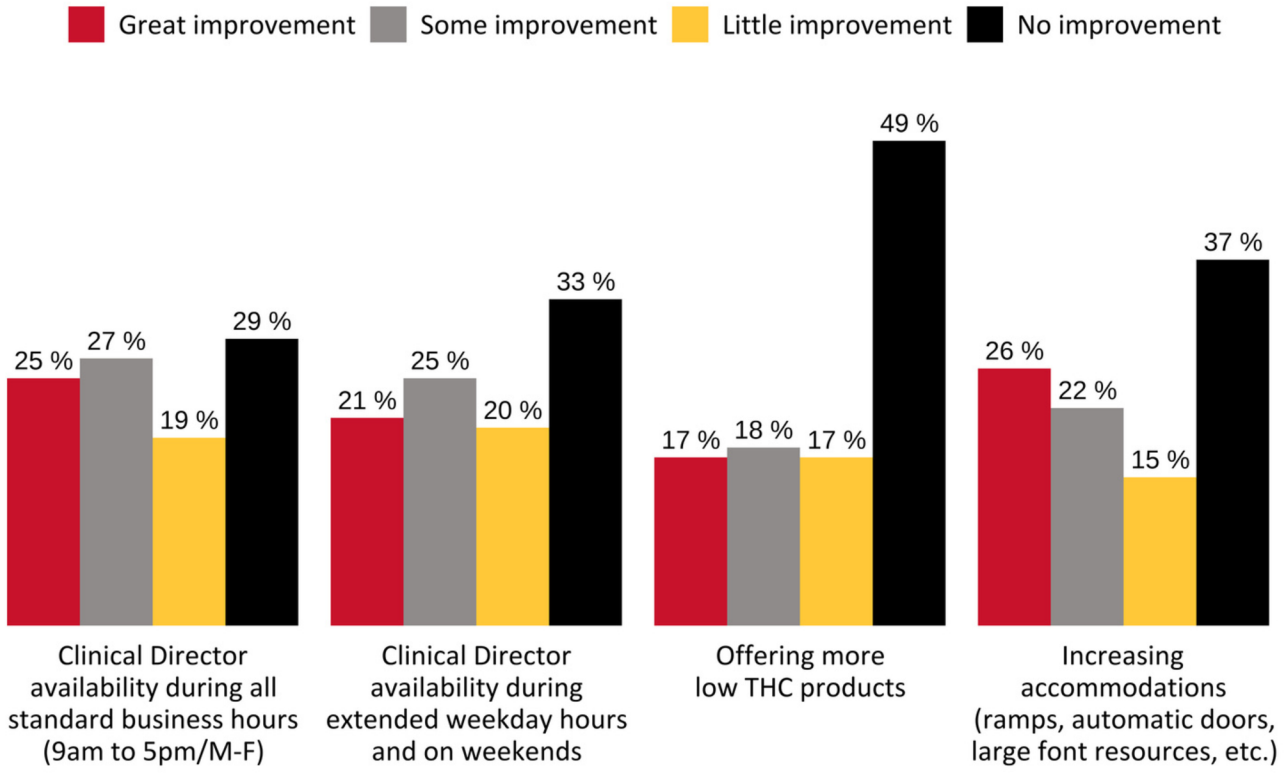
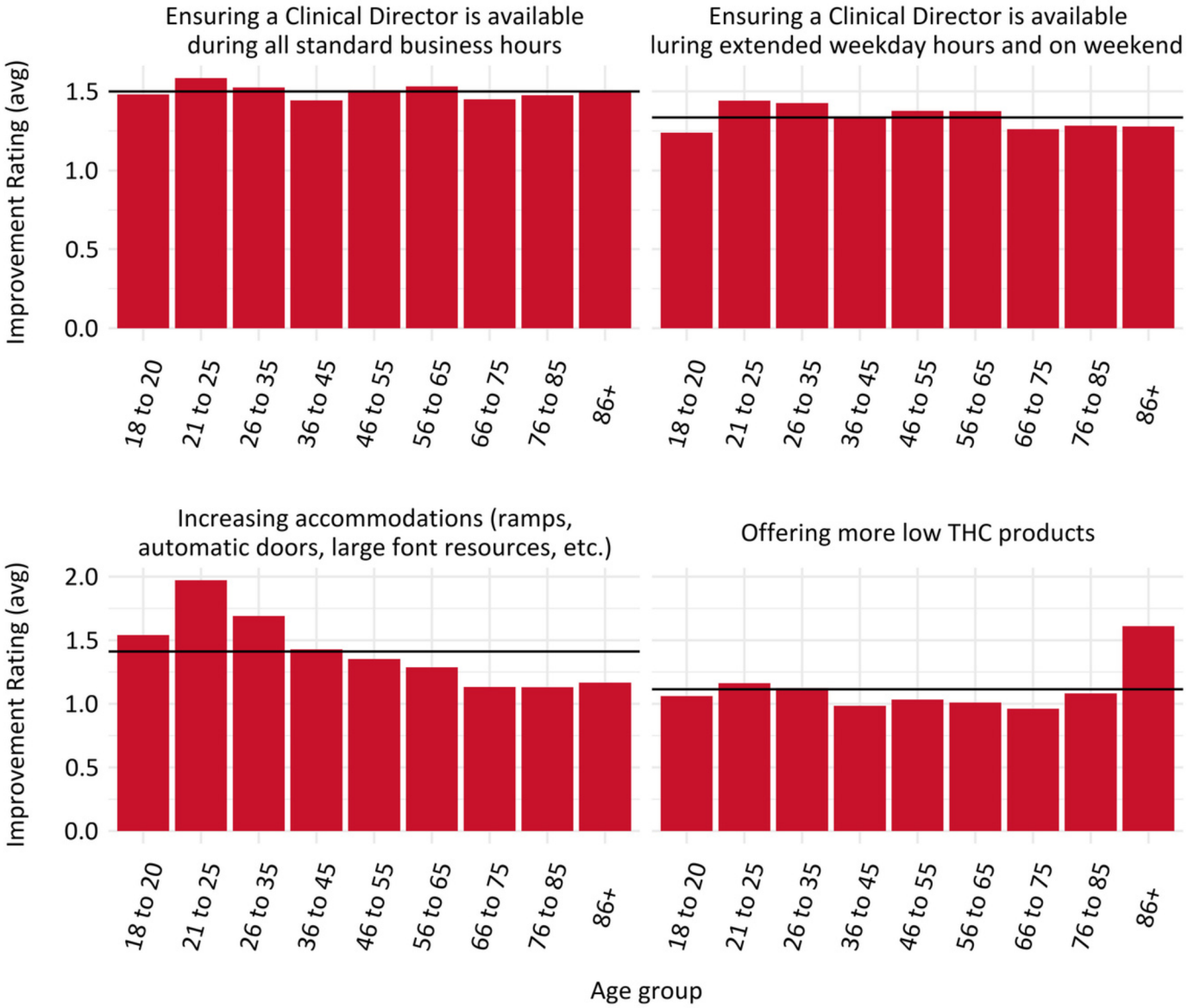


Figure 8 displays the overall average improvement ratings, as well as a breakdown by age group. Averages were calculated with coded values (No improvement = 0, Little improvement = 1, Some improvement = 2, and Great improvement = 3), and horizontal lines indicate the overall average improvement score across age groups. The highest average improvement

score (1.5) was associated with having a Clinical Director available during all standard business hours, with minimal variation across age groups. Increasing accommodations received the second-highest score (1.4 on average), with younger respondents, particularly those aged 21 to 35, indicating significantly higher perceived improvement. Respondents aged 86 and older rated "offering more low-THC products" significantly higher than the overall average.

Figure 8. Impact of Potential New Dispensary Features on Medical Patient Experience: Average Improvement Rating by Age Group



Improvement rating was determined by averaging coded values where
No Improvement = 0, Little improvement = 1, Some improvement = 2, and Great improvement = 3.
Overall means are indicated with the horizontal lines.

2.3. How easy is the patient registration and annual recertification process?

A series of questions new to the 2024 survey focused on patient onboarding and support within the Maryland medical cannabis program. They explored how patients first became aware of the program, whether they received assistance during the registration process, and their understanding of renewal requirements for continued certification. These questions aimed to evaluate the accessibility of information, ease of registration, and any reliance on support networks or resources for program participation.

When asked how they first learned about the medical program, the largest group of respondents (32%) indicated that a friend or family member informed them (see Table 4). Specific to registration, nearly two-thirds (62%) reported completing the registration process themselves without assistance. However, a knowledge gap may exist among patients regarding registration and certification requirements. When asked to select the correct renewal timeline from various false options, fewer than half (42%) of respondents correctly identified that "My provider certification must be renewed annually." These findings suggest that patients may be unclear about the distinction between provider certification, required annually, and patient registration, which the MCA authorizes for a six-year period. This confusion may stem from terminology changes in MCA policies, as evidenced by the high volume of related questions received by MCA staff. MCA and program-affiliated parties should use consistent terminology across all materials to avoid confusion. Patients may benefit from receiving education from Certifying Providers during consultations about the annual certification process and its distinction from the registration timeline. Furthermore, equipping MCA staff with clear scripts and tools to address common questions about certification and registration may help to reduce patient confusion.

Table 4. How did you first learn about becoming a Maryland medical cannabis patient?

A friend or family member	32.0%
A news article or something I read	21.0%
A healthcare provider	17.0%
Another medical cannabis patient	15.0%
I don't remember	6.6%
Other, specify:	4.7%
Someone at a dispensary	2.0%
I saw an ad or booth at an event	1.8%

2.4. How frequently do patients consult with their certifying provider?

MCA has more than 1,300 certifying providers who issue written certifications for medical cannabis to patients with qualifying medical conditions. A bona fide patient-provider relationship is required; however, visits with certifying providers can be completed remotely, and patients are not required to complete their annual recertification with the same provider to maintain an active medical status. Most respondents (88%) reported consulting a certifying provider only once per year to renew their patient certification. The majority of patients (76%) indicated that providers charge $149 or less for their services, with 40% reporting fees under $100.

We further analyzed the frequency of consulting certifying providers across various demographic and medical cannabis use variables to better understand the patient-provider relationship and identify patterns in provider utilization. Respondents who consulted their certifying provider with greater frequency (e.g., more than twice per year) tended to report slightly lower THC doses per use occasion, though the number of cannabis use days per month did not differ. These respondents also reported fewer days of alcohol use per month but greater use of benzodiazepines (over twice as many days) and opioids (over four times as many days) in the past month on average (see Table 5). Since certifying providers are the leading source of information on drug interactions (see Section 2.5), they play a critical role in educating patients about the risks of using cannabis alongside other substances. Certifying providers may need to prioritize staying informed about potential interactions between cannabis, benzodiazepines, and opioids, to better counsel patients. Furthermore, this finding highlights a need for certifying providers to incorporate robust screening assessments for dependency risks and monitoring of poly-substance use.

Few differences in provider consultation frequency were observed across age groups, health insurance status, qualifying medical conditions, experiences with cannabis-induced adverse health events, diagnoses of cannabis hyperemesis syndrome, perceptions or behaviors related to driving under the influence of cannabis (DUIC), problematic cannabis use patterns, or years of certification in the medical cannabis program

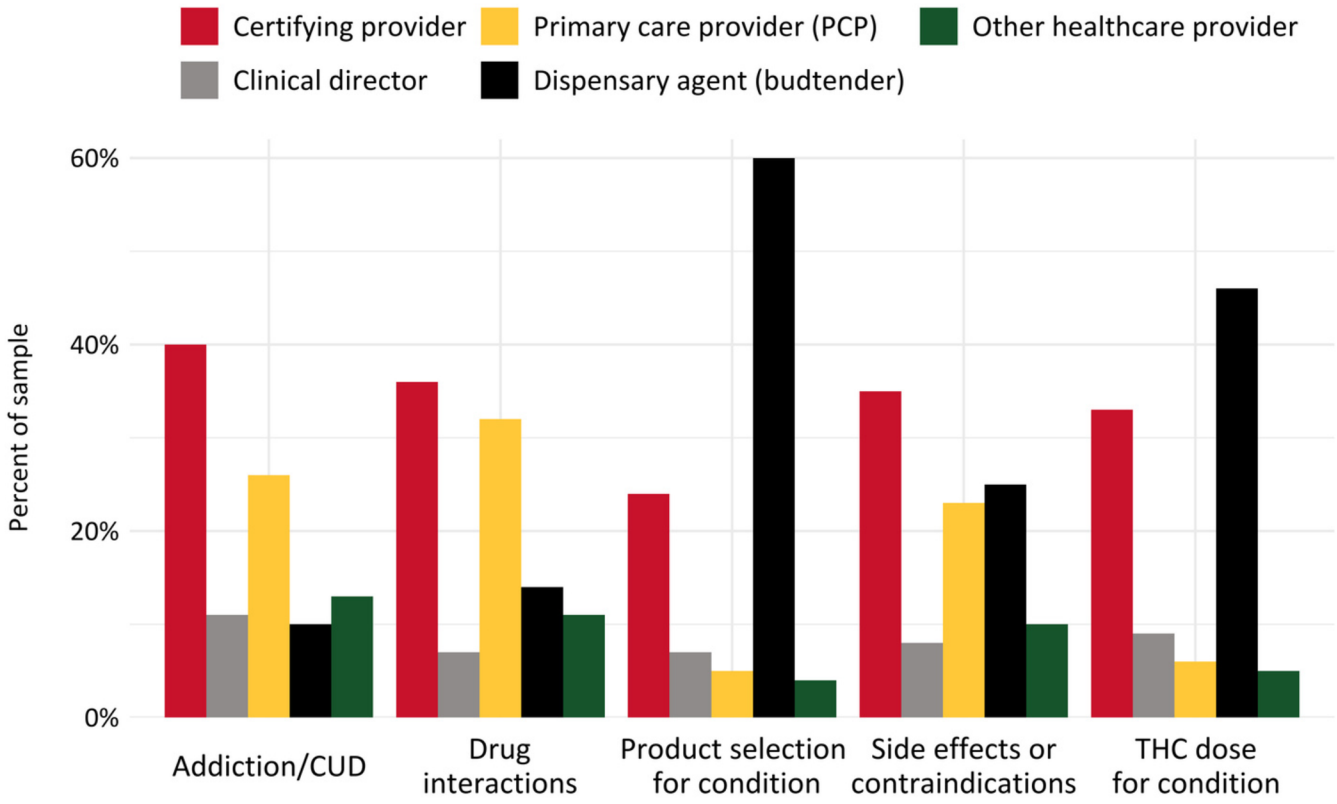
Table 5. Substance Use Characteristics by Frequency Consulting Certifying Provider

Characteristics	Frequency of Consulting Certiying Provider		
	Once Per Year	Twice Per Year	More than Twice Per Year
THC dose per use (mdn)	32.8 mg/THC	33.8 mg/THC	30.6 mg/THC
Past month use days (m)			
Cannabis	22.6	21.7	22.2
Alcohol	4.7	3.7	2.9
Benzodiazepines	1.2	1.0	2.8
Opioids	1.1	1.2	4.6

2.5. Where do patients get information on medical cannabis?

The MMCPS-24 introduced a new series of questions designed to identify key information sources for medical cannabis patients and evaluate the perceived quality of information provided. These insights may help pinpoint which sources patients rely on most for specific topics, as well as potential gap areas. Respondents were presented with a series of medical cannabis topics and asked to identify their primary source of information for each topic. Response options included Certifying Provider, Clinical Director, Primary Care Provider (PCP), Dispensary Agent (Budtender), and Other Healthcare Provider. Figure 9 illustrates the percentage of respondents who selected each source for various medical cannabis topics. Certifying providers were the primary source of information on addiction/CUD, drug interactions, and side effects or contraindications. In contrast, dispensary agents (budtenders) were the leading source for guidance on selecting a cannabis product (methods, strengths, effects, forms) and determining the appropriate THC dose for a medical condition. While respondents indicated satisfaction with information sourced from dispensary agents, these medical cannabis topics are best addressed by a certifying provider. Developing educational materials for patients on recommended information sources for THC dose and related topics might improve patient outcomes and experiences.

Figure 9. Primary Information Sources on Medical Cannabis Topics Among Survey Sample

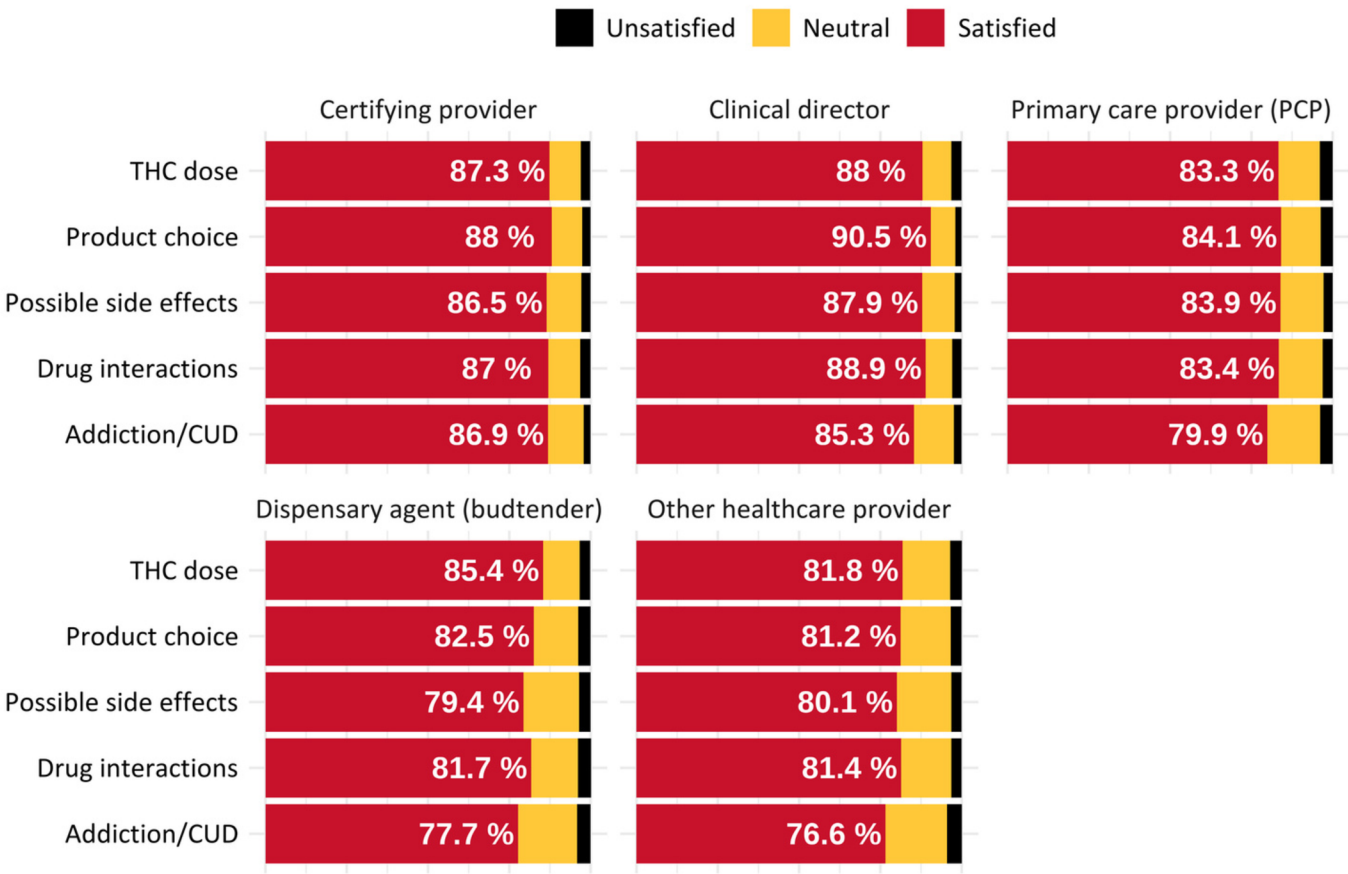


Respondents were then asked to rate their level of satisfaction with the information they received on each topic from their selected source using a five-point Likert scale ranging from “Very satisfied” to “Very unsatisfied.” Figure 10 summarizes the satisfaction results for each topic, grouped by the information source. For clarity, the scale was condensed: “Very satisfied” and “Satisfied” were combined into a “Satisfied” category, while “Very unsatisfied” and “Unsatisfied” were grouped as “Unsatisfied.” The figure’s data labels represent the percent of participants that were satisfied with the information provided.

Overall, respondents expressed high levels of satisfaction, with at least 75% deeming the information satisfactory across all topics and sources. Clinical Directors received the highest percentage of “Satisfied” responses across most topics, compared to other sources. Notably, over 90% of respondents who primarily sourced information from Clinical Directors on product selection for their medical condition were satisfied with the information provided. Information on addiction/CUD was the least satisfactory across all sources. However, Certifying Providers and Clinical Directors received the highest satisfaction ratings for information on addiction/CUD, with 87% and 85% of respondents, respectively, expressing.

satisfaction. These findings highlight potential gaps in understanding and education on addiction and CUD among other professions, and they suggest that patients may benefit from directing questions on these topics to Certifying Providers and Clinical Directors, who appear to be the most reliable sources of information in this area at this time.

Figure 10. Participant Satisfaction with Information on Medical Cannabis Use Topics, Categorized by Primary Information Source



Note: data labels represent the percent of participants that selected 'Very-' or 'Somewhat satisfied'.

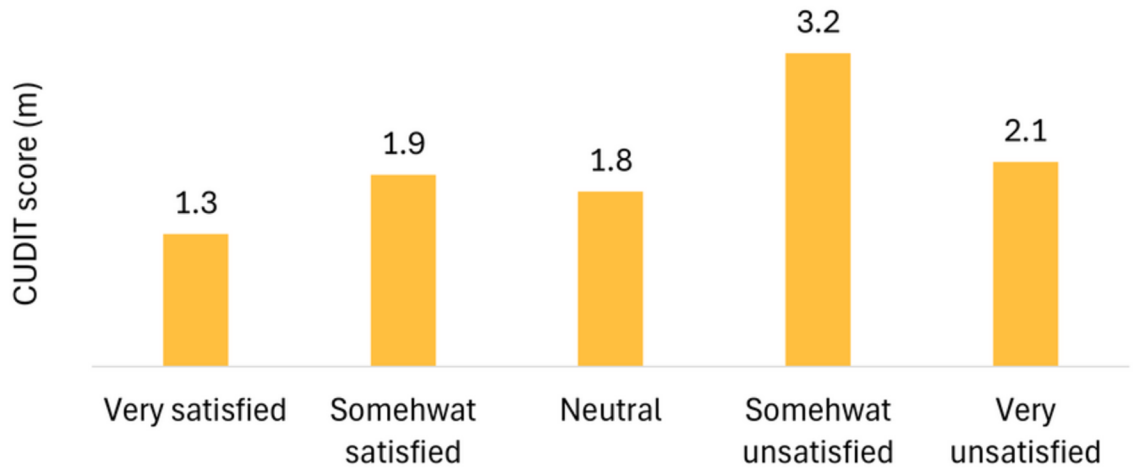
Results from the Cannabis Use Disorder Identification Test (CUDIT), a brief assessment of CUD (described in Section 4.6), indicated fewer problematic cannabis use behaviors among respondents who sought information on addiction and CUD from Certifying Providers and Clinical Directors compared to other sources (see Table 6). Conversely, respondents dissatisfied with the information on addiction and CUD across all sources exhibited greater problematic cannabis use behaviors on average (see Figure 11). These findings underscore a broader issue: a pervasive lack of satisfactory and effective information on CUD and addiction. Notably, those who need this information the most—individuals exhibiting greater signs of problematic use—report the lowest levels of satisfaction. This suggests that there is a critical gap in the availability and quality of information on CUD

treatment. This issue extends beyond MCA, as treatment options for CUD remain limited. While no approved pharmacotherapies currently exist for cannabis use or CUD, therapeutic approaches such as motivational enhancement therapy, cognitive-behavioral therapy, and contingency management have shown promise in addressing problem use behaviors.[5,6] To address the knowledge gap about CUD, MCA could develop evidence-based educational materials that outline the risks and signs of dependence and highlight available therapeutic treatment options. Strengthening the partnership with the Maryland Department of Health's Behavioral Health Administration for linkages to treatment providers could enhance patient access to support resources. Additionally, a cannabis helpline (discussed later in this section) could effectively bridge this gap by offering patients information on treatment centers and telehealth options for CUD support. These initiatives aim to promote more informed cannabis use and empower patients to make autonomous, responsible decisions.

Table 6. Average CUDIT score by Primary Info Source on Addiction / Cannabis Use Disorder

Information Source	CUDIT
Certifying provider	1.3
Clinical director	1.3
Primary care provider (PCP)	1.7
Dispensary agent (budtender)	1.7
Other healthcare provider	2.0

Figure 11. Average CUDIT Score by Satisfaction with Information on CUD



[5] https://link.springer.com/chapter/10.1007/978-3-030-86430-9_4
[6] https://www.nature.com/articles/s41572-021-00247-4

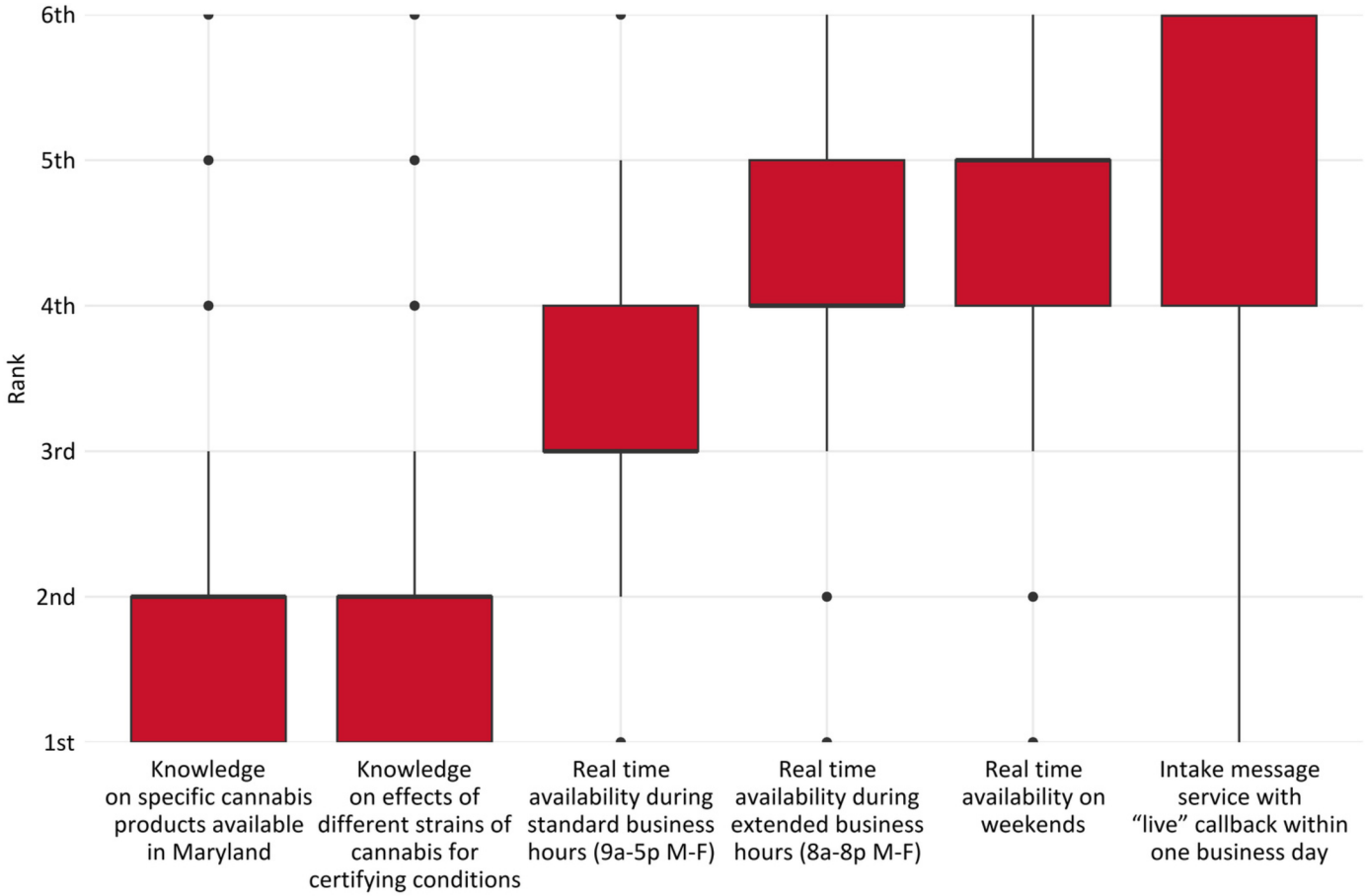
Despite their high satisfaction ratings, Clinical Directors were not the leading source of information for any surveyed medical topic (see Figure 9). This may be attributed to visibility, as 30% of respondents were unaware of the Clinical Director program (see Section 2.6), or accessibility, as 71% of respondents indicated that increased availability of Clinical Directors during weekday hours would improve their experience as a medical patient to some degree (see Figure 7). When asked about use of a cannabis helpline to access professional guidance on medical cannabis topics, respondents expressed interest in several topic areas (see Table 7). Only 16% of respondents said they would not use the helpline resource.

Table 7. Utilization of free State-sponsored phone resource

Information Source	CUDIT
Would you utilize a FREE state resource that allows you to call a medical professional for guidance on any of the following topics? Select all of the topics you would be interested in.	**n (%)**
Different cannabis products and strains related to certifying conditions	**5,871** (24.0%)
Specific products and strains available in Maryland dispensaries	**4,832** (19.0%)
Contraindications, including health conditions, medications, and other substance/drug interactions with cannabis	**4,230** (17.0%)
I would not use this	**4,099** (16.0%)
Potential health risks related to cannabis use	**2,410** (9.7%)
Side effects from cannabis use	**2,007** (8.1%)
Help with reducing/stopping cannabis use	**917** (3.7%)
Other cannabis-related topic(s) you would like to consult with a medical professional about (please specify)	**488** (2.0%)

Respondents were then asked to rank a series of six administrative elements related to the helpline resource in order of importance, where 1 was most important and 6 was least important. By asking respondents to rank the elements in order of importance, we aimed to identify which aspects of the resource would best meet patient information needs. Figure 12 summarizes the median ranking of each element. Of greatest importance to respondents was the medical professionals' knowledge on cannabis product availability and applicability to medical conditions. Availability during business hours was ranked more importantly than extended or weekend hours. Use of intake message service with a "live" callback feature was ranked as least important.

Table 7. Utilization of free State-sponsored phone resource



2.6. How are Clinical Directors used?

Engagement with Clinical Directors has been analyzed throughout the MMCPS from various perspectives. The visibility of Clinical Directors has been a consistent challenge identified over all three cycles of the MMCPS, with 30% of respondents each year reporting they were unaware of this resource. Despite this, access to Clinical Directors for those seeking consultations appears to be adequate—only 2% of respondents each year reported that a Clinical Director was unavailable when they attempted to schedule a meeting. Furthermore, in the 2024 survey, respondents who had met with a Clinical Director were asked about wait times, and 75% reported either no wait or a wait of less than 15 minutes for their consultation.

New analyses aimed to better characterize the patients engaging with Clinical Directors and to understand how and by whom this program feature is being used. First, analyses were conducted to determine whether certain types of medical cannabis patients were more likely to utilize Clinical Directors as their primary source of information on any surveyed medical cannabis topic (survey items described in Section 2.5). Grouping factors included respondents' age, gender identity, qualifying condition, length of time as a certified medical cannabis patient, and primary method of administration. However, no strong associations emerged, suggesting that topics of discussion between patients and Clinical Directors are not driven by these characteristics.

Table 8 below displays demographic and pattern of use variables that were analyzed based on respondents' reported frequency of consulting a Clinical Director since the legalization of adult-use cannabis ("Never," "Sometimes," "Usually," "Always"). Overall, the findings indicate that Clinical Directors are utilized by a diverse range of patients, with no strong preferences tied to specific demographics or usage characteristics. However, positive associations were observed between the frequency of Clinical Director use and certain consumption metrics. Specifically, as the frequency of Clinical Director use increased, so did the dose (mg THC) per occasion, grams of flower used per session, flower THC potency, and weekly spending on flower products. These findings suggest that those consulting Clinical Directors more frequently may be consuming cannabis in greater doses, particularly among those whose primary method of administration is flower. It's possible these patients have more severe or complex medical conditions; however, it should be noted that higher THC dosages raise risks for cannabis-induced adverse events and CUD.

Table 8. Patterns of Use by Frequency of Consulting a Clinical Director

	Frequency Consulting Clinical Director			
	Never (n=8975)	**Sometimes (n=2612)**	**Usually (n=291)**	**Always (n=311)**
Age group (median)	46 to 55	46 to 55	46 to 55	46 to 55
Years as a Certified Patient (m)	3.75	3.64	3.57	3.65
Dose mg/THC per occasion (median)	30.2	34.6	45	45
CUDIT score (m)	1.6	1.5	1.6	1.5
Patterns of use by primary method of administration				
Flower				
Grams per session (m)	0.84	0.96	1.26	1.51
THC potency (m)	30%	31%	33%	36%
Spend per week (m)	$63	$69	$74	$76
Edibles				
mg/THC per use (m)	14	15	11	23
Spend per week (m)	$35	$37	$59	$50
Concentrates				
Grams per session (m)	0.3	0.3	0.7	^
THC potency (m)	75%	75%	68%	^
Spend per week (m)	$75	$82	$107	^
Vape				
Grams per week (m)	1.9	2.1	3.8	1.8
THC potency (m)	70%	70%	63%	68%
Spend per week (m)	$44	$46	$56	$49

^ = small sample size (n<10)
Note: Data broken down by method of administration were reported only by the primary users of those methods.

In sum, the following were observed in the Clinical Director-focused analyses presented throughout this report:

- The frequency of Clinical Director use was slightly above average among both the youngest age group (18 to 20) and the oldest age group (86 and older). (Section 2.2)

- Seventy-one percent of respondents indicated that their experience in the medical cannabis program would improve if a Clinical Director was available during all standard business hours (M-F 9am-5pm). Similarly, 67% expressed that availability during extended weekday hours and weekends would enhance their experience (see Section 2.2).

- Clinical Directors served as the primary information source for 7% to 11% of respondents across various medical cannabis topics. The most common topic for which respondents relied on Clinical Directors was addiction/CUD, with 11% identifying them as their primary source. (Section 2.5)

- Satisfaction with information received from Clinical Directors on medical cannabis topics was among the highest across all sources. Notably, over 90% of respondents who relied on Clinical Directors as their primary source for product selection for their medical condition reported being satisfied with the information provided. (Section 2.5)

- Among those who get THC dosing information from Clinical Directors, the median dose per occasion was 33.8 mg/THC, which was in the middle of the range compared to those receiving information from other sources. (Section 3.6)

- Clinical Directors are utilized by a diverse range of patients, with no strong associations to specific demographics, qualifying condition, cannabis product preference, or length of time in the medical cannabis program.

- Respondents that reported consulting Clinical Directors more frequently tend to consume cannabis in greater doses, particularly among those whose primary method of administration is flower

Section 3. Patterns of Use

3.1. Have patients' qualified conditions changed since expanded legalization?

Use of medical cannabis for qualifying conditions has remained consistent across the three survey years, especially 2023 and 2024. Table 9 displays the frequency of qualifying conditions from 2022 to 2024. Half (50%) of respondents were certified for severe or chronic pain, nearly one-third (29%) for "Other chronic condition", and 13% for PTSD. The remaining conditions were reported by 3% or less of respondents in each survey year. Similarly, use among those certified under "Other chronic conditions" was consistent with 2023, where anxiety was most common (37%), followed by insomnia (21%), other (18%), and depression (10%). See Table 9a.

Table 9. Frequency of Qualifying Conditions: 2022 to 2024

	2022	2023	2024
Severe or chronic pain	46.0%	50.0%	50.0%
Other chronic condition	33.0%	29.0%	29.0%
PTSD	13.0%	13.0%	13.0%
Severe or persistent muscle spasms	3.0%	3.0%	2.6%
Severe nausea	3.0%	2.0%	2.3%
Anorexia	1.0%	1.0%	0.9%
Glaucoma	--	1.0%	1.0%
Seizures	1.0%	1.0%	0.8%
Cachexia or wasting syndrome	0.2%	0.0%	0.2%

Table 9a. Frequency of "Other Conditions": 2023 and 2024

	2023	2024
Anxiety	38.0%	37.0%
Insomnia or sleep disruptions	22.0%	21.0%
Other, not listed here	17.0%	18.0%
Depression	11.0%	9.8%
Arthritis	5.0%	5.9%
Gastrointestinal (stomach) distress	4.0%	4.2%
Attention-deficit/hyperactivity disorder (ADHD)	2.0%	3.3%
Autism Spectrum Disorder (ASD)	1.0%	0.6%
Sexual disorders	--	0.2%

Note: "Other conditions" were not assessed in 2022.

3.2. Has frequency of use or preferred methods changed since expanded legalization?

A unique advantage to issuing three surveys – before and at two points in time after adult-use cannabis legalization – is the ability to examine how patterns of cannabis consumption may have evolved amidst this change. Consistent with the 2022 and 2023 surveys, the present survey included questions inquiring about respondents' frequency of cannabis use, preferred methods of administration, and perceived efficacy of their medical cannabis consumption. Table 10 below presents the average number of days of use and the percentage of individuals reporting past-month use across the full sample and categorized by the method of administration. Overall, these metrics remained consistent across survey years, except for notable changes in the use of edibles. Between 2022 and 2024, survey respondents reported increases in both the average number of consumption days per month (7.1, 7.8, and 8.7 days, respectively) and the percentage of respondents reporting any past-month consumption of edibles (69%, 70%, and 75%, respectively).

Table 10. Past-Month Use by Method of Administration

	Average days of use in past month			Percentage of sample reporting any past-month use		
	2022	2023	2024	2022	2023	2024
Any method (i.e., full sample)	21.3	22.1	22.5	96.0%	97.0%	97.0%
Flower	12.9	11.7	11.8	75.0%	69.0%	69.0%
Edibles	7.1	7.8	8.7	69.0%	70.0%	75.0%
Vaporizer/cartridge	8.9	8.5	8.9	65.0%	62.0%	62.0%
Concentrates (dabbing, wax, shatter, etc.)	2.2	1.9	2.3	18.0%	17.0%	20.0%
Topicals (balm, lotion, cream)	1.9	2.2	2.2	22.0%	24.0%	24.0%
Capsules or tablets	1.0	1.0	1.0	13.0%	11.0%	12.0%
Tinctures or oral sprays (elixirs)	1.0	1.0	0.9	12.0%	12.0%	11.0%
Transdermal (patch)	0.1	0.2	0.2	1.5%	2.0%	2.0%
Rectal/vaginal suppositories	0.0	0.1	0.1	1.0%	1.0%	1.0%

Table 11 below presents the percentage of respondents reporting medical cannabis as very or extremely effective by qualifying condition. Consistent across MMCPS years, and when pooled by all years, severe nausea, PTSD, anorexia, and seizures had the highest effectiveness ratings, all above 80%. Glaucoma had the lowest pooled score, followed by sexual disorders, which was asked for the first time in 2024 and had a very small sample size, limiting conclusions that can be drawn.

Table 11. Percentage of Respondents Who Reported Medical Cannabis Was Very or Extremely Effective, by Qualifying Condition

	2022	2023	2024	All years pooled
Severe nausea	81.0%	90.0%	85.0%	85.0%
PTSD	82.0%	85.0%	84.0%	84.0%
Anorexia	86.0%	84.0%	78.0%	83.0%
Seizures	81.0%	82.0%	82.0%	81.0%
Severe or persistent muscle spasms	66.0%	79.0%	76.0%	74.0%
Cachexia or wasting syndrome ^	65.0%	72.0%	81.0%	74.0%
Severe or chronic pain	70.0%	74.0%	72.0%	72.0%
Glaucoma	--	59.0%	57.0%	59.0%
Other chronic conditions*	78.0%	80.4%	78.0%	79.0%
Anxiety	--	84.0%	83.0%	84.0%
Gastrointestinal distress	--	78.0%	82.0%	80.0%
Insomnia	--	80.0%	78.0%	79.0%
Depression	--	79.0%	74.0%	77.0%
ADHD	--	77.0%	71.0%	74.0%
Arthritis	--	74.0%	69.0%	69.0%
Autism spectrum disorder ^	--	65.0%	80.0%	72.0%
Sexual disorders ^^	--	--	62.0%	62.0%

-- signifies that no data was collected.

^ Small sample size (n<20)

^^ Small sample size (n<10)

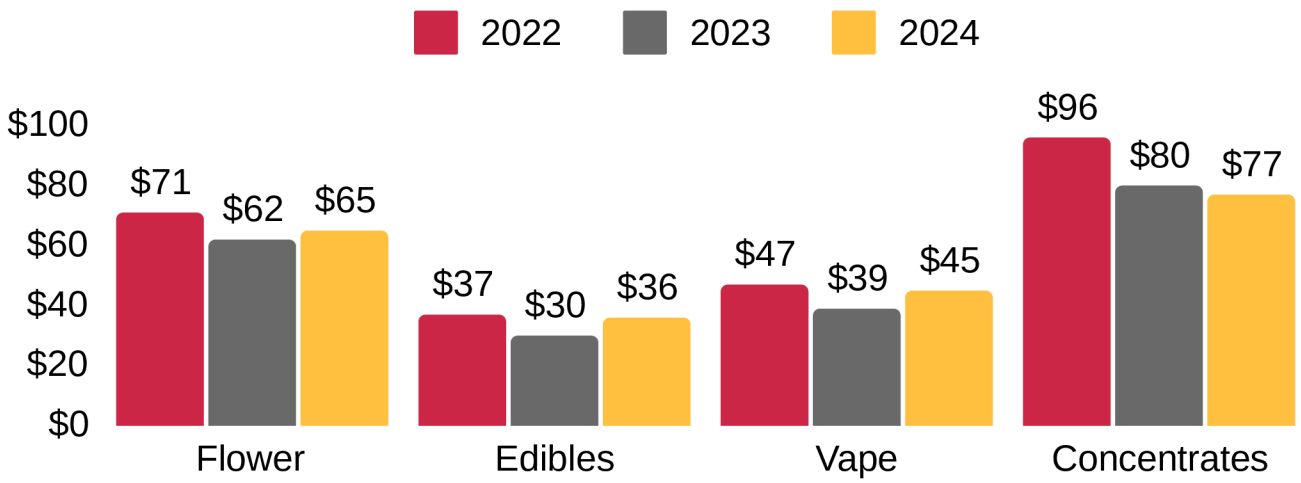
* Refer to Section 3.1. Qualifying Medical Conditions for details on other chronic conditions.

Findings in this table are not intended as medical advice. Patients should always consult a healthcare provider for medical concerns.

3.4. How much do medical patients spend per transaction?

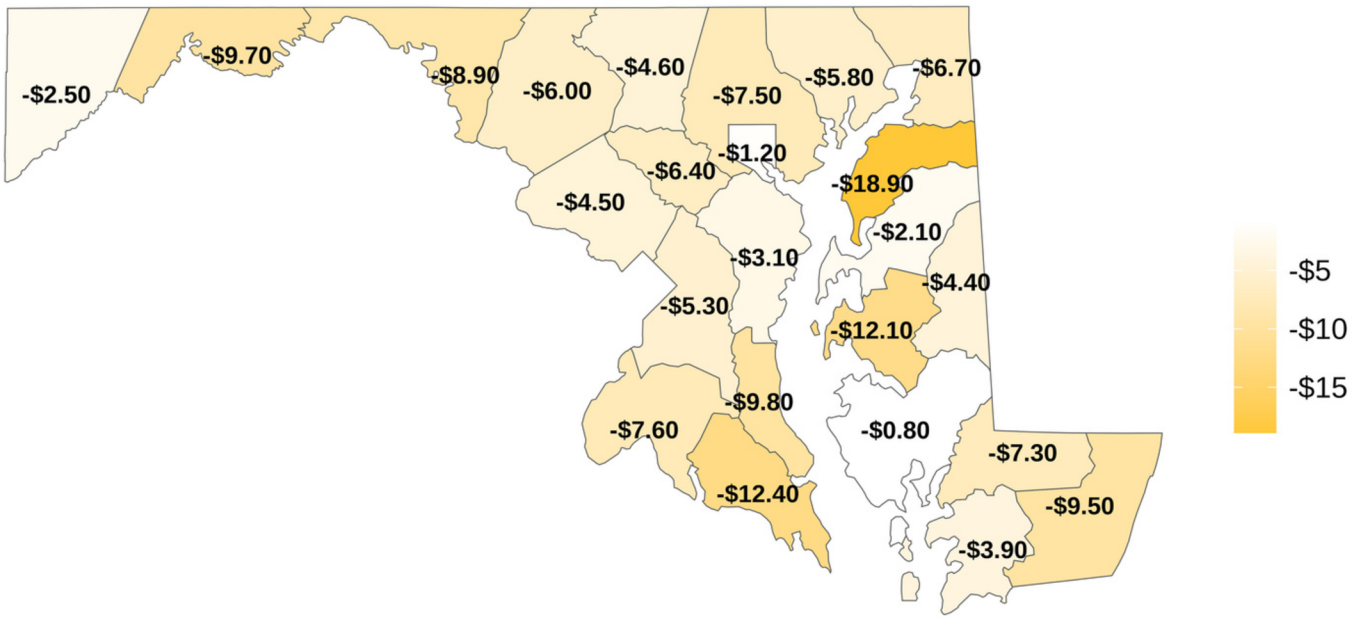
Respondents reported their average weekly spending on their primary method of administration. From 2022 to 2024, average spending across all four methods declined to some degree. The largest reduction was among primary consumers of concentrates, with average weekly expenses dropping from $96 in 2022 to $80 in 2023, and further to $77 in 2024 (Figure 13).

Figure 13. Average Amount Spent per Week by Method of Administration



This data was aggregated across all methods and mapped to illustrate change in weekly spending from 2022 to 2024 by county (Figure 14). In every county, average weekly spending was lower in 2024 than in 2022. Spending on flower, edibles, and vape reached its lowest in 2023, three months after the start of adult-use market sales, and then increased slightly in 2024. While spending increased from 2023 to 2024, it may not be a direct result of cannabis prices, since MCA's data dashboard[7] shows the median price per gram of cannabis declined by about 66 cents during the same timeframe (from about $10/gram in October 2023 to $9.34/gram in October 2024).

Figure 14. Differences in Average Amount Spent per Week on Primary Method of Administration from 2022 to 2024, by County



[7] https://cannabis.maryland.gov/Pages/Data-Dashboard.aspx

3.5. How often do medical cannabis patients consume for nonmedical reasons?

In each of the three survey years, respondents reported the percentage of their total past month cannabis consumption attributed to medical versus nonmedical reasons. Across the surveys, there has been a growing shift toward a higher proportion of consumption for medical purposes. Those reporting 100% medical use increased from 63.8% in 2022 to 67.1% in 2023, and further to 74% in 2024 (see Table 12). Conversely, about a quarter of participants reported mixed medical and non-medical cannabis use.

Research indicates that individuals using cannabis for both medical and non-medical purposes may face an elevated risk of mental health concerns and problematic usage patterns.[8] To investigate this within the MMCPS data, respondents were grouped by mixed versus single-purpose use, and their scores on the Cannabis Use Disorder Identification Test (CUDIT)—a brief assessment of cannabis use disorder (CUD) described in Section 4.6—were analyzed. In 2024, respondents reporting mixed use had higher average CUDIT scores compared to those reporting only medical use (2.0 vs. 1.4, respectively). Notably, a CUDIT score of 2.0 is the threshold for potential problematic use. When combining data from all three survey years for a larger sample size, a similar trend emerged. Respondents reporting mixed use had higher average CUDIT scores than those reporting only medical use (1.6 vs. 1.1, respectively).

Continued monitoring of mixed-use patterns is valuable for several reasons. For instance, an increase in fully medical use indicates that the program is effectively serving its intended population and achieving its primary goal of providing access to cannabis for medical purposes. Additionally, recognizing the higher risks associated with individuals who use cannabis for both medical and non-medical purposes can guide the development of tailored education and support initiatives to mitigate potential harms.

[8] Sridharan P, Romm KF, Berg CJ. Use of Cannabis for Medical or Recreational Purposes Among US Young Adults: Correlates and Implications for Problematic Use and Interest in Quitting. Cannabis. 2024 Jun 26;7(2):51-64. doi: 10.26828/cannabis/2024/000216.

Table 12. Percentage of cannabis consumption for medical vs. non-medical (i.e., recreational) in past month: 2022 to 2024

	2022	2023	2024
100% medical use	63.8%	67.1%	74.0%
75% medical, 25% non-medical	19.0%	17.6%	16.0%
50% medical, 50% non-medical	11.9%	9.6%	7.7%
25% medical, 75% non-medical	1.8%	1.6%	1.4%
100% non-medical	0.8%	0.6%	0.5%

In the 2024 survey, 18% of respondents reported purchasing cannabis from the adult-use market. The majority of this group were aged 36 to 45 (25%), with their primary methods of administration being flower (52%), edibles (20%), or vape (19%). A follow-up multiple-choice question asked these individuals to identify their primary reason for making adult-use purchases. Over one-third (36%) cited a temporary lapse in their certification and 15% reported exceeding their medical allotment, which raises concerns about exposure to high THC doses and greater frequency of use, increasing the risk for cannabis-induced adverse experiences. Another 11% experienced a system or technical issue when the dispensary attempted to access their medical certification electronically, and 7% preferred the anonymity offered by the adult-use market. Additionally, 33% selected "Other reasons" and provided further details in an open-text field. Common write-in responses included convenience, lower prices for adult-use products, or purchasing from the adult-use market before becoming a medical patient. Notably, the 15% of respondents who purchased from the adult-use market due to exceeding their medical allotment exhibited significantly higher usage metrics compared to others. They reported higher median THC dose per use (90 mg vs. 33 mg), higher average CUDIT scores (2.3 vs. 1.9), and more frequent cannabis use per month (27 days vs. 22.5 days on average). This risk group could particularly benefit from high-visibility point of sale education materials on lower THC products, reduced frequency of use, and signs of problem use, and available resources.

Table 13. Primary Reason for Purchasing Cannabis as an Adult-Use Consumer

	2023	2024
I exceeded medical allotment	17.0%	15.0%
I prefer anonymity of adult-use market	18.0%	6.6%
My certification temporarily lapsed	--	36.0%
There was an issue when the dispensary tried to access my medical certification electronically (technical or system problem)	--	11.0%
Other reason(s), please specify	64.0%	31.0%

3.6. What is the typical dose per occasion?

Dosing is a critical aspect of medical cannabis use, essential for reducing potential harms and establishing safety guidelines. However, research progress in this area has been slow, hindered by the wide variation in product types, cannabinoid concentrations, and methods of administration.[9] Over the three years of the MMCPS, there has been limited advancement in developing a scientific framework for dosing recommendations tailored to medical cannabis patients. Although standardized methods for measuring cannabis dose have been proposed,[10,11] none have achieved widespread acceptance as of the publication of this report.

Despite the absence of a standard approach, dose (measured in mg of THC per occasion of use) for flower, edible, vape, and concentrate products was assessed across all three years of the MMCPS using a method informed by the scientific literature.[12] Only respondents who reported past-month use and identified flower, edibles, vape, or concentrates as their primary method of consumption were presented with the dose questionnaire. Respondents were asked to detail their use patterns based on their primary method of administration. For edible products, respondents provided the mg of THC they typically consume in a single sitting. For inhaled products (flower, vape, concentrates), they provided information on the amount and potency they use in a typical sitting; these responses were converted to mg of THC to facilitate comparisons across product types. The dose formulas for flower, vape, and concentrate include multipliers to account for THC loss

[9] https://karger.com/mca/article/4/2/121/820114
[10] Freeman, T. P., & Lorenzetti, V. (2020). 'Standard THC units': a proposal to standardize dose across all cannabis products and methods of administration. Addiction, 115(7), 1207–1216. https://doi.org/10.1111/add.14842
[11] Volkow, N. D., & Weiss, S. R. B. (2020). Importance of a standard unit dose for cannabis research. Addiction, 115(7), 1219–1221. https://doi.org/10.1111/add.14984Volkow, N. D., & Sharpless, N. E. (2021, May 10). Establishing 5mg of THC as the standard unit for research. Nora's Blog, National Institute on Drug Abuse. https://nida.nih.gov/about-nida/noras-blog/2021/05/establishing-5mg-thc-standard-unit-research
[12] Budney, A. J., Borodovsky, J. T., Struble, C. A., Habib, M. I., Shmulewitz, D., Livne, O., Aharonovich, E., Walsh, C., Cuttler, C., & Hasin, D. S. (2022). Estimating THC consumption from smoked and vaped cannabis products in an online survey of adults who use cannabis. Cannabis and Cannabinoid Research. https://doi.org/10.1089/can.2022.0238

loss associated with the method of administration. Factors contributing to THC loss include side-stream smoke released into the air without being inhaled by the user and the use of filters. These multipliers were based on a research study published by Budney et al., which synthesized findings from six laboratory studies to calculate average THC loss for different administration methods.[13]

Dose estimates remained consistent across survey years, shown in Table 14, which strengthens our confidence in the validity of the method used. Due to this consistency, we pooled responses from all survey years to amass a larger survey sample, from which we evaluated dose across different demographic and use pattern variables (Table 15).

Table 14. Median Dose per Occasion (mg/THC) by Product Type

	Flower	Edible	Vape	Concentrate
2022	45.0	8.0	19.2	42.3
2023	47.3	8.0	16.0	49.7
2024	47.2	8.0	16.0	42.2

Table 15 and Figure 15 summarize the median THC dose (mg) per use occasion, categorized by respondents' reported qualifying condition and perceived efficacy of medical cannabis. Data from all survey years (2022 to 2024) were pooled for this analysis. The summary includes only respondents who completed all relevant survey questions. As the dose questionnaire was administered exclusively to past-month cannabis users, these figures reflect the behaviors of this subgroup. For many conditions, THC dose followed a general trend of increasing with higher reported efficacy. However, notable exceptions to this pattern were observed. For PTSD, the highest median doses were reported among those experiencing the least efficacy (49 mg/THC) and the greatest efficacy (42 mg/THC). For severe nausea, the dose remained relatively consistent across all levels of efficacy (33–37 mg/THC). Additionally, for anorexia and cachexia, the dose peaked at the "very effective" level and decreased slightly at the highest efficacy level, "extremely effective."

[13] Budney, A. J., Borodovsky, J. T., Struble, C. A., Habib, M. I., Shmulewitz, D., Livne, O., Aharonovich, E., Walsh, C., Cuttler, C., & Hasin, D. S. (2022). Estimating THC Consumption from Smoked and Vaped Cannabis Products in an Online Survey of Adults Who Use Cannabis. Cannabis and Cannabinoid Research, can.2022.0238. https://doi.org/10.1089/can.2022.0238

Table 15. Median Dose (mg/THC) by Qualifying Condition and Perceived Efficacy: 2022, 2023, and 2024 samples pooled

	Perceived Efficacy of Cannabis for Treating Qualifying Condition				
	Not effective	Slightly	Moderately effective	Very effective	Extremely effective
Overall (all conditions)					
Dose	24.6	18.0	25.5	27.0	36.0
Anorexia					
Dose	^	^	29.8	40.2	37.3
Cachexia or wasting syndrome					
Dose	^	^	27.0	35.5	23.4
Glaucoma					
Dose	^	27.0	33.8	33.8	65.5
Other chronic condition					
Dose	8.0	13.0	20.3	26.3	33.8
PTSD					
Dose	48.9	26.6	27.0	33.8	42.3
Seizures					
Dose	^	^	30.2	45.0	67.5
Severe nausea					
Dose	^	33.3	35.5	33.8	36.8
Severe or chronic pain					
Dose	8.0	18.0	25.5	30.2	37.4
Severe or persistent muscle spasms					
Dose	^	14.1	25.9	30.2	43.5

^ small sample size (n < 10)
Highlighted cells indicate the highest dose for each condition and efficacy level.
Findings in this table are not intended as medical advice. Patients should always consult a healthcare provider for medical concerns.

Figure 15. Median Dose (mg/THC) per Occasion by Qualifying Condition and Perceived Efficacy: 2022, 2023, and 2024 samples pooled

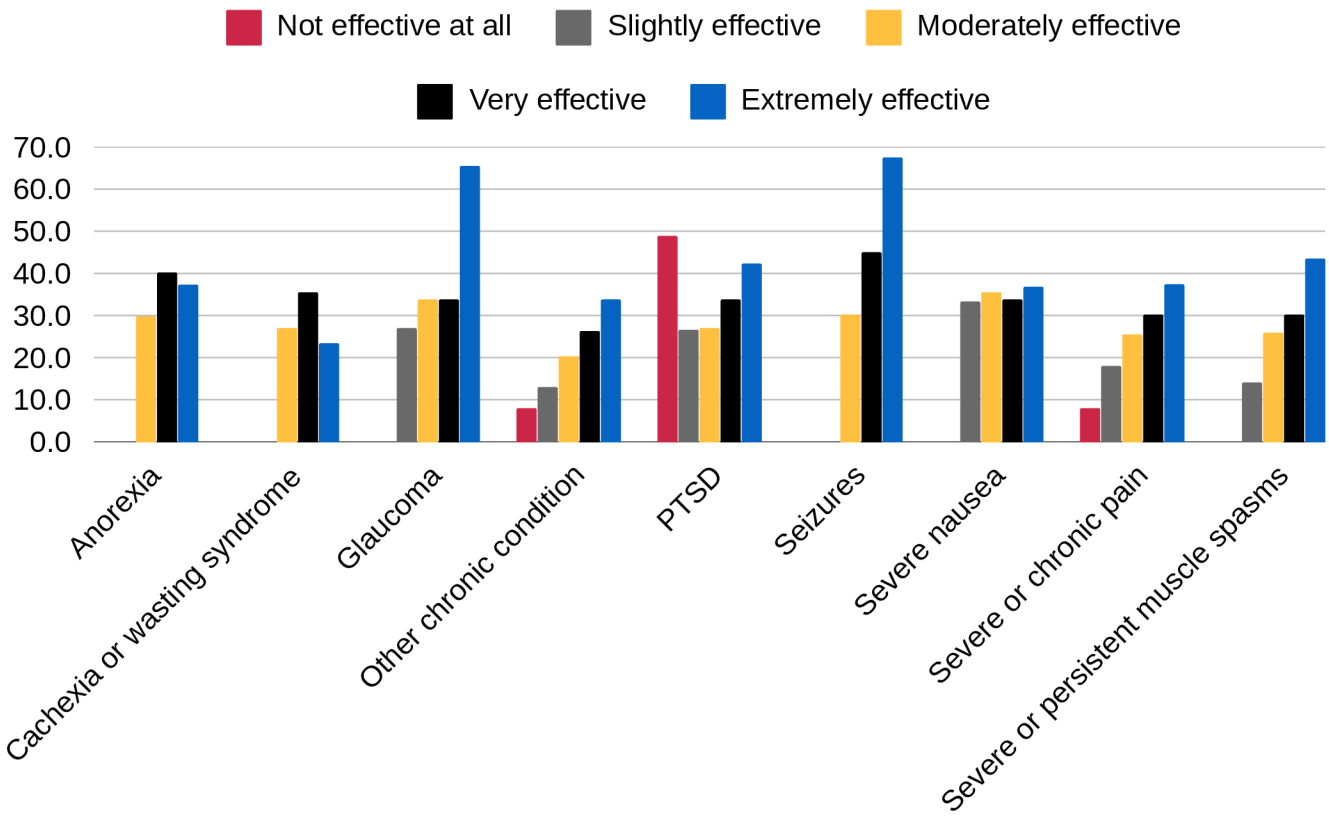


Table 16 displays the pooled median dose by select demographic characteristics (see also Appendix A). Females generally reported lower median dose per occasion, except for when using flower. The highest median dose was reported among those who identify as transgender male (35.4 mg/THC). There was a declining trend of median dose by age, with the highest doses, both over 40 mg/THC per occasion, in 18-20 and 21-25 year olds. The lowest dose was in the oldest age groups, with those 76+ reporting a median of 18 mg/THC per occasion.

Table 16. Median Dose (mg/THC) by Method of Administration and Demographic Characteristics: 2022, 2023, and 2024 samples pooled

	mg/THC per Occasion (mdn)				
	Flower N=14,206	Edible N=7,421	Vape N=5,129	Concentrate N=1,037	Overall N=27,793
Full sample (all survey years)	47.0	8.0	18.0	42.0	30.0
Gender identity					
Male	45.0	8.0	19.5	42.3	33.8
Female	52.5	8.0	15.9	42.3	26.6
Transgender female	34.9	8.0	^	^	26.2
Transgender male	67.5	10.5	21.3	^	35.4
Nonbinary	47.3	8.0	16.0	43.0	30.2
Other, not included above	36.0	^	^	^	33.8
Prefer not to answer	45.0	8.0	13.3	49.7	34.6
Age group					
18 to 20	65.6	8.0	26.6	56.3	42.2
21 to 25	67.5	8.0	23.0	49.7	45.0
26 to 35	67.5	8.0	16.9	42.3	37.2
36 to 45	63.0	8.0	16.9	42.3	33.8
46 to 55	54.0	8.0	18.1	42.3	30.2
56 to 65	45.0	8.0	16.0	42.3	26.6
66 to 75	36.8	8.0	15.9	43.0	20.2
76 or older	34.9	8.0	15.1	^	18.0

^ small sample size (n < 10)

(mdn) = median

Table 17 presents the median THC dose per occasion, categorized by respondents' answers to the question: “Who has been your primary source of information on the appropriate/effective THC dose for your certifying condition?” Respondents who identified their primary care providers as their main source reported the highest median dose (35.5 mg THC), while those who relied on “other healthcare providers” reported the lowest (25.5 mg THC). Among the three primary information sources within the medical program—certifying providers, clinical directors, and dispensary agents (budtenders)—the median dose was consistent at 33.8 mg THC. Continued study on dose by method is needed, in particular to understand why flower dose is higher than vape, which typically have higher THC percentages. Reasons could include differences in how much THC is actually inhaled (i.e., how readily available THC is by method) as well as use characteristics (i.e., more flower is typically smoked per session than vape).Furthermore,

it should be reiterated that definitive dose recommendations have not been established for medical or adult-use purposes. Use of the lowest effective THC dose helps reduce risks for cannabis-induced adverse experiences and CUD.

Table 17. Median dose (mg/THC) per occasion grouped by response to the question, "Who has been your primary source of information on THC dose appropriate/effective for your certifying condition?"

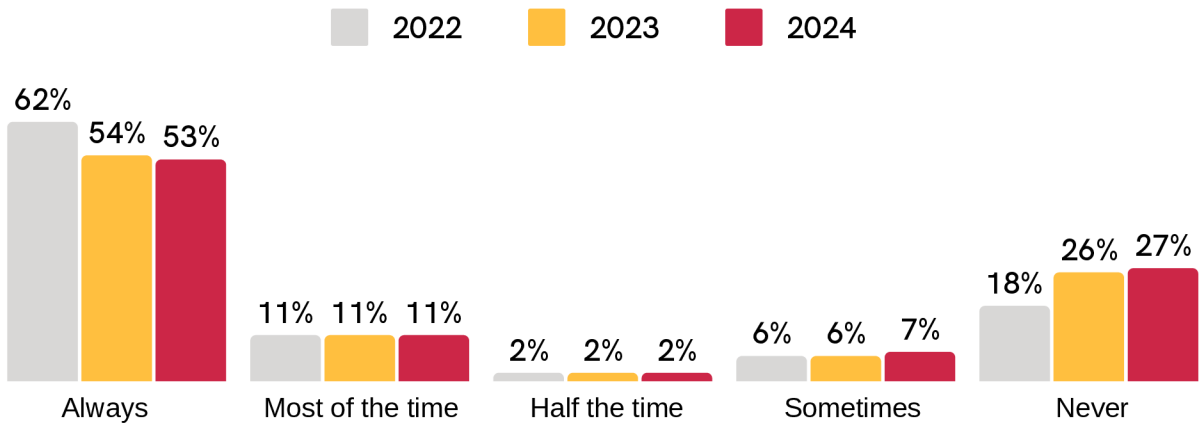
	% of sample	Dose per occasion
Primary care provider (PCP)	4.0%	35.5 mg/THC
Certifying provider	22.0%	33.8 mg/THC
Clinical director	6.0%	33.8 mg/THC
Dispensary agent (budtender)	30.0%	33.8 mg/THC
None of the above / NA	35.0%	30.2 mg/THC
Other healthcare provider	3.0%	25.5 mg/THC

Section 4. Public Health Indicators

4.1. How many patients keep their cannabis securely locked?

In the 2022, 2023, and 2024 surveys, respondents were presented with questions inquiring about their use and storage of cannabis in their home. Approximately 44% of respondents reported that they “never” smoke cannabis and 39% “never” vape cannabis inside their home. These findings indicate that slightly fewer medical patients are inhaling cannabis inside their homes compared to the 2022 and 2023 surveys, in which 40% reported “never” smoking inside their home and 35% and 36% reported “never” vaping inside their home. When examining cannabis storage practices inside the home, 53% of respondents in the present sample reported that they “always” store their cannabis in a locked, safe location and 27% “never” store their cannabis in a locked location. See Figure 16. These findings are virtually unchanged from the 2023 survey, in which 54% “always” and 26% “never” stored their cannabis in a locked, safe location.

Figure 16. Frequency of Storing Cannabis in a Locked Location, 2022-2024

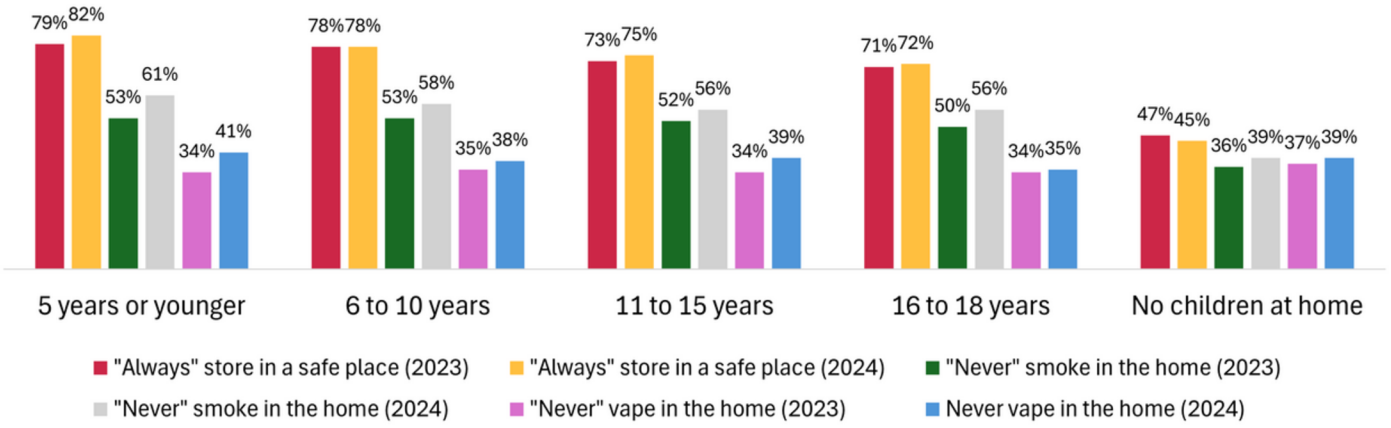


It is crucial for cannabis to be safely stored in a locked location away from others, especially if children are present in the home, to prevent accidental consumption. To further examine safe storage practices among respondents, these data were grouped by whether or not they reported having children under the age of 18 residing in the household. See Figure 17. Significant differences did exist between the two groups, such that respondents with at least 1 child in their household reported storing cannabis in a safe, locked location more often, on average, than those who do not have children in their household. These data were consistent

between the 2023 and 2024 surveys. Specifically, among those with at least 1 child under the age of 18 residing in their household, over three-quarters (75.8%) reported that they “always” store cannabis in a locked, safe location, nearly 11% keep their cannabis locked away “most of the time,” and 8% “never” lock away their cannabis. Among those who do not have children residing in their household, 45% “always” keep their cannabis locked away, 11% keep their cannabis locked away “most of the time,” and 34% “never” lock away their cannabis. Not having children in the household, older age, and riskier cannabis use behaviors (DUIC and CUD) significantly predicted likelihood of unsafe cannabis storage practices, when controlling for demographic variables.

Given that children are also at increased risk of harm for secondhand exposure to cannabis smoke and vapor, prevalence of smoking or vaping cannabis inside the home was also examined by the status of having a child present in the household. See Figure 17. Among those with at least 1 child under the age of 18 residing in their household, 22% and 28% reported that they smoke or vape cannabis inside their house at least most of the time, and 56% and 38% “never” smoke or vape cannabis inside their house. Among those without children in their household, 42% and 33% smoke or vape cannabis inside their house at least most of the time, and 39% “never” smoke or vape cannabis inside their house. These differences were significant, such that those with at least 1 child under the age of 18 reported smoking or vaping in their house less often, on average, than those who did not have children in their household. Altogether, these findings remain consistent with the 2023 report, indicating that respondents with children of any age in the household report greater frequency of storing cannabis in a safe, locked location, and less frequency of smoking or vaping in their home compared to those without children. These findings are positive such that medical patients appear to be consistent in their safe storage and use of cannabis products within the home, particularly among those with children residing in the home; however, there is opportunity to further increase these protective behaviors by offering continuing education and reminders at the point of sale about the safe storage of cannabis. Additionally, dispensaries should be encouraged to offer affordable lockable boxes or bags for sale.

Figure 17. Frequency of Safe Storage and Use in the Home; Grouped by Age of Children and Survey Year



Edible cannabis products pose a unique risk for unintentional ingestion or exposure to cannabis, particularly among children, as they often resemble other types of food (e.g., chocolate, candies, drinks) and children may mistake these products for a regular food item. Due to these risks, it is imperative that these types of cannabis products are securely locked away from children to avoid unintentional ingestion. To address these specific concerns, safe storage practices were further examined by consumption of edible cannabis products among respondents with a child in the household. Among respondents with at least 1 child under the age of 18 in the household who consumed edible cannabis products at least 1 day within the past month, 76% indicated that they “always” store cannabis in a locked, safe location. These findings were nearly identical among those who are very frequent consumers (i.e., 21 or more days of use within the past month) of edibles (75%). Similar findings were established among those who frequently use other forms of cannabis, including smoking (76%), vaping (75%), and dabbing (78%). Overall, these findings indicate that there appear to be equivalent cannabis storage practices among respondents in this sample with children in the household who consume edible cannabis products compared to other types of cannabis products. These findings should continue to be evaluated in future research to ensure ongoing safe cannabis storage practices.

4.2. How common is driving under the influence of cannabis (DUIC)?

Patterns and perceptions relating to DUIC (defined as driving/operating a car or other motor vehicle within three hours of consuming cannabis) were assessed in this study. Over one-third (34%) of respondents reported at least one day of DUIC within the past month, which is a slight decrease from the 2023 survey sample (39%). Given that 18% of respondents from

the 2022 survey reported DUIC in the past month, the increased prevalence indicates that adult-use legalization may have initially influenced DUIC in Maryland, which has appeared to have stabilized over the past year. Among those in the present sample, 13% reported DUIC six or more times in the past month, a 5% decrease from 2023.

Respondents were also asked about their perceived risk of harm of driving while driving under the influence (i.e., not at all, a little, moderately, and very harmful). Whereas 99% of respondents reported that driving under the influence of alcohol is “very harmful” or “moderately harmful,” only 60% reported the same for DUIC. Similar to findings from the MMCPS-23, perceived risk of harm of DUIC was inversely related to reported DUIC days. As presented in Figure 18, respondents who perceive greater risk of DUIC reported fewer DUIC days in the past month compared to those who perceive lower-to-no risk of harm. With each decreasing level of perceived risk of harm, DUIC days increased steadily. Lower age, lower risk/harm perceptions of DUIC, greater past-month cannabis use frequency, and higher CUD scores significantly predicted greater average past-month DUIC days, even when controlling for factors such as gender identity and cannabis dose per occasion.

Figure 18. Mean Days of DUIC in the Past Month by Perceived Risk of Harm of DUIC; 2024 vs 2023 Survey

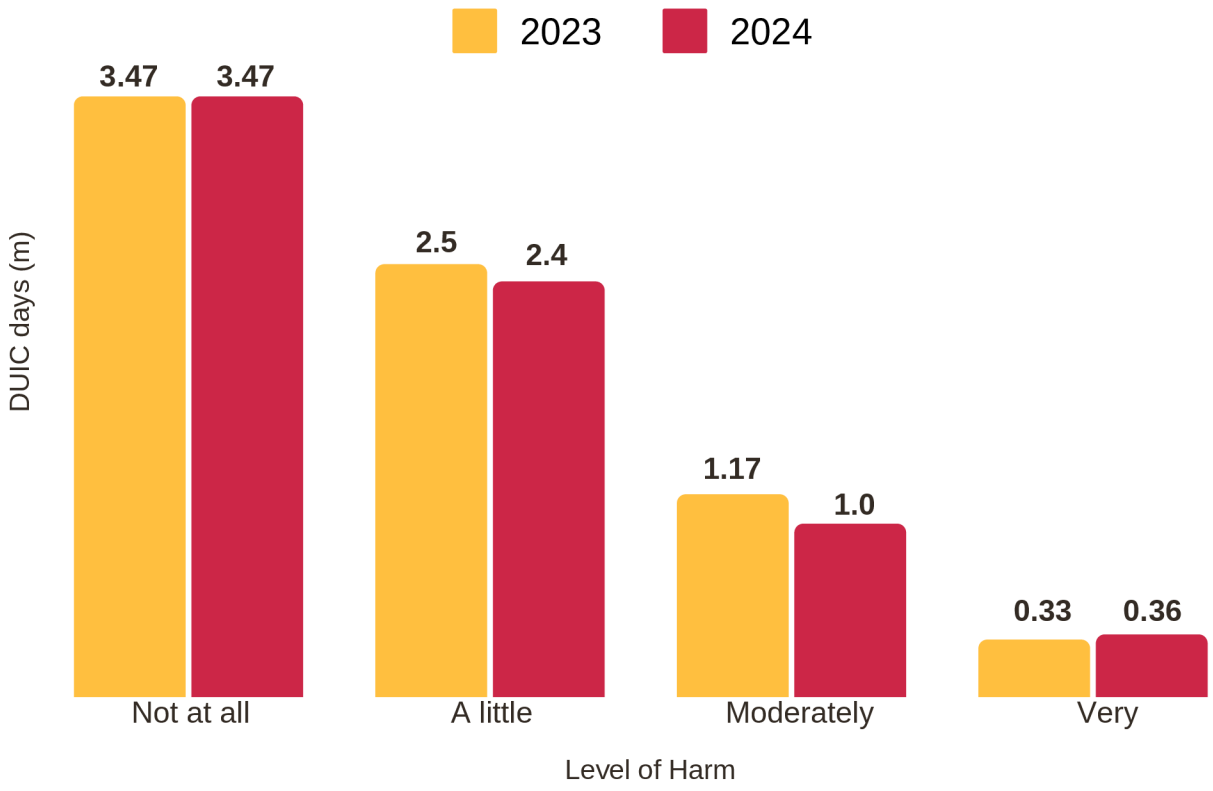


Table 18. Demographic Information and Cannabis Use Patterns; Grouped by Past-Month DUIC Days

1 DUIC Days	
Age (m)	48.9
Gender Identity	
Male	38.2%
Female	59.1%
Past-month cannabis use days	22.7
CUD	43.4%
2-5 DUIC Days	
Age (m)	49
Gender Identity	
Male	43.4%
Female	53.7%
Past-month cannabis use days	25.4
CUD	45.0%
6+ DUIC Days	
Age (m)	45.5
Gender Identity	
Male	49.0%
Female	48.1%
Past-month cannabis use days	28.3
CUD	47.0%

Acute cannabis intoxication produces a range of neurocognitive and psychomotor impairments and is associated with negative effects on driving performance and increased risk of motor vehicle accidents.[14] Although most individuals are aware of the impairing effects of alcohol on driving abilities, fewer are aware of the impairing effects of cannabis.[15] DUIC is considered to be a growing public health concern; therefore, it is vital that cannabis consumers receive education to inform them of the risks of cannabis intoxication and driving impairment. Although effective strategies to improve DUIC education are scarce in scientific literature, continued surveillance of DUIC perceptions and patterns will provide valuable insights for the public health field. Table 18 presents demographic information and cannabis use patterns of respondents with at least 1 DUIC day per month, to help inform strategies to educate consumers about DUIC risks.

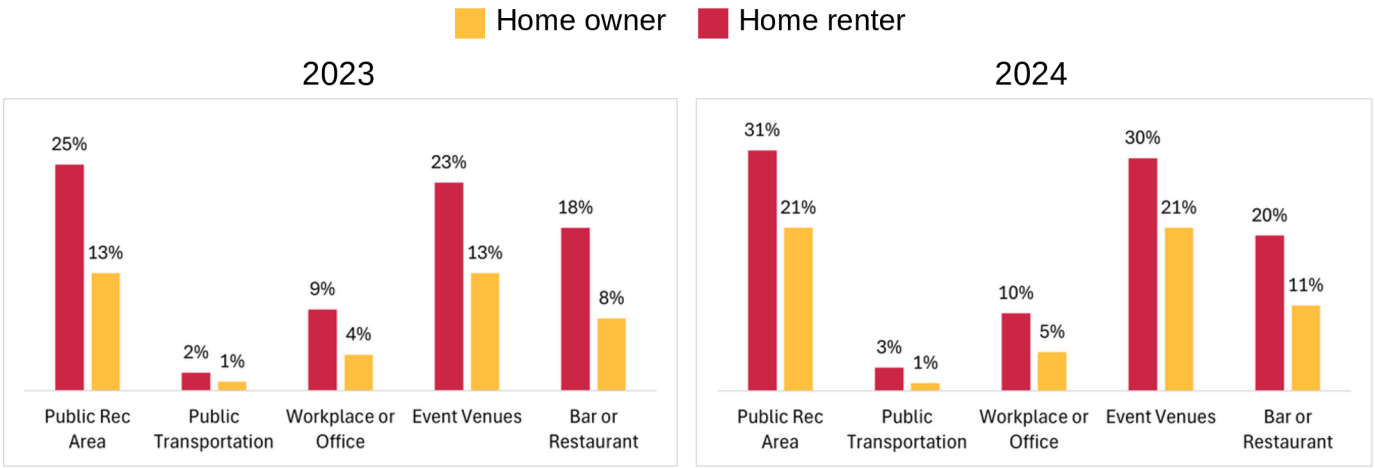
[14] Busardò, F. P., Pellegrini, M., Klein, J., & di Luca, N. M. (2017). Neurocognitive correlates in driving under the influence of cannabis. CNS & Neurological Disorders-Drug Targets, 16(5), 534-540. https://doi.org/10.2174/1871527316666170424115455
[15] Donnan, J. R., Drakes, D. H., Rowe, E. C., Najafizada, M., & Bishop, L. D. (2022). Driving under the influence of cannabis: Perceptions from Canadian youth. BMC Public Health, 22(1), 2384. https://doi.org/10.1186/s12889-022-14658-9

4.3. Where is cannabis consumed outside the home?

Survey respondents were presented with questions inquiring about the frequency with which they smoke or vape cannabis in a variety of public locations. Thirty-five percent of respondents in this sample reported smoking or vaping cannabis in one or more public locations in the past month, which is nearly identical to findings from the MMCPS-23 (36%). Public recreation areas (25%) and event venues (25%) were the most common public locations that respondents reported smoking or vaping cannabis, which is higher than findings from the MMCPS-23 (17% and 16% respectively).

These variables were also examined by homeownership status – homeowners (63.3%) and home renters (36.7%). We observed an increase in consumption of cannabis in all public locations among both homeowners and home renters when comparing these findings to the MMCPS-23. Public recreation areas (21% and 31%), event venues (21% and 30%), and bars or restaurants (11% and 20%) were the most common public locations that homeowners and renters, respectively, reported consuming cannabis. Among respondents in this sample, significantly more home renters than homeowners reported smoking or vaping cannabis in a public location in the past month (43% vs 31%). These findings are not unexpected, as renters may experience additional limitations on locations to consume cannabis compared to homeowners and therefore may choose to consume cannabis in locations outside of their home.

Figure 19. Percent of Respondents Who Smoked or Vaped Cannabis in Each Location in the Past Month; Grouped by Renter Status and Survey Year



Among those who rent their apartment or home, 31.5% reported that their lease agreement prohibits or bans smoking and/or vaping cannabis. Despite this ban, over 50% of these individuals smoked cannabis and 65% have

vaped cannabis inside their home within the past year, with nearly 20% reporting that they “always” smoke or vape cannabis inside their home. Most (80%) of these respondents reported that they “never” smoke or vape cannabis in their car while driving, indicating that most respondents with a rental lease that prohibits cannabis consumption consume cannabis in another location or inside their home, rather than in their vehicle.

The MMCPS-24 included a question about cannabis consumption lounges (which are not currently licensed nor operational in Maryland) which could provide an additional legal space to consume cannabis. Among the full sample, 54% of respondents expressed that they would visit an adult-use cannabis club, café, lounge, or social consumption site if one was available where they live. Most (83%) of these respondents would be interested in a variety of cannabis products/consumption methods to be permitted at an adult-use cannabis consumption lounge, including edibles, smoking, and vaping. Significantly more respondents who already consume cannabis in a public location reported interest in a cannabis consumption lounge, compared to those who do not already consume cannabis in a public location. Additionally, renters were more likely to report interest in a cannabis consumption lounge compared to homeowners (65.1% vs 46.8%).

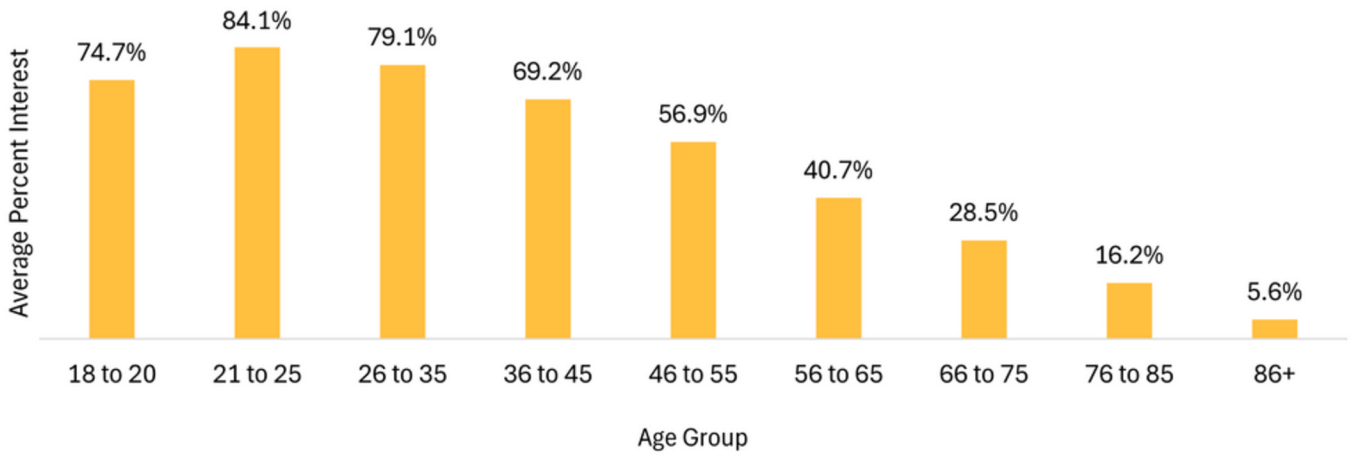
Table 19. Percent of Respondents Reporting Interest in Cannabis Consumption Lounge; Grouped by County

County	%
Baltimore City	66.0%
Allegany County	63.0%
Garrett County	62.0%
Dorchester County	61.0%
Anne Arundel County	56.0%
Washington County	56.0%
Cecil County	55.0%
Prince George's County	55.0%
Somerset County	55.0%
Talbot County	55.0%
Caroline County	54.0%
Harford County	54.0%
Statewide (all counties)	53.0%
Frederick County	53.0%
Wicomico County	53.0%
Baltimore County	52.0%
Queen Anne's County	52.0%
St. Mary's County	51.0%
Worcester County	51.0%
Carroll County	50.0%
Charles County	50.0%
Howard County	48.0%
Calvert County	47.0%
Montgomery County	47.0%
Kent County	39.0%

When examining interest in cannabis consumption lounges by county, respondents in Baltimore City, Allegany County, Garrett County, and Dorchester County reported the most interest (>60%) and respondents in Howard County, Calvert County, Montgomery County, and Kent County reported the lowest interest (<50%). Please refer to Table 19 for more detailed information. Interest in cannabis consumption lounges decreased with age, with 21-to-25-year-olds reporting the highest interest out of all age groups and a steady decline in interest as age increased. Lower age, higher past-month cannabis consumption frequency, higher income, decreased risk perception of driving high, and more past-month DUIC days each significantly predicted interest in cannabis consumption lounges.

There appear to be differences in risk perceptions and risky behaviors among those with interest in cannabis consumption lounges. Among respondents who were uninterested or unsure of cannabis consumption lounges, 57% reported that it is “very risky” to drive “a little high” compared to 39% of respondents who expressed interest in a cannabis consumption lounge. 43% of respondents who were interested in a cannabis consumption lounge reported at least 1 DUIC day in the past month, compared to 24% of those who were uninterested or unsure. Education about (1) the impairing effects of all forms of cannabis (2) the risks of driving while under the influence of cannabis (3) utilization of designated drivers or rideshare services will be imperative to reduce risks of harm associated with cannabis use at a consumption lounge.

Figure 20. Percent Reporting Interest in a Cannabis Consumption Lounge; Grouped by Age



4.4. What insights can be gained on cannabis use in pregnancy?

Nearly 1.5% of respondents indicated that they were currently pregnant and/or breastfeeding at the time of the survey (n = 101). This percentage of pregnant and/or breastfeeding respondents is similar to the 2022 and 2023 survey samples (1% each year). Of these 101 respondents, 30% reported that they have not consumed cannabis in the past 30 days, 12% consumed cannabis on 1-4 days within the past month, and 36% consumed cannabis each day within the past month. Smoking (10.7 days), vaping (9.2 days), and edibles (7 days) were the most common cannabis consumption methods among pregnant and/or breastfeeding respondents. When examining cannabis dose, pregnant and/or breastfeeding respondents reported consuming a median of 34mg/THC per occasion, compared to 33mg/THC among those not currently pregnant and/or breastfeeding. It is important to note that the American College of Obstetrics and Gynecologists (ACOG),[16] the American Academy of Pediatrics (AAP),[17] and other medical experts recommend against cannabis use, as there is no amount of cannabis known to be safe during pregnancy.

Approximately 52% of currently pregnant and/or breastfeeding respondents reported consuming at least one substance (e.g., tobacco, alcohol, psychedelics, benzodiazepines, stimulants, opioids) other than cannabis in the past month, which parallels findings from the 2023 survey (53%). Thirty-two percent of pregnant and/or breastfeeding respondents selected that cannabis use during pregnancy should be a primary public education topic, as opposed to 11% of those not currently pregnant and/or breastfeeding. Findings suggest tailored educational materials for pregnant and breastfeeding populations are needed (and materials may be beneficial for non-medical populations as well).

4.5 How common are adverse (unwanted) consumption experiences?

Forty-eight percent of respondents reported experiencing at least one adverse experience after consuming cannabis in the past year. Anxiety was the most common adverse experience (36.9%), followed by panic (16.6%), breathing problems (14.3%), and psychotic or paranoid feelings (13.7%). However, few reported experiencing each event more than “once or twice”

[16] https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2017/10/marijuana-use-during-pregnancy-and-lactation
[17] https://publications.aap.org/pediatrics/article/142/3/e20181889/38625/Marijuana-Use-During-Pregnancy-and-Breastfeeding?autologincheck=redirected

in the past year. When comparing these findings to the 2022 survey, prevalence of experiencing these events remains similar. The largest difference was a 6.7% increase in experiences of anxiety following cannabis consumption between 2022 and 2024. Please refer to Table 20 for further information.

Table 20. Percent of Respondents Experiencing Each Adverse Event; Grouped by Survey Year

	2022	2024
Anxiety	30.2%	36.9%
Panic	16.4%	16.6%
Psychotic or paranoid feelings	12.8%	13.7%
Suicidal thoughts or ideation	2.8%	2.8%
Breathing problems	10.1%	14.3%
Nausea/vomiting	9.0%	9.6%

Cannabis hyperemesis syndrome (CHS) is a rare condition characterized by cyclical nausea, vomiting, and abdominal pain after consuming cannabis.[18] When it occurs, CHS is typically found in daily long-term consumers of cannabis. To better understand potential adverse experiences associated with cannabis consumption, respondents in this survey were asked about their experiences with CHS. Very few (1.7%) reported that they have experienced CHS in their lifetime. Among those who have experienced CHS, 25% were 26-to-35 years of age and 21% were 36-to-45 years of age, with 58% identifying as female. Median THC dose was twice as high among those who experienced CHS (62 versus 30 mg THC). Other risky cannabis use behaviors, including DUIC and CUD significantly predicted likelihood of experiencing CHS among those in this sample, when controlling for factors such as income, gender, and past-month cannabis use frequency.

[18] https://www.ncbi.nlm.nih.gov/books/NBK549915/

Table 21. Demographic Information Among Those Experienced CHS (n = 209)

Age Group	
18-to-20	4.3%
21-to-25	6.7%
26-to-35	25.4%
36-to-45	21.1%
46-to-55	14.4%
56-to-65	15.8%
66-to-75	10.5%
76-to-85	1.9%
Gender Identity	
Male	37.3%
Female	58.4%
Transgender male	1.4%
Non-binary	2.4%
Prefer not to answer	0.5%
Transgender female	0%

4.6. How prevalent is cannabis use disorder (CUD)?

A revised version of the Cannabis Use Disorder Identification Task (CUDIT-SF) was used to assess prevalence of cannabis use disorder (CUD). In the MMCPS-23 and MMCPS-24, the CUDIT-SF asked respondents three questions about the frequency with which they have experienced adverse side effects or outcomes related to cannabis use in the past 6 months. Likert scale response options ranged from 0 (never) to 3 (daily), and summed scores of 2 or higher indicate that the individual met criteria for CUD, per the standard CUDIT-SF cut-score. Approximately 36% of the present sample met criteria for CUD, which is similar to findings from the MMCPS-23 (33%) and consistent with prevalence reports in related literature.

Among those who met criteria for CUD, most (56.5%) identified as female, and the median age was between 46-55 years old. Only 7.1% of those with CUD were in the 18-to-25-year age range. Individuals qualifying for CUD indicated that they consume cannabis nearly 24 days per month, on average, consume cannabis primarily for medical purposes (94%), and used an average dose of 63.4 mg THC per use occasion. These findings are nearly identical to the MMCPS-23, indicating general stability in rates of CUD and cannabis use patterns among those qualifying for CUD since adult-use legalization. Please refer to Table 22 for detailed information.

Respondents qualifying for CUD in this sample exhibited riskier cannabis use behaviors compared to those who did not qualify for CUD, such as significantly more DUIC days in the past month, lower risk perceptions and lower harm ratings for the dangers of driving under the influence of cannabis. These respondents also reported significantly more adverse experiences following cannabis consumption, including anxiety, panic, psychotic or paranoid feelings, and CHS. "Comfort" ratings with discussing cannabis use also differed between these groups, such that respondents qualifying for CUD reported lower levels of comfortability discussing their cannabis use with family, their PCP, and other healthcare providers compared to those who did not qualify for CUD. Interestingly, there were no differences in comfort discussing cannabis use with friends between these groups, indicating greater perceived stigma from family, PCPs, and healthcare providers among those qualifying for CUD.

Table 22. Characteristics of Those Who Did and Did Not Meet the Criteria for CUD

Met Criteria for CUD	Cannabis use Days/month (m)*	Alcohol use days/month (m)*	mg/THC Dose (m)*	DUIC days/month (m)*	% of total cannabis use that is for nonmedical reasons (m)*
2023					
Yes	23.8	4.5	63.6	2.1	15.0%
No	21.3	4.9	52.6	1.4	10.0%
2024					
Yes	23.7	4.4	63.4	1.8	6%
No	22	4.6	51.9	1.3	5%

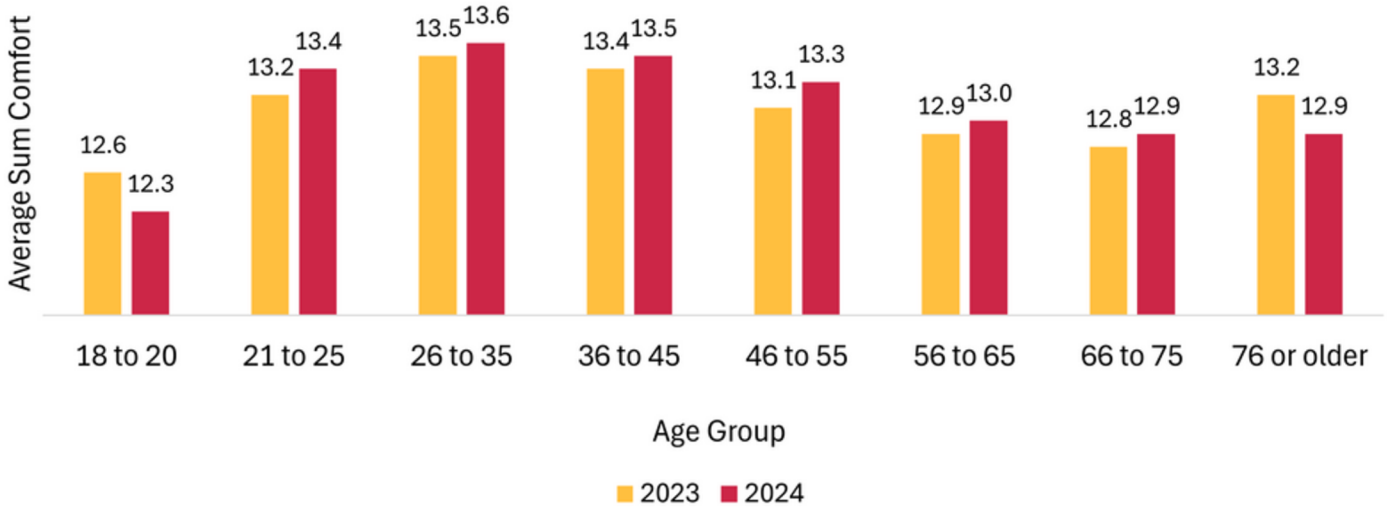
* Statistically significant at p = .05

(m) = mean or average

4.7. To what extent are respondents experiencing stigma?

Respondents' level of comfort ("very uncomfortable" to "very comfortable") discussing their cannabis use with friends, family, their primary care provider (PCP), and other healthcare providers was used as a proxy for measuring perceived stigma in the 2023 and 2024 surveys. Overall, most respondents reported that they are comfortable discussing their cannabis use with family (78.8%), friends (84.7%), their PCP (82.7%), and other healthcare providers (76.9%). These findings were consistent across survey administration years, indicating minimal impact of adult-use legalization on patient stigma associated with cannabis consumption. Figure 21 shows the average total comfort score, which sums responses to the four comfort questions by age groupings and by survey administration year. Summed scores of 0 equate to low comfort/high stigma and scores of 16 equate to high comfort/low stigma. Total comfort scores were equally high for both the 2023 and 2024 surveys across all age groups (13.1 on average for each survey). Parallel to findings from the 2023 survey, those in the 18-to-20-year-old group reported the lowest comfort ratings (12.3 on average) and those in the 26-to-35-year-old group reported the highest comfort ratings (13.6 on average). Young and middle-aged adults (those 18-to-55-years) reported greatest comfort in discussing their cannabis use with friends compared to those in all other categories, including their PCP. However, those 66-years-old and older reported lower comfort discussing cannabis use with friends and greatest comfort discussing cannabis use with their PCP. Altogether, these findings indicate that although perceived stigma associated with cannabis consumption is low in this sample of medical cannabis patients, there appear to be age-related differences, such that younger adults (18-to-20-year-olds) and older adults (56-year-olds and older) perceive greater stigma and exhibit lower comfort discussing their cannabis use compared to the ages in between those two groups, and differ in their level of comfortability in discussing their cannabis use depending upon the type of person (e.g., friends vs PCP). Healthcare providers should be aware of these demographic differences and prioritize conversations about cannabis use with those who may experience lower comfort discussing their use of cannabis.

Figure 21. Average Summed Scores of Comfort Discussing Cannabis Use with Friends, Family, PCP, and Healthcare Providers by Age Groups; Grouped by Survey Year



4.8. What cannabis-related public education is needed?

Respondents were asked to choose the top three most important topics on which to educate the public about cannabis use from a selection of 13 options. Potential benefits to mental health (50.4%), educating healthcare providers about cannabis use (43.6%), and potency, dosage, and delayed onset of products (32.2%) were selected as the top educational priorities by respondents. These findings generally align with the MMCPS-23 and MMCPS-22 surveys, in which educating healthcare providers about cannabis use and mental health were selected as the top public education priorities for each respective survey. Potency, dosage, and delayed onset of products was selected as one of the top priorities across all 3 surveys, indicating consistent interest in this topic among medical patients. A decline in the rating of importance of educating healthcare providers about cannabis use was observed in the present survey compared to the MMCPS-23.

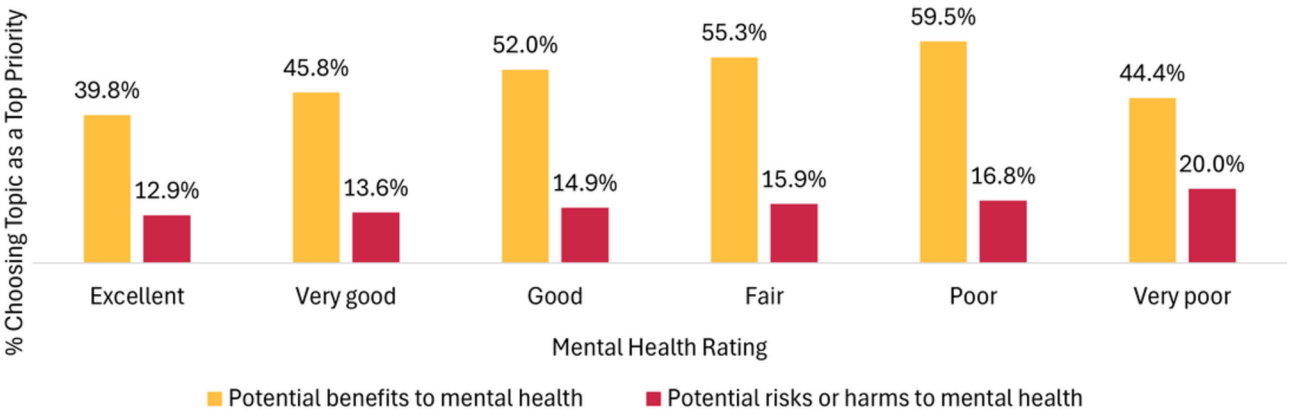
Importantly, there were slight differences in response options across the 2022-2024 surveys. For example, “mental health” was a standalone topic in the 2023 and 2022 surveys, whereas in the 2024 survey this was separated into 2 topics (“potential benefits to mental health” and “potential risks or harms to mental health”) in an effort to elucidate the type of mental health education cannabis consumers are most interested in. In the present survey, only 14.7% of respondents selected that potential risks or harms to mental health was a priority education topic, which is a stark contrast to the

potential benefits of mental health response option, in which half of the sample selected this as a priority. This finding highlights respondents' greater interest in education about cannabis' potential benefits vs risks to mental health. Given the risks of harm reported in the literature, we strongly recommend that public education include both potential benefits and risks to mental health, to provide a well-informed understanding of the impacts of cannabis use on mental health as a whole.

Table 23. Top 3 Cannabis-Related Public Education Priorities; Grouped by Survey Administration Year

	Priority 1	Priority 2	Priority 3
2022	Mental health	Potency, dosage, and delayed onset	Differences between THC and CBD
2023	Educating healthcare providers	Mental health	Potency, dosage, and delayed onset
2024	Potential benefits to mental health	Educating healthcare providers	Potency, dosage, and delayed onset

FIgure 22. Percent Selecting Potential Benefits and Risks to Mental Health as a Top Education Priority; Grouped by Mental Health Rating



Given the interest in mental health as a public education topic across all survey waves, we also examined respondents' interest in mental health education topics as a function of their own reported mental health quality. Generally, more respondents who provided lower ratings for their mental health selected "potential benefits to mental health" as a top public education priority compared to those who provided higher ratings for their mental health. Interest in "potential risks to mental health" as a public education priority trended in the same direction; however, the differences were much smaller between mental health groupings (please refer to Figure 22 for detailed information). On average, most respondents

reported that their mental health is generally “very good” to “good.” Figure 24 shows mental health ratings by average past month cannabis use days. Respondents’ mental health ratings generally declined as cannabis use days increased, with those who rated their mental health as “excellent” reporting an average of 21 days of cannabis use in the past month and those who rated their mental health as “poor” reporting an average of 24 days of cannabis use in the past month.

Figure 23. Past Month Cannabis Use Days Grouped by Mental Health Rating

Section 5. Key Insights/Recommendations

This section outlines key recommendations to strengthen the Maryland Cannabis Administration's (MCA) medical cannabis program as well as key public health protection efforts and educational needs, based on findings from the MMCPS and related research.

5.1. Program Enhancements

Clear Communication of MCA's Continued Commitment to the Medical Program

The MCA's medical cannabis program is undergoing a phase seen in many other states: a decline in patient numbers over the past eighteen months since the introduction of licensed sales of adult-use cannabis. As anticipated, some registered patients have shifted to purchasing cannabis in the adult-use market, drawn by fewer barriers and competitive pricing. However, a dedicated group of medical cannabis patients is expected to remain in the program to continue benefiting from the advantages it offers.

Recommendations: Communicate MCA's commitment to its medical cannabis program and its patients by reviewing and developing up-to-date information that clearly explains the MCA registration and annual provider certification processes to current and potential patients, as the current report identified confusion among a large proportion (40%) of respondents about differences between these administrative processes. Relatedly, review internal and external documents that reference MCA's patient registration and annual recertification processes (e.g. FAQs, fact sheets, webpages,) to ensure clear and consistent use of terminology, and update as needed. Additionally, maintain the benefits of patient-only features, including sales tax exemptions and benefits at the point-of-sale, such as patient-only lines and a broader offering of products for medical purposes. Strengthen access to and availability of clinical expertise and guidance for patients that includes medical recommendations as well as information that covers contraindications for certain medical conditions and other prescription and over-the-counter medications, and assistance with overuse/desire to decrease usage (more on this below).

Enhance Patient Support and Education

The report highlights a consistent call for improved knowledge among medical program professionals, such as certifying providers and Clinical Directors, regarding the availability and appropriate use of cannabis products for qualifying conditions, as well as related topics such as polysubstance use and cannabis use disorder (CUD). Patients who interacted with Clinical Directors reported high levels of satisfaction, but these resources are significantly underutilized.

Recommendation: Expand outreach efforts to increase patient engagement with Clinical Directors or similar support resources. Establishing a centralized patient helpline could be an effective way to increase patients' access to guidance on medical cannabis topics. Additionally, implement point-of-sale educational initiatives to fill knowledge gaps on high priority topics, many of which are also relevant to adult-use consumers, namely CUD, mental health effects, potency, dose, and delayed onset of effects. Printed materials should be developed in large font and include other accessibility considerations, where possible (i.e., reduced reading level, color contrast) as a sizable number of respondents indicated these would be beneficial to them. MCA should also stay informed by monitoring the scientific literature, especially as cannabis rescheduling continues to be a topic of ongoing discussion. Periodic focus groups or qualitative feedback opportunities may be useful for uncovering specific patient support needs and addressing them proactively.

Address Financial Barriers

Costs associated with annual provider recertification were a leading reason cited for program attrition by the 2023 and 2024 MMCPS survey respondents.

Recommendation: Consider implementing a financial assistance program, if viable, to help cover or reimburse for provider certification fees. Additional discounts for scheduling a "follow up" visit during the year could be considered, as most patients report meeting with their certifying provider just once annually. Promoting the medical cannabis patient-certifying provider relationship could have benefits, such as determining what types of products and cannabinoids may be most beneficial for the patient's certifying condition, along titrating THC dosage to determine the lowest amount needed to alleviate symptoms. Conducting a planned evaluation of this initiative would provide valuable insights into its effectiveness in accommodating patient needs.

Expand and Diversify Product Offerings

The survey highlighted the significance for many patients of a "wider availability of strains and products" and availability of products with both high and lower THC potencies.

Recommendation: MCA could work with any relevant boards, councils, and/or industry groups to review and consider expanding the range of available strains and products, particularly focusing on high-potency and low-potency options, which over half of survey respondents said would provide at least a little improvement in their patient experience, and diverse formulations to meet patient needs. MCA should also communicate to industry licensees the types of accessibility accommodations that respondents valued in this survey, including increased availability of ramps, automatic doors, and large font resources

5.2. PSAs for Public Health and Safety

Since the MMCPS-23 survey was conducted, MCA has developed the BeCannabisSmart public education campaign to increase awareness about responsible cannabis use for Maryland adults 21 and over. The campaign has addressed (1) preventing accidental consumption, especially among small children (2) clarifying and encouraging compliance with smoke-free policies, and (3) the hazards of driving under the influence of cannabis (DUIC). The campaigns ran statewide with media placed on a wide range of platforms (linear and streaming TV, billboards, social media and digital ads) and featured printable fact sheets and brief PSA videos made available on a dedicated BeCannabisSmart landing page within MCA's website.[19] Ongoing efforts are essential to further educate both cannabis patients and the broader consumer population on responsible use practices.

In the MMCPS-24, researchers assessed the relationship between the PSA videos on DUIC-related behaviors and perceptions. Participants viewed one of two 30-second PSA videos and were then asked if they had seen the video prior to this exposure. DUIC-related outcome measures were compared between those who had previously seen the video and those who had not. No significant differences were observed between the groups, possibly due to methodological limitations arising from the evaluation being designed post-hoc rather than integrated into the campaign from the outset. One recommendation is to incorporate robust pre/post evaluation methods into future campaigns, and to publicly report evaluation findings, as this would be a meaningful contribution to the field, addressing the existing gap in research on public health messaging.[20]

[19] https://cannabis.maryland.gov/Pages/BeCannabisSmart.aspx
[20] https://www.ncbi.nlm.nih.gov/books/NBK338333

Future PSA Topics

The demand for information and education on mental health and cannabis use has been a consistent theme in the MMPCS. Survey respondents have consistently identified mental health as a priority educational topic. Additionally, medical cannabis uses for mental health conditions, such as anxiety, depression, and PTSD, has been frequently reported among those certified for medical use under the "other chronic condition" category.

MMPCS findings offer valuable insights for framing mental health educational materials. MCA could approach the topic by addressing the perceptions within the patient population. For example, respondents showed greater interest in learning about cannabis' potential benefits rather than its risks to mental health, suggesting that perceptions tend to favor its benefits. However, self-reported mental health ratings generally declined as cannabis use days increased—those rating their mental health as "excellent" used cannabis an average of 21 days, while those rating it as "poor" used it an average of 24 days in the past month. In other words, individuals who used cannabis less frequently tended to report more positive mental health ratings. Given the documented risks of harm in the literature, public education resources should include both potential benefits and risks to mental health, to provide a well-informed understanding of the impacts of cannabis use on mental health as a whole.

Addressing mental health through educational materials requires careful consideration, as definitive evidence on the relationship between cannabis use and mental health remains limited due to restrictions on clinical cannabis research. To navigate these challenges, MCA should involve stakeholders and partner with behavioral health organizations, such as the Maryland Department of Health's Behavioral Health Administration (BHA) and Cannabis Public Health Advisory Board, in the development of educational materials.

MCA could create materials that highlight findings from the MMCPS, acknowledging respondents' strong interest in the topic while providing information on mental health resources. These materials could be made available to consumers at sales points. Collaborating with field experts would bring valuable insights to enhance messaging content and resource lists, while partnerships with these organizations could amplify the reach of the messaging to broader audiences.

Additionally, MCA could encourage patients to discuss mental health and cannabis use with their healthcare providers and advocate for certifying providers to screen for mental health issues. To ensure the materials remain relevant, MCA should plan to monitor emerging research and update resources regularly to reflect the latest evidence.

Recommendation: MCA could present these PSA recommendations to its Cannabis Public Health Advisory Board to assess resources, feasibility, and approaches for development of cannabis-related mental health educational materials and/or expanded PSA opportunities. Additionally, MCA should maintain PSA messaging on existing topics, including drugged driving, preventing accidental consumption, and smoke-free spaces, as reported patient behaviors continue to warrant a need for ongoing education in these areas.

5.3 Future MMCPS Waves

MCA has successfully completed three waves of the Maryland Medical Cannabis Patient Survey (MMCPS), generating key insights into patterns of use, patient perceptions, and program impacts across different phases of adult-use legalization—pre-, mid-, and post-implementation. Conducted in the fall of 2022, 2023, and 2024, each wave has yielded nearly 13,000 or more complete responses, making it, to our knowledge, the largest and longest-running medical cannabis patient survey to date. By continuing the MMCPS, MCA can sustain a critical data source that informs both patient engagement in the medical program and state-level cannabis policy. Key reasons for ongoing data collection include:

- **Proven Value in Annual Reports:** The survey consistently produces rich, actionable data that informs key reports, providing insights into patient needs, usage patterns, and market trends.
- **High Patient Engagement:** Year after year, strong recruitment numbers demonstrate that patients are highly engaged and eager to share their experiences. This rare level of participation should be leveraged.
- **Direct Patient Communication & Feedback:** The survey provides a valuable opportunity to engage with patients at scale, reinforcing MCA's commitment to serving the patient population and addressing their evolving needs.
- **Unique Longitudinal Perspective:** This is the only survey of its kind that spans pre- and post-legalization, allowing for long-term tracking of patient behavior and policy impacts. Continued data collection is essential for evaluating regulatory changes, taxation effects, and broader public health trends, ensuring that policies remain evidence-based and responsive.

To maintain its impact, future waves should continue using the proven methodology that has supported three successful years of data collection. This includes online anonymous data collection, voluntary participation by the entire active certified patient population 18+, and use of incentives for completing the survey. Limiting the survey time-to-completion to approximately 15 minutes and well as continued sharing of survey report findings (accessible on MCA's website) are also recommended. Finally, transitioning to a biannual data collection cycle could be implemented, if desired by MCA. In that case, MCA should clearly communicate this shift in survey cadence given high patient engagement in past cycles.

A key strength of the MMCPS methodology is its flexibility in addressing both patient and program needs. For example, it can be used to evaluate public education materials or assess patient interest in new initiatives, such as the helpline discussed earlier in this report. To free up space for new questions, MCA could replace questions from the MMCPS-24 that were used to investigate specific areas, such as those that explored patients' use of Clinical Directors. However, to ensure continuity and comparability over time, certain core measures should continue to be collected, including:

- **Dose Measurement:** Through the MMCPS, MCA and CPPC developed a novel self-report dose measure, demonstrating both validity and consistency across three survey years. Few, if any, other research groups collect THC dose data at this scale and frequency, making this a valuable contribution to cannabis research.
- **Public health factors and risk behaviors.** Ongoing data collection on use patterns, efficacy, adverse experiences, CUD, driving under the influence of cannabis (DUIC), and risk perceptions remains essential for public health monitoring and policy evaluation.

Appendix A.

Median Dose (mg/THC) by Method of Administration and Demographic Characteristics, 2024 Survey Data

	mg/THC per Occasion (mdn)				
	Flower	Edible	Vape	Concentrate	Overall
Full sample (2024)	47.2	8.0	16.0	42.2	33.8
Gender identity					
Male	45.0	13.0	18.1	42.3	33.8
Female	54.0	8.0	15.1	42.3	27.0
Transgender female	^	^	^	^	26.2
Transgender male	45.0	^	^	^	33.8
Nonbinary	45.0	13.0	14.2	46.3	26.8
Other, not included above	^	^	^	^	31.1
Prefer not to answer	49.9	8.0	13.3	^	37.2
Age group					
18 to 20	63.0	13.0	23.0	^	35.8
21 to 25	63.8	18.0	16.9	33.8	45.0
26 to 35	67.5	8.0	16.0	42.3	36.0
36 to 45	63.0	13.0	18.1	42.3	35.5
46 to 55	63.0	13.0	15.1	43.8	33.8
56 to 65	45.0	13.0	15.1	37.3	27.0
66 to 75	45.0	8.0	15.1	45.1	25.5
76 or older	28.5	8.0	15.1	^	18.0
Qualifying condition					
Anorexia	52.5	8.0	15.1	^	36.0
Severe or persistent muscle spasms	54.0	8.0	13.3	^	33.8
Seizures	81.0	30.5	18.1	^	45.0
Severe or chronic pain	51.0	13.0	15.1	42.3	33.8

Cachexia or wasting syndrome	85.5	^	^	^	31.1
PTSD	63.0	13.0	18.7	42.3	35.5
Severe nausea	45.0	25.5	15.1	28.2	33.8
Other chronic condition	45.0	8.0	18.1	42.3	27.0
Glaucoma	54.0	18.0	12.9	^	35.5

^ small sample size (n < 10)
(mdn) = median
These are not recommended doses. Consult a certifying provider or other healthcare professional for individual guidance on medical cannabis dose.

Appendix B.

The percentages in these descriptive statistics tables reflect only respondents who answered each question; non-respondents are excluded from the calculations. This differs from the descriptive statistics in the appendices of the MMCPS-23 report, which used the full sample size as the denominator, including non-responses.

Table 1. Demographic Characteristics	**2022**	**2023**	**2024**
Age			
18 to 20	215 (1.7%)	191 (1.2%)	150 (1.2%)
21 to 25	677 (5.2%)	578 (3.5%)	315 (2.6%)
26 to 35	2,658 (20%)	2,576 (16%)	1,651 (13%)
36 to 45	3,126 (24%)	3,541 (22%)	2,639 (21%)
46 to 55	2,261 (17%)	2,879 (18%)	2,297 (19%)
56 to 65	2,230 (17%)	3,313 (20%)	2,516 (20%)
66 to 75	1,656 (13%)	2,906 (18%)	2,318 (19%)
76 to 85	173 (1.3%)	437 (2.7%)	372 (3.0%)
86+	13 (<0.1%)	26 (0.2%)	18 (0.1%)
Race			
American Indian or Alaskan Native	70 (0.5%)	98 (0.6%)	72 (0.6%)
Asian	155 (1.2%)	193 (1.2%)	120 (1.0%)
Black or African American	1,937 (15%)	2,655 (16%)	1,950 (16%)
Native Hawaiian or other Pacific Islander	23 (0.2%)	29 (0.2%)	20 (0.2%)
White	9,980 (77%)	12,424 (76%)	9,283 (76%)
More than one race	400 (3.1%)	567 (3.5%)	437 (3.6%)
Other	392 (3.0%)	457 (2.8%)	372 (3.0%)
Hispanic			
No	12,174 (94%)	15,543 (95%)	11,534 (94%)
Yes	826 (6.4%)	887 (5.4%)	726 (5.9%)
Gender			
Female	6,910 (53%)	9,327 (57%)	6,990 (57%)
Male	5,758 (44%)	6,696 (41%)	4,936 (40%)
Transgender female	23 (0.2%)	27 (0.2%)	12 (<0.1%)
Transgender male	28 (0.2%)	41 (0.2%)	44 (0.4%)
Non-binary	168 (1.3%)	204 (1.2%)	186 (1.5%)
Not included above	14 (0.1%)	9 (<0.1%)	7 (<0.1%)
Prefer not to answer	110 (0.8%)	142 (0.9%)	100 (0.8%)
Education			
Less than high school	168 (1.3%)	212 (1.3%)	137 (1.1%)
High school diploma or equivalent	2,227 (17%)	2,854 (17%)	2,043 (17%)
Trade school certificate/diploma	782 (6.0%)	972 (5.9%)	755 (6.2%)
Some college, or associates degree	4,170 (32%)	5,387 (33%)	4,041 (33%)

Table 1. Demographic Characteristics	**2022**	**2023**	**2024**
Bachelor's degree	3,217 (25%)	3,849 (23%)	2,841 (23%)
Master's degree, PhD, or other postgraduate education	2,444 (19%)	3,170 (19%)	2,457 (20%)
Employment status			
Working full-time	7,241 (57%)	8,213 (50%)	6,041 (49%)
Working part-time	1,051 (8.3%)	1,536 (9.3%)	1,072 (8.7%)
Student	238 (1.9%)	300 (1.8%)	240 (2.0%)
Stay-at-home parent or homemaker	599 (4.8%)	659 (4.0%)	504 (4.1%)
Not working	722 (5.7%)	999 (6.1%)	726 (5.9%)
Not working, seeking employment	378 (3.0%)	551 (3.4%)	370 (3.0%)
Retired	2,369 (19%)	4,184 (25%)	3,322 (27%)
Annual household income			
No income	229 (1.8%)	271 (1.7%)	182 (1.5%)
Less than $14,000	592 (4.6%)	693 (4.3%)	426 (3.5%)
$14,000 to $29,999	1,090 (8.6%)	1,364 (8.5%)	989 (8.2%)
$30,000 - $49,999	1,814 (14%)	2,176 (13%)	1,554 (13%)
$50,000 - $74,999	2,006 (16%)	2,516 (16%)	1,940 (16%)
$75,000 - $99,999	1,584 (12%)	2,042 (13%)	1,589 (13%)
$100,000 to $149,999	2,150 (17%)	2,660 (16%)	2,107 (17%)
$150,000 - $199,999	1,064 (8.4%)	1,491 (9.2%)	1,142 (9.5%)
$200,000 or more	981 (7.7%)	1,226 (7.6%)	982 (8.1%)
I prefer not to answer	1,228 (9.6%)	1,695 (11%)	1,146 (9.5%)
County			
Allegany County	196 (1.5%)	258 (1.6%)	208 (1.7%)
Anne Arundel County	1,462 (11%)	1,862 (11%)	1,252 (10%)
Baltimore City	1,225 (9.4%)	1,412 (8.6%)	1,023 (8.3%)
Baltimore County	2,274 (17%)	2,833 (17%)	1,987 (16%)
Calvert County	240 (1.8%)	325 (2.0%)	230 (1.9%)
Caroline County	104 (0.8%)	134 (0.8%)	101 (0.8%)
Carroll County	545 (4.2%)	713 (4.3%)	529 (4.3%)
Cecil County	277 (2.1%)	413 (2.5%)	373 (3.0%)
Charles County	260 (2.0%)	356 (2.2%)	250 (2.0%)
Dorchester County	120 (0.9%)	156 (0.9%)	114 (0.9%)
Frederick County	778 (6.0%)	1,003 (6.1%)	819 (6.7%)
Garrett County	63 (0.5%)	71 (0.4%)	60 (0.5%)

Table 1. Demographic Characteristics	**2022**	**2023**	**2024**
Harford County	790 (6.1%)	980 (6.0%)	733 (6.0%)
Howard County	681 (5.2%)	860 (5.2%)	657 (5.4%)
Kent County	43 (0.3%)	71 (0.4%)	59 (0.5%)
Montgomery County	1,669 (13%)	1,992 (12%)	1,533 (12%)
Prince George's County	760 (5.8%)	1,018 (6.2%)	743 (6.1%)
Queen Anne's County	167 (1.3%)	219 (1.3%)	168 (1.4%)
Somerset County	47 (0.4%)	64 (0.4%)	53 (0.4%)
St. Mary's County	221 (1.7%)	272 (1.7%)	212 (1.7%)
Talbot County	112 (0.9%)	183 (1.1%)	121 (1.0%)
Washington County	394 (3.0%)	501 (3.0%)	434 (3.5%)
Wicomico County	343 (2.6%)	413 (2.5%)	342 (2.8%)
Worcester County	218 (1.7%)	323 (2.0%)	260 (2.1%)
Other (please specify)	10 (<0.1%)	13 (<0.1%)	14 (0.1%)

Table 2: General health information	2022	2023	2024
Please choose the option below that is most accurate for you.			
I am not currently, but was pregnant or breastfeeding in the last year	186 (2.6%)	251 (2.6%)	184 (2.5%)
I am currently breastfeeding	30 (0.4%)	35 (0.4%)	31 (0.4%)
I am currently pregnant	28 (0.4%)	56 (0.6%)	46 (0.6%)
I am currently pregnant and breastfeeding	12 (0.2%)	34 (0.4%)	24 (0.3%)
I am neither pregnant nor breastfeeding	6,816 (94%)	9,122 (94%)	6,873 (94%)
I prefer not to answer	144 (2.0%)	205 (2.1%)	154 (2.1%)
Does anyone under the age of 18 live with you? Please select all that apply			
No one under 18 lives with me	9,069 (70%)	12,087 (74%)	9,142 (75%)
Yes, one or more children under age 5	756 (5.8%)	824 (5.0%)	531 (4.3%)
Yes, one or more children ages 6-10	1,029 (7.9%)	1,025 (6.2%)	759 (6.2%)
Yes, one or more children ages 11-15	1,289 (9.9%)	1,409 (8.6%)	995 (8.1%)
Yes, one or more children ages 16-18	849 (6.5%)	1,090 (6.6%)	840 (6.8%)
Do you currently have health insurance?			
No	--	727 (4.4%)	493 (4.0%)
Yes	--	15,717 (96%)	11,782 (96%)
In general, would you say your physical health is...			
Excellent	--	--	723 (5.9%)
Very good	--	--	3,393 (28%)
Good	--	--	4,763 (39%)
Fair	--	--	2,650 (22%)
Poor	--	--	713 (5.8%)
I don't know	--	--	33 (0.3%)
In general, would you say your mental health is...			
Excellent	--	--	1,267 (10%)
Very good	--	--	3,087 (25%)
Good	--	--	4,235 (35%)
Fair	--	--	2,837 (23%)
Poor	--	--	785 (6.4%)
I don't know	--	--	45 (0.4%)
Have you ever served in Armed Forces, Reserves, or National Guard?			
No	11,752 (90%)	14,724 (90%)	10,917 (89%)
Prefer not to answer	78 (0.6%)	118 (0.7%)	93 (0.8%)
Yes	1,180 (9.1%)	1,602 (9.7%)	1,267 (10%)

Table 3: Past Month Substance Use	2022	2023	2024
How many days in the past month did you use each substance?			
Cannabis			
0 days	0 (0%)	498 (3.0%)	390 (3.2%)
1-4 days	1,200 (9.2%)	1,322 (8.1%)	907 (7.4%)
5-10 days	1,298 (10.0%)	1,411 (8.6%)	939 (7.7%)
11-19 days	1,720 (13%)	1,877 (11%)	1,337 (11%)
20-29 days	2,667 (21%)	3,335 (20%)	2,501 (20%)
All 30 days	6,102 (47%)	7,970 (49%)	6,178 (50%)
Tobacco			
0 days	9,998 (77%)	12,710 (78%)	9,643 (79%)
1-4 days	448 (3.5%)	552 (3.4%)	378 (3.1%)
5-10 days	245 (1.9%)	286 (1.8%)	185 (1.5%)
11-19 days	252 (1.9%)	234 (1.4%)	178 (1.5%)
20-29 days	255 (2.0%)	322 (2.0%)	230 (1.9%)
All 30 days	1,728 (13%)	2,155 (13%)	1,548 (13%)
Alcohol			
0 days	5,149 (40%)	7,005 (43%)	5,412 (44%)
1-4 days	3,813 (29%)	4,570 (28%)	3,490 (29%)
5-10 days	1,994 (15%)	2,229 (14%)	1,593 (13%)
11-19 days	1,159 (9.0%)	1,370 (8.4%)	912 (7.5%)
20-29 days	580 (4.5%)	769 (4.7%)	515 (4.2%)
All 30 days	254 (2.0%)	364 (2.2%)	275 (2.3%)
Psychedelics			
0 days	12,430 (96%)	15,597 (96%)	11,699 (96%)
1-4 days	408 (3.2%)	540 (3.3%)	386 (3.2%)
5-10 days	38 (0.3%)	53 (0.3%)	26 (0.2%)
11-19 days	12 (<0.1%)	13 (<0.1%)	14 (0.1%)
20-29 days	5 (<0.1%)	9 (<0.1%)	3 (<0.1%)
All 30 days	30 (0.2%)	26 (0.2%)	20 (0.2%)
Benzodiazepines			
0 days	11,755 (91%)	14,897 (92%)	11,022 (91%)
1-4 days	534 (4.1%)	608 (3.7%)	494 (4.1%)
5-10 days	174 (1.3%)	168 (1.0%)	147 (1.2%)
11-19 days	84 (0.7%)	94 (0.6%)	76 (0.6%)

Table 3: Past Month Substance Use	2022	2023	2024
20-29 days	66 (0.5%)	75 (0.5%)	66 (0.5%)
All 30 days	310 (2.4%)	392 (2.4%)	349 (2.9%)
Stimulants			
0 days	12,173 (94%)	15,327 (95%)	11,298 (93%)
1-4 days	175 (1.4%)	181 (1.1%)	155 (1.3%)
5-10 days	84 (0.7%)	81 (0.5%)	76 (0.6%)
11-19 days	79 (0.6%)	89 (0.5%)	82 (0.7%)
20-29 days	125 (1.0%)	147 (0.9%)	122 (1.0%)
All 30 days	283 (2.2%)	392 (2.4%)	406 (3.3%)
Opioids			
0 days	12,256 (95%)	15,287 (94%)	11,340 (93%)
1-4 days	187 (1.4%)	242 (1.5%)	200 (1.6%)
5-10 days	71 (0.5%)	91 (0.6%)	72 (0.6%)
11-19 days	55 (0.4%)	84 (0.5%)	53 (0.4%)
20-29 days	49 (0.4%)	82 (0.5%)	62 (0.5%)
All 30 days	292 (2.3%)	442 (2.7%)	415 (3.4%)

Table 4. Program Interactions	2022	2023	2024
How many years have you been a certified patient in the Maryland medical cannabis program?			
1 year	3,623 (28%)	3,027 (19%)	1,153 (9.5%)
2 years	3,417 (27%)	3,239 (20%)	1,823 (15%)
3 years	3,268 (25%)	4,431 (27%)	2,891 (24%)
4 years	1,661 (13%)	2,592 (16%)	2,624 (22%)
5 years	915 (7.1%)	1,743 (11%)	1,732 (14%)
6 years	--	1,236 (7.6%)	998 (8.2%)
7 years	--	--	967 (7.9%)
How did you first learn about becoming a Maryland medical cannabis patient?			
A friend or family member	--	--	3,980 (32%)
A healthcare provider	--	--	2,033 (17%)
A news article or something I read	--	--	2,555 (21%)
Another medical cannabis patient	--	--	1,848 (15%)
I don't remember	--	--	805 (6.6%)
I saw an ad or booth at an event	--	--	224 (1.8%)
Someone at a dispensary	--	--	245 (2.0%)
Other, specify:	--	--	579 (4.7%)
Did anyone help you with the medical cannabis program registration process? If so, who?			
No, I did it myself	--	--	7,542 (62%)
Yes, a friend or family member	--	--	1,839 (15%)
Yes, a healthcare provider	--	--	1,336 (11%)
Yes, but I can't remember who	--	--	176 (1.4%)
Yes, someone at a special event booth or festival tent	--	--	52 (0.4%)
Yes, someone from a dispensary	--	--	553 (4.5%)
Yes, someone from MMCC/MCA	--	--	642 (5.2%)
Yes, other, specify:	--	--	119 (1.0%)
Which of the following is true?			
Both my patient registration and provider certification must be renewed annually.	--	--	1,870 (15%)

Table 4. Program Interactions	2022	2023	2024
My patient registration must be renewed annually.	--	--	2,783 (23%)
My provider certification must be renewed annually.	--	--	5,089 (42%)
There's no difference between registration and certification.	--	--	252 (2.1%)
I'm not sure.	--	--	2,268 (18%)
How frequently do you consult with your certifying provider (either in-person or as a telehealth appointment)?			
Once per year, primarily to renew my medical cannabis certification	--	--	10,827 (88%)
Twice per year	--	--	651 (5.3%)
More than twice per year	--	--	769 (6.3%)
How much does your certifying provider charge for annual certification			
Less than $100	--	--	4,883 (40%)
$100 - 149	--	--	4,455 (36%)
$150 - 200	--	--	2,013 (16%)
Over $200	--	--	173 (1.4%)
Unsure	--	--	747 (6.1%)
When purchasing cannabis at a licensed dispensary, how confident do you feel that you are receiving a safe, uncontaminated product?			
Very high confidence	10,200 (79%)	13,268 (81%)	9,590 (78%)
Somewhat high confidence	1,980 (15%)	2,246 (14%)	1,914 (16%)
Neutral	577 (4.5%)	698 (4.2%)	571 (4.7%)
Low confidence	89 (0.7%)	116 (0.7%)	111 (0.9%)
Very low confidence	57 (0.4%)	78 (0.5%)	65 (0.5%)
I have not purchased cannabis at a dispensary in Maryland	13 (0.1%)	34 (0.2%)	21 (0.2%)
Have you met with a Clinical Director in-person at least once?			
Yes	5,579 (43%)	6,764 (41%)	4,879 (40%)
No	6,023 (47%)	7,998 (49%)	6,347 (52%)
I don't know	1,263 (9.8%)	1,564 (9.6%)	979 (8.0%)
Have you met with a Clinical Director by phone or video chat at least once?			
Yes	6,488 (50%)	8,270 (51%)	6,015 (49%)
No	5,500 (43%)	6,940 (43%)	5,504 (45%)

Table 4. Program Interactions	2022	2023	2024
I don't know	874 (6.8%)	1,094 (6.7%)	694 (5.7%)
Have you tried to meet with a Clinical Director, but none were available?			
Yes	225 (1.8%)	275 (1.7%)	198 (1.6%)
No	11,632 (91%)	14,622 (90%)	11,056 (91%)
I don't know	931 (7.3%)	1,268 (7.8%)	878 (7.2%)
Were you unaware that Clinical Directors existed?			
Yes	3,820 (30%)	4,890 (30%)	3,693 (30%)
No	7,952 (62%)	9,920 (61%)	7,426 (61%)
I don't know	1,013 (7.9%)	1,397 (8.6%)	1,008 (8.3%)
The last time you consulted a Clinical Director, how long did you have to wait to talk to them?			
No wait	--	--	2,342 (19%)
Less than 15 minutes	--	--	2,826 (23%)
Less than an hour	--	--	934 (7.6%)
Several hours	--	--	154 (1.3%)
A day or more	--	--	536 (4.4%)
About a week	--	--	142 (1.2%)
N/A, I haven't met with a clinical director	--	--	5,325 (43%)

Table 5: Factors for Enhancing Program Experience	2022	2023	2024
To what extent would this dispensary feature improve your experience as a medical patient?			
Ensuring a Clinical Director is available during all standard business hours (9am to 5pm/M-F)?			
Great improvement	--	--	3,082 (25%)
Some improvement	--	--	3,271 (27%)
Little improvement	--	--	2,290 (19%)
No improvement	--	--	3,483 (29%)
Ensuring a Clinical Director is available during extended weekday hours and on weekends?			
Great improvement	--	--	2,603 (21%)
Some improvement	--	--	3,036 (25%)
Little improvement	--	--	2,475 (20%)
No improvement	--	--	4,005 (33%)
To what extent would this dispensary feature improve your experience as a medical patient: Offering more low THC products?			
Great improvement	--	--	2,028 (17%)
Some improvement	--	--	2,145 (18%)
Little improvement	--	--	2,012 (17%)
No improvement	--	--	5,921 (49%)
Increasing accommodations (ramps, automatic doors, large font resources, etc.)?			
Great improvement	--	--	3,129 (26%)
Some improvement	--	--	2,704 (22%)
Little improvement	--	--	1,812 (15%)
No improvement	--	--	4,454 (37%)
What are the most important factors that keep you in the medical cannabis program now that adult-use cannabis is available in Maryland? Please rank the topics in order of importance where the most important topic is #1.			
Higher potency products			
1	--	2,057 (13%)	4,507 (38%)
2	--	4,493 (28%)	2,121 (18%)
3	--	2,937 (18%)	1,588 (13%)
4	--	2,184 (14%)	1,274 (11%)
5	--	1,716 (11%)	929 (7.7%)
6	--	1,128 (7.0%)	620 (5.2%)
7	--	743 (4.6%)	412 (3.4%)

Table 5: Factors for Enhancing Program Experience	2022	2023	2024
8	--	393 (2.5%)	267 (2.2%)
9	--	262 (1.6%)	168 (1.4%)
10	--	116 (0.7%)	110 (0.9%)
Tax benefit (no taxes)			
1	--	3,098 (19%)	3,105 (26%)
2	--	2,650 (17%)	3,952 (33%)
3	--	4,008 (25%)	1,990 (17%)
4	--	2,356 (15%)	1,195 (10.0%)
5	--	1,533 (9.6%)	747 (6.2%)
6	--	895 (5.6%)	404 (3.4%)
7	--	574 (3.6%)	266 (2.2%)
8	--	393 (2.5%)	161 (1.3%)
9	--	364 (2.3%)	100 (0.8%)
10	--	158 (1.0%)	76 (0.6%)
Education (Clinical Directors)			
1	--	565 (3.5%)	487 (4.1%)
2	--	664 (4.1%)	696 (5.8%)
3	--	1,038 (6.5%)	1,706 (14%)
4	--	2,672 (17%)	1,580 (13%)
5	--	2,421 (15%)	2,067 (17%)
6	--	2,628 (16%)	2,095 (17%)
7	--	2,425 (15%)	1,579 (13%)
8	--	2,120 (13%)	1,061 (8.8%)
9	--	1,251 (7.8%)	497 (4.1%)
10	--	245 (1.5%)	228 (1.9%)
Higher possession/purchase limits			
1	--	267 (1.7%)	339 (2.8%)
2	--	658 (4.1%)	1,026 (8.6%)
3	--	1,365 (8.5%)	1,927 (16%)
4	--	2,320 (14%)	2,860 (24%)
5	--	3,959 (25%)	2,334 (19%)
6	--	3,297 (21%)	1,701 (14%)
7	--	2,448 (15%)	1,057 (8.8%)
8	--	1,267 (7.9%)	519 (4.3%)

Table 5: Factors for Enhancing Program Experience	2022	2023	2024
9	--	366 (2.3%)	186 (1.6%)
10	--	82 (0.5%)	47 (0.4%)
Lower age restrictions			
1	--	77 (0.5%)	98 (0.8%)
2	--	61 (0.4%)	75 (0.6%)
3	--	94 (0.6%)	140 (1.2%)
4	--	199 (1.2%)	368 (3.1%)
5	--	582 (3.6%)	1,318 (11%)
6	--	2,134 (13%)	1,815 (15%)
7	--	2,506 (16%)	2,334 (19%)
8	--	3,335 (21%)	2,029 (17%)
9	--	5,587 (35%)	2,051 (17%)
10	--	1,454 (9.1%)	1,768 (15%)
Patient-only lines or hours			
1	--	1,694 (11%)	1,594 (13%)
2	--	2,065 (13%)	2,008 (17%)
3	--	1,950 (12%)	2,216 (18%)
4	--	2,004 (13%)	1,950 (16%)
5	--	1,758 (11%)	1,468 (12%)
6	--	1,646 (10%)	1,599 (13%)
7	--	1,601 (10.0%)	733 (6.1%)
8	--	2,611 (16%)	280 (2.3%)
9	--	578 (3.6%)	112 (0.9%)
10	--	122 (0.8%)	36 (0.3%)
Access to delivery services			
1	--	268 (1.7%)	366 (3.1%)
2	--	457 (2.9%)	536 (4.5%)
3	--	627 (3.9%)	750 (6.3%)
4	--	731 (4.6%)	1,066 (8.9%)
5	--	1,006 (6.3%)	1,553 (13%)
6	--	1,353 (8.4%)	1,962 (16%)
7	--	2,101 (13%)	3,107 (26%)
8	--	3,514 (22%)	1,677 (14%)
9	--	5,580 (35%)	807 (6.7%)

Table 5: Factors for Enhancing Program Experience	2022	2023	2024
10	--	392 (2.4%)	172 (1.4%)
Patient-only product discounts at dispensaries			
1	--	--	800 (6.7%)
2	--	--	1,158 (9.7%)
3	--	--	1,270 (11%)
4	--	--	1,175 (9.8%)
5	--	--	1,017 (8.5%)
6	--	--	970 (8.1%)
7	--	--	1,281 (11%)
8	--	--	3,577 (30%)
9	--	--	670 (5.6%)
10	--	--	78 (0.7%)
Stronger legal protections: (please specify)			
1	--	--	458 (3.8%)
2	--	--	330 (2.8%)
3	--	--	336 (2.8%)
4	--	--	462 (3.9%)
5	--	--	489 (4.1%)
6	--	--	723 (6.0%)
7	--	--	1,027 (8.6%)
8	--	--	1,861 (16%)
9	--	--	5,769 (48%)
10	--	--	541 (4.5%)
Other (Please specify below)			
1	--	550 (3.4%)	242 (2.0%)
2	--	136 (0.8%)	94 (0.8%)
3	--	85 (0.5%)	73 (0.6%)
4	--	65 (0.4%)	66 (0.6%)
5	--	56 (0.3%)	74 (0.6%)
6	--	90 (0.6%)	107 (0.9%)
7	--	189 (1.2%)	201 (1.7%)
8	--	372 (2.3%)	567 (4.7%)
9	--	1,242 (7.7%)	1,636 (14%)
10	--	13,244 (83%)	8,936 (74%)

Table 5: Factors for Enhancing Program Experience	2022	2023	2024
Do you plan to remain in the medical cannabis program by renewing your certification?			
I don't know	--	1,791 (11%)	835 (6.8%)
No	--	304 (1.9%)	147 (1.2%)
Yes	--	14,307 (87%)	11,288 (92%)
[If 'No' was selected in previous question, then:] What is the primary reason you plan to leave the medical program?			
Concern over purchasing/possessing a firearm (medical cannabis patients are prohibited from purchasing/possessing firearms)	--	35 (12%)	27 (18%)
Cost of annual recertification from a certifying healthcare provider	--	114 (38%)	32 (22%)
Higher cost of medical cannabis products	--	17 (5.6%)	6 (4.1%)
I prefer anonymity of adult-use market	--	11 (3.6%)	6 (4.1%)
Other, please specify:	--	79 (26%)	50 (34%)
The amount of paperwork/administration in the medical program (e.g. the registration and certification are burdensome/confusing)	--	13 (4.3%)	7 (4.8%)
The products I use are sold on the adult-use market (don't require a medical card)	--	33 (11%)	19 (13%)

Table 6: Information Sourcing and Satisfaction	2022	2023	2024
For each of the following topics related to medical cannabis use, who has been your primary source of information?			
Drug interactions (alcohol, prescription/nonprescription drugs, supplements)			
Certifying provider	--	--	2,483 (36%)
Clinical director	--	--	488 (7.1%)
Primary care provider (PCP)	--	--	2,183 (32%)
Dispensary agent (budtender)	--	--	988 (14%)
Other healthcare provider	--	--	775 (11%)
Possible side effects or contraindications			
Certifying provider	--	--	2,464 (35%)
Clinical director	--	--	574 (8.2%)
Primary care provider (PCP)	--	--	1,591 (23%)
Dispensary agent (budtender)	--	--	1,729 (25%)
Other healthcare provider	--	--	680 (9.7%)
Different methods, strengths, effects, and forms of cannabis for your qualifying condition			
Certifying provider	--	--	2,231 (24%)
Clinical director	--	--	642 (7.0%)
Primary care provider (PCP)	--	--	453 (4.9%)
Dispensary agent (budtender)	--	--	5,454 (60%)
Other healthcare provider	--	--	386 (4.2%)
THC dose appropriate/effective for your certifying condition			
Certifying provider	--	--	2,658 (33%)
Clinical director	--	--	716 (9.0%)
Primary care provider (PCP)	--	--	484 (6.1%)
Dispensary agent (budtender)	--	--	3,676 (46%)
Other healthcare provider	--	--	425 (5.3%)
Addiction / cannabis use disorder			
Certifying provider	--	--	1,607 (40%)
Clinical director	--	--	456 (11%)
Primary care provider (PCP)	--	--	1,073 (26%)
Dispensary agent (budtender)	--	--	389 (9.6%)
Other healthcare provider	--	--	526 (13%)
How satisfied were you with the information provided to you about each topic?			

Table 6: Information Sourcing and Satisfaction	2022	2023	2024
Drug interactions (alcohol, prescription/nonprescription drugs, supplements)			
Very satisfied	--	--	5,865 (56%)
Somewhat satisfied	--	--	1,397 (13%)
Neutral	--	--	2,755 (26%)
Somewhat unsatisfied	--	--	164 (1.6%)
Very unsatisfied	--	--	294 (2.8%)
Possible side effects or contraindications			
Very satisfied	--	--	5,650 (54%)
Somewhat satisfied	--	--	1,443 (14%)
Neutral	--	--	2,970 (28%)
Somewhat unsatisfied	--	--	176 (1.7%)
Very unsatisfied	--	--	265 (2.5%)
Different methods, strengths, effects, and forms of cannabis for your qualifying condition			
Very satisfied	--	--	6,548 (58%)
Somewhat satisfied	--	--	1,916 (17%)
Neutral	--	--	2,368 (21%)
Somewhat unsatisfied	--	--	193 (1.7%)
Very unsatisfied	--	--	271 (2.4%)
THC dose appropriate/effective for your certifying condition			
Very satisfied	--	--	6,216 (56%)
Somewhat satisfied	--	--	1,731 (16%)
Neutral	--	--	2,591 (24%)
Somewhat unsatisfied	--	--	189 (1.7%)
Very unsatisfied	--	--	293 (2.7%)
Addiction / cannabis use disorder			
Very satisfied	--	--	3,873 (46%)
Somewhat satisfied	--	--	774 (9.2%)
Neutral	--	--	3,341 (40%)
Somewhat unsatisfied	--	--	140 (1.7%)
Very unsatisfied	--	--	259 (3.1%)

Table 7: Risk Perceptions & Use in the Home	2022	2023	2024
In the past year, how often did you engage in each of the following?			
I smoked cannabis inside my house			
Always	3,057 (24%)	3,880 (24%)	2,703 (22%)
Most of the time	1,983 (15%)	2,526 (15%)	1,837 (15%)
About half the time	620 (4.8%)	612 (3.7%)	495 (4.0%)
Sometimes	2,317 (18%)	2,754 (17%)	1,863 (15%)
Never	4,979 (38%)	6,625 (40%)	5,331 (44%)
I vaped cannabis inside my house			
Always	2,477 (19%)	2,961 (18%)	2,217 (18%)
Most of the time	2,037 (16%)	2,327 (14%)	1,675 (14%)
About half the time	861 (6.6%)	925 (5.6%)	629 (5.1%)
Sometimes	3,332 (26%)	4,228 (26%)	2,972 (24%)
Never	4,255 (33%)	5,939 (36%)	4,737 (39%)
I stored cannabis in a locked, safe location			
Always	8,195 (63%)	8,951 (55%)	6,503 (53%)
Most of the time	1,475 (11%)	1,818 (11%)	1,318 (11%)
About half the time	235 (1.8%)	317 (1.9%)	236 (1.9%)
Sometimes	795 (6.1%)	1,023 (6.2%)	819 (6.7%)
Never	2,272 (18%)	4,275 (26%)	3,354 (27%)
I smoked or vaped cannabis in my car while driving			
Always	--	315 (1.9%)	162 (1.3%)
Most of the time	--	241 (1.5%)	160 (1.3%)
About half the time	--	280 (1.7%)	166 (1.4%)
Sometimes	--	2,996 (18%)	1,318 (11%)
Never	--	12,529 (77%)	10,410 (85%)
In your opinion, how harmful or dangerous are each of the following activities?			
Driving under the influence of cannabis			
Very harmful	--	4,984 (30%)	4,298 (35%)
Moderately harmful	--	4,050 (25%)	3,076 (25%)
A little harmful	--	4,852 (30%)	3,208 (26%)
Not harmful at all	--	2,475 (15%)	1,617 (13%)
Driving under the influence of alcohol			
Very harmful	--	14,866 (91%)	11,229 (92%)
Moderately harmful	--	1,268 (7.7%)	833 (6.8%)

Table 7: Risk Perceptions & Use in the Home	2022	2023	2024
A little harmful	--	187 (1.1%)	110 (0.9%)
Not harmful at all	--	61 (0.4%)	53 (0.4%)
Using cannabis at the same time as alcohol or other substances			
Very harmful	--	1,994 (12%)	5,309 (43%)
Moderately harmful	--	3,022 (18%)	3,070 (25%)
A little harmful	--	4,025 (25%)	2,641 (22%)
Not harmful at all	--	7,324 (45%)	1,202 (9.8%)
How many hours after consuming cannabis is it safe to drive?			
0 hours	--	--	764 (6.3%)
1 hour	--	--	1,517 (13%)
2 hours	--	--	2,102 (17%)
3 hours	--	--	1,120 (9.3%)
4 hours	--	--	2,109 (18%)
5 hours	--	--	791 (6.6%)
6 hours	--	--	1,201 (10.0%)
7 hours	--	--	168 (1.4%)
8 hours	--	--	875 (7.3%)
9 hours	--	--	314 (2.6%)
10 hours	--	--	237 (2.0%)
11 hours	--	--	25 (0.2%)
12 hours	--	--	815 (6.8%)
How risky is it to drive 'a little high'?			
Not risky	--	--	1,500 (12%)
Somewhat risky	--	--	4,337 (35%)
Very risky	--	--	5,819 (47%)
Not sure	--	--	607 (4.9%)

Table 8. Patterns of Cannabis Use	2022	2023	2024
In the past month, have you smoked or vaped cannabis in the following locations?			
Public recreation area (park, beach, pool, etc.)			
No	--	13,662 (83%)	8,918 (75%)
Yes	--	2,733 (17%)	2,944 (25%)
Public transportation			
No	--	16,172 (99%)	11,630 (98%)
Yes	--	224 (1.4%)	236 (2.0%)
Workplace or office			
No	--	15,446 (94%)	11,053 (93%)
Yes	--	949 (5.8%)	809 (6.8%)
Event venues (sports, concerts, etc.)			
No	--	13,722 (84%)	8,937 (75%)
Yes	--	2,674 (16%)	2,926 (25%)
Bar or restaurant			
No	--	14,528 (89%)	10,157 (86%)
Yes	--	1,864 (11%)	1,716 (14%)
How many days in the past month did you use each method of cannabis consumption?			
Smoked from glassware, bowl, or bong, pre-roll, joint, etc.			
0 Days	3,504 (27%)	4,995 (31%)	3,708 (31%)
1-4 Days	1,868 (14%)	2,276 (14%)	1,640 (14%)
5-10 Days	1,328 (10%)	1,326 (8.4%)	991 (8.4%)
11-20 Days	1,436 (11%)	1,509 (9.5%)	1,133 (9.6%)
21-30 Days	4,822 (37%)	5,774 (36%)	4,354 (37%)
Consumed edibles			
0 Days	3,970 (31%)	4,712 (30%)	3,166 (27%)
1-4 Days	3,668 (28%)	4,236 (27%)	3,000 (25%)
5-10 Days	2,224 (17%)	2,507 (16%)	1,919 (16%)
11-20 Days	1,390 (11%)	1,755 (11%)	1,441 (12%)
21-30 Days	1,693 (13%)	2,668 (17%)	2,310 (20%)
Vaped cannabis			
0 Days	4,372 (34%)	6,021 (38%)	4,479 (38%)
1-4 Days	2,221 (17%)	2,700 (17%)	1,851 (16%)
5-10 Days	1,806 (14%)	1,970 (12%)	1,425 (12%)

Table 8. Patterns of Cannabis Use	2022	2023	2024
11-20 Days	1,701 (13%)	1,848 (12%)	1,363 (12%)
21-30 Days	2,849 (22%)	3,330 (21%)	2,717 (23%)
Dabbing, oil, wax, shatter, butter			
0 Days	10,373 (80%)	13,113 (83%)	9,443 (80%)
1-4 Days	935 (7.2%)	1,094 (6.9%)	959 (8.1%)
5-10 Days	548 (4.2%)	546 (3.4%)	470 (4.0%)
11-20 Days	380 (2.9%)	399 (2.5%)	311 (2.6%)
21-30 Days	701 (5.4%)	690 (4.4%)	634 (5.4%)
Capsules or tablets			
0 Days	11,283 (87%)	13,888 (88%)	10,444 (88%)
1-4 Days	845 (6.5%)	1,023 (6.5%)	696 (5.9%)
5-10 Days	396 (3.1%)	433 (2.7%)	317 (2.7%)
11-20 Days	181 (1.4%)	219 (1.4%)	157 (1.3%)
21-30 Days	223 (1.7%)	259 (1.6%)	208 (1.8%)
Tinctures or oral sprays			
0 Days	10,077 (78%)	12,025 (76%)	10,456 (88%)
1-4 Days	1,239 (9.6%)	1,615 (10%)	737 (6.2%)
5-10 Days	825 (6.4%)	1,003 (6.3%)	289 (2.4%)
11-20 Days	435 (3.4%)	628 (4.0%)	137 (1.2%)
21-30 Days	351 (2.7%)	561 (3.5%)	197 (1.7%)
Topicals (balm, lotion, cream)			
0 Days	12,693 (98%)	15,488 (98%)	8,981 (76%)
1-4 Days	126 (1.0%)	158 (1.0%)	1,251 (11%)
5-10 Days	33 (0.3%)	77 (0.5%)	736 (6.2%)
11-20 Days	20 (0.2%)	30 (0.2%)	471 (4.0%)
21-30 Days	29 (0.2%)	45 (0.3%)	373 (3.2%)
Transdermal (patch)			
0 Days	12,827 (99%)	15,688 (99%)	11,561 (98%)
1-4 Days	48 (0.4%)	49 (0.3%)	115 (1.0%)
5-10 Days	11 (<0.1%)	20 (0.1%)	42 (0.4%)
11-20 Days	6 (<0.1%)	10 (<0.1%)	17 (0.1%)
21-30 Days	13 (0.1%)	24 (0.2%)	63 (0.5%)
Rectal/vaginal suppositories			
0 Days	--	--	11,687 (99%)

Table 8. Patterns of Cannabis Use	2022	2023	2024
1-4 Days	--	--	50 (0.4%)
5-10 Days	--	--	13 (0.1%)
11-20 Days	--	--	5 (<0.1%)
21-30 Days	--	--	34 (0.3%)
During the past month, how many times did you drive/operate a car or other motor vehicle within three hours of consuming cannabis and/or when you were under the influence of cannabis?			
0 times	10,455 (81%)	9,498 (60%)	7,767 (66%)
1 time	501 (3.9%)	922 (5.8%)	676 (5.7%)
2-3 times	842 (6.5%)	2,078 (13%)	1,378 (12%)
4-5 times	230 (1.8%)	799 (5.0%)	446 (3.8%)
6 or more times	829 (6.4%)	2,562 (16%)	1,560 (13%)
I did not use cannabis in the past 30 days	29 (0.2%)	35 (0.2%)	21 (0.2%)
In the past month, what percentage of your cannabis consumption was medical vs. non-medical (i.e., recreational)?			
100% medical use	8,489 (66%)	11,029 (69%)	8,801 (74%)
75% medical, 25% non-medical	2,511 (19%)	2,889 (18%)	1,884 (16%)
50% medical, 50% non-medical	1,542 (12%)	1,585 (10.0%)	915 (7.7%)
25% medical, 75% non-medical	234 (1.8%)	255 (1.6%)	167 (1.4%)
100% non-medical	108 (0.8%)	104 (0.7%)	65 (0.5%)
I didn't use cannabis in the past month	15 (0.1%)	48 (0.3%)	33 (0.3%)

Table 9. Medical Use, Outcomes, and Attitudes Toward Cannabis	2022	2023	2024
What medical condition or symptom do you most commonly use cannabis to treat? Select one.			
Anorexia	123 (1.0%)	158 (1.0%)	104 (0.9%)
Cachexia or wasting syndrome	27 (0.2%)	21 (0.1%)	27 (0.2%)
Glaucoma	0 (0%)	169 (1.0%)	126 (1.0%)
Other chronic condition	4,245 (33%)	4,740 (29%)	3,527 (29%)
Post Traumatic Stress Disorder (PTSD)	1,630 (13%)	2,070 (13%)	1,646 (13%)
Seizures	89 (0.7%)	140 (0.9%)	103 (0.8%)
Severe nausea	346 (2.7%)	373 (2.3%)	276 (2.3%)
Severe or chronic pain	6,014 (47%)	8,290 (51%)	6,111 (50%)
Severe or persistent muscle spasms	411 (3.2%)	423 (2.6%)	314 (2.6%)
[If 'Other' was selected in previous question, then:] You reported using cannabis to treat 'Other chronic condition' in the previous question. Which of the following conditions are you most commonly using cannabis to treat?			
Anxiety	--	1,803 (38%)	1,310 (37%)
Arthritis	--	235 (5.0%)	209 (5.9%)
Attention-deficit/hyperactivity disorder (ADHD)	--	108 (2.3%)	118 (3.3%)
Autism Spectrum Disorder (ASD)	--	26 (0.5%)	20 (0.6%)
Depression	--	506 (11%)	345 (9.8%)
Gastrointestinal (stomach) distress	--	185 (3.9%)	149 (4.2%)
Insomnia or sleep disruptions	--	1,051 (22%)	749 (21%)
Sexual disorders	--	0 (0%)	8 (0.2%)
Other, not listed here (please specify:)	--	817 (17%)	617 (18%)
Think about the medical condition or symptom you most commonly use cannabis to treat. How effective do you feel cannabis has been in treating that condition or symptom?			
Extremely effective	3,721 (29%)	5,791 (35%)	3,744 (31%)
Very effective	5,996 (46%)	6,961 (42%)	5,577 (45%)
Moderately effective	2,768 (21%)	3,109 (19%)	2,544 (21%)
Slightly effective	389 (3.0%)	499 (3.0%)	362 (3.0%)
Not effective at all	37 (0.3%)	75 (0.5%)	41 (0.3%)
During the past year, have you experienced the following conditions when consuming cannabis, and if so, how often?			
Anxiety			
Never	8,935 (69%)	--	7,723 (63%)
Once or twice	2,014 (16%)	--	3,406 (28%)

Table 9. Medical Use, Outcomes, and Attitudes Toward Cannabis	2022	2023	2024
About monthly	1,105 (8.6%)	--	524 (4.3%)
About weekly	456 (3.5%)	--	332 (2.7%)
About daily	372 (2.9%)	--	264 (2.2%)
Panic			
Never	10,754 (83%)	--	10,218 (83%)
Once or twice	1,290 (10%)	--	1,567 (13%)
About monthly	511 (4.0%)	--	240 (2.0%)
About weekly	189 (1.5%)	--	135 (1.1%)
About daily	143 (1.1%)	--	85 (0.7%)
Psychotic or paranoid feelings			
Never	11,213 (87%)	--	10,572 (86%)
Once or twice	1,037 (8.0%)	--	1,386 (11%)
About monthly	444 (3.4%)	--	169 (1.4%)
About weekly	123 (1.0%)	--	72 (0.6%)
About daily	69 (0.5%)	--	46 (0.4%)
Suicidal thoughts or ideation			
Never	12,516 (97%)	--	11,892 (97%)
Once or twice	175 (1.4%)	--	246 (2.0%)
About monthly	115 (0.9%)	--	49 (0.4%)
About weekly	44 (0.3%)	--	23 (0.2%)
About daily	39 (0.3%)	--	30 (0.2%)
Breathing problems			
Never	11,587 (90%)	--	10,487 (86%)
Once or twice	680 (5.3%)	--	1,368 (11%)
About monthly	393 (3.1%)	--	197 (1.6%)
About weekly	137 (1.1%)	--	105 (0.9%)
About daily	74 (0.6%)	--	68 (0.6%)
Nausea/vomiting			
Never	11,693 (91%)	--	11,044 (90%)
Once or twice	737 (5.7%)	--	918 (7.5%)
About monthly	262 (2.0%)	--	126 (1.0%)
About weekly	106 (0.8%)	--	77 (0.6%)
About daily	67 (0.5%)	--	58 (0.5%)
Have you ever experienced cannabis hyperemesis syndrome (repeated, severe vomiting from cannabis use)?			

Table 9. Medical Use, Outcomes, and Attitudes Toward Cannabis	2022	2023	2024
No	--	--	11,893 (97%)
Unsure	--	--	167 (1.4%)
Yes	--	--	209 (1.7%)
How often during the past 6 months did you find that you were not able to stop using cannabis once you had started?			
Not Applicable, did not try to stop	--	13,806 (85%)	9,866 (81%)
Less than monthly	--	1,633 (10%)	1,581 (13%)
Monthly	--	275 (1.7%)	231 (1.9%)
Weekly	--	177 (1.1%)	154 (1.3%)
Daily or almost daily	--	381 (2.3%)	342 (2.8%)
How often in the past 6 months have you devoted a great deal of your time to getting, using, or recovering from cannabis?			
Never	--	12,031 (74%)	8,747 (72%)
Less than monthly	--	1,789 (11%)	1,507 (12%)
Monthly	--	894 (5.5%)	692 (5.7%)
Weekly	--	761 (4.7%)	571 (4.7%)
Daily or almost daily	--	867 (5.3%)	675 (5.5%)
How often in the past 6 months have you had a problem with your memory or concentration after using cannabis?			
Never	--	10,877 (66%)	7,642 (63%)
Less than monthly	--	3,239 (20%)	2,777 (23%)
Monthly	--	851 (5.2%)	728 (6.0%)
Weekly	--	794 (4.9%)	621 (5.1%)
Daily or almost daily	--	609 (3.7%)	444 (3.6%)
How comfortable do you feel telling or letting the following people know that you consume cannabis?			
Family			
Definitely not comfortable	613 (4.8%)	732 (4.5%)	560 (4.6%)
Probably not comfortable	579 (4.5%)	662 (4.0%)	509 (4.2%)
Might or might not feel comfortable	1,580 (12%)	2,005 (12%)	1,529 (12%)
Somewhat comfortable	2,469 (19%)	3,061 (19%)	2,242 (18%)
Very comfortable	7,654 (59%)	9,962 (61%)	7,414 (61%)
Friends			
Definitely not comfortable	277 (2.1%)	424 (2.6%)	305 (2.5%)
Probably not comfortable	294 (2.3%)	431 (2.6%)	312 (2.5%)
Might or might not feel comfortable	1,333 (10%)	1,779 (11%)	1,263 (10%)

Table 9. Medical Use, Outcomes, and Attitudes Toward Cannabis	2022	2023	2024
Somewhat comfortable	2,244 (17%)	2,856 (17%)	2,120 (17%)
Very comfortable	8,739 (68%)	10,920 (67%)	8,249 (67%)
My primary care provider			
Definitely not comfortable	503 (3.9%)	821 (5.0%)	566 (4.6%)
Probably not comfortable	642 (5.0%)	807 (4.9%)	544 (4.4%)
Might or might not feel comfortable	1,260 (9.8%)	1,495 (9.1%)	1,004 (8.2%)
Somewhat comfortable	2,346 (18%)	2,898 (18%)	2,243 (18%)
Very comfortable	8,138 (63%)	10,388 (63%)	7,887 (64%)
Other healthcare providers			
Definitely not comfortable	594 (4.6%)	914 (5.6%)	640 (5.2%)
Probably not comfortable	805 (6.2%)	981 (6.0%)	681 (5.6%)
Might or might not feel comfortable	1,815 (14%)	2,277 (14%)	1,511 (12%)
Somewhat comfortable	2,438 (19%)	3,202 (20%)	2,457 (20%)
Very comfortable	7,239 (56%)	9,027 (55%)	6,964 (57%)

Table 10: Public Education Priorities	2022	2023	2024
What do you think are the three (3) most important topics on which to educate the public about cannabis use? Please select the 3 topics from the list below.			
Addiction	--	--	1,545 (4.3%)
Differences between medical and adult-use cannabis	--	--	2,432 (6.7%)
Potential benefits to mental health	--	--	6,183 (17%)
Potential risks or harms to mental health	--	--	1,810 (5.0%)
Driving	--	--	3,074 (8.5%)
Poisoning/accidental exposure	--	--	724 (2.0%)
Public use/use in shared spaces	--	--	2,145 (5.9%)
Cannabis use during pregnancy	--	--	1,360 (3.7%)
Mixing cannabis with other substances (alcohol, other drugs, and/or prescribed medications)	--	--	3,249 (8.9%)
Potency, dosage, and delayed onset of products	--	--	3,955 (11%)
Differences between THC and CBD	--	--	3,668 (10%)
Legal issues, please specify:	--	--	557 (1.5%)
Educating healthcare providers about cannabis use	--	--	5,355 (15%)
Other, please specify:	--	--	288 (0.8%)

Table 11: Preferences for a State-Provided Cannabis Guidance Resource	2022	2023	2024
Would you utilize a FREE state resource that allows you to call a medical professional for guidance on any of the following topics? Select all of the topics you would be interested in.			
Contraindications, including health conditions, medications, and other substance/drug interactions with cannabis	--	--	4,230 (17%)
Specific products and strains available in Maryland dispensaries	--	--	4,832 (19%)
Different cannabis products and strains related to certifying conditions	--	--	5,871 (24%)
Potential health risks related to cannabis use	--	--	2,410 (9.7%)
Help with reducing/stopping cannabis use	--	--	917 (3.7%)
Side effects from cannabis use	--	--	2,007 (8.1%)
Other cannabis-related topic(s) you would like to consult with a medical professional about (please specify)	--	--	488 (2.0%)
I would not use this	--	--	4,099 (16%)
Thinking about the state resource from the previous question, how important would the following elements be for this resource? Please rank the topics in order of importance where the most important topic is #1.			
Provider knowledge on specific cannabis products available in Maryland			
1	--	--	5,226 (49%)
2	--	--	3,535 (33%)
3	--	--	733 (6.9%)
4	--	--	544 (5.1%)
5	--	--	356 (3.3%)
6	--	--	249 (2.3%)
Provider knowledge on effects of different strains of cannabis for certifying conditions			
1	--	--	3,507 (33%)
2	--	--	4,671 (44%)
3	--	--	1,179 (11%)
4	--	--	603 (5.7%)
5	--	--	456 (4.3%)
6	--	--	227 (2.1%)
Real time availability during standard business hours (9a-5p M-F)			
1	--	--	720 (6.8%)
2	--	--	899 (8.4%)
3	--	--	5,005 (47%)
4	--	--	2,438 (23%)
5	--	--	1,014 (9.5%)

Table 11: Preferences for a State-Provided Cannabis Guidance Resource	2022	2023	2024
6	--	--	567 (5.3%)
Real time availability during extended business hours (8a-8p M-F)			
1	--	--	483 (4.5%)
2	--	--	674 (6.3%)
3	--	--	1,407 (13%)
4	--	--	4,902 (46%)
5	--	--	2,563 (24%)
6	--	--	614 (5.8%)
Real time availability on weekends			
1	--	--	318 (3.0%)
2	--	--	467 (4.4%)
3	--	--	947 (8.9%)
4	--	--	1,349 (13%)
5	--	--	5,161 (48%)
6	--	--	2,401 (23%)
Intake message service with “live” callback within one business day			
1	--	--	389 (3.7%)
2	--	--	397 (3.7%)
3	--	--	1,372 (13%)
4	--	--	807 (7.6%)
5	--	--	1,093 (10%)
6	--	--	6,585 (62%)

Table 12: Insights on Adult-Use Cannabis Participation and Impacts	2022	2023	2024
Would you visit an adult-use (21+) cannabis club, café, lounge, or social consumption site if one was available where you live?			
Don't know	--	--	450 (3.7%)
Maybe	--	--	2,553 (21%)
No	--	--	2,703 (22%)
Yes	--	--	6,558 (53%)
[If 'Yes' was selected in previous question, then:] What type(s) of cannabis would you be interested in being permitted in an adult-use (21+) cannabis club, café, lounge, or social consumption site? Select one.			
All above forms of cannabis consumption	--	--	5,468 (83%)
Edibles only (e.g., single serving chew, baked goods, chocolates, beverages)	--	--	414 (6.3%)
Smoking and vaping only	--	--	340 (5.2%)
Unsure / no preference	--	--	334 (5.1%)
Does your rental home lease agreement prohibit or ban smoking or vaping cannabis inside your home?			
I don't know	--	--	588 (4.8%)
N/A, I do not rent my home	--	--	7,759 (63%)
No	--	--	2,491 (20%)
Yes, both smoking and vaping are prohibited	--	--	855 (7.0%)
Yes, but only smoking is prohibited	--	--	562 (4.6%)
How has legalization of adult-use cannabis affected the supply of the medical cannabis products you typically purchase?			--
Improved - there is more supply available	--	1,732 (11%)	2,785 (23%)
No change	--	9,220 (56%)	6,345 (52%)
Worsened - there is less supply available	--	5,450 (33%)	3,120 (25%)
How has legalization of adult-use cannabis affected the price of the medical cannabis products you typically purchase?			
Improved - prices have become more affordable	--	1,402 (8.6%)	2,162 (18%)
No change	--	8,481 (52%)	6,038 (49%)
Worsened - prices have become more expensive	--	6,474 (40%)	4,023 (33%)
How often have you used the following dispensary features since adult-use became available on July 1, 2023?			
Cannabis delivery services			
All the time	--	773 (4.7%)	675 (5.5%)
Usually	--	370 (2.3%)	372 (3.0%)
Sometimes	--	1,349 (8.2%)	1,527 (13%)
Never	--	13,867 (85%)	9,634 (79%)

Table 12: Insights on Adult-Use Cannabis Participation and Impacts	2022	2023	2024
Patient-only lines or hours			
All the time	--	8,153 (50%)	6,995 (57%)
Usually	--	2,169 (13%)	1,852 (15%)
Sometimes	--	2,201 (13%)	1,701 (14%)
Never	--	3,859 (24%)	1,682 (14%)
Clinical Directors			
All the time	--	436 (2.7%)	311 (2.6%)
Usually	--	328 (2.0%)	291 (2.4%)
Sometimes	--	1,926 (12%)	2,612 (21%)
Never	--	13,652 (84%)	8,975 (74%)
Curbside pickup			
All the time	--	1,511 (9.2%)	1,100 (9.0%)
Usually	--	1,002 (6.1%)	743 (6.1%)
Sometimes	--	3,163 (19%)	3,215 (26%)
Never	--	10,688 (65%)	7,152 (59%)
Drive through pickup			
All the time	--	1,521 (9.3%)	1,359 (11%)
Usually	--	901 (5.5%)	737 (6.0%)
Sometimes	--	2,251 (14%)	2,453 (20%)
Never	--	11,690 (71%)	7,665 (63%)
Access to medical-only products			
All the time	--	9,341 (57%)	7,532 (62%)
Usually	--	2,107 (13%)	1,950 (16%)
Sometimes	--	1,937 (12%)	1,664 (14%)
Never	--	2,965 (18%)	1,062 (8.7%)
Have you purchased cannabis without using your medical card (i.e., as an adult-use consumer)?			
No	--	15,124 (92%)	10,074 (82%)
Yes	--	1,309 (8.0%)	2,197 (18%)
[If 'Yes' was selected in previous question, then:] What is the primary reason you purchased adult-use cannabis?			
I exceeded medical allotment	--	222 (17%)	334 (15%)
I prefer anonymity of adult-use market	--	234 (18%)	143 (6.6%)
My certification temporarily lapsed	--	--	777 (36%)
Other reason(s), please specify:	--	821 (64%)	677 (31%)

Table 12: Insights on Adult-Use Cannabis Participation and Impacts	2022	2023	2024
There was an issue when the dispensary tried to access my medical certification electronically (technical or system problem)	--	--	234 (11%)

Table 13: Patterns of Past Month Cannabis Use by Primary Method	2022	2023	2024
Which method did you most commonly use to consume cannabis in the past month? Select one.			
Smoking dried flower from glassware, pipe, bowl, bong, pre-roll, joint, etc.	6,172 (48%)	3,813 (46%)	5,446 (46%)
Ingesting edibles	2,638 (20%)	2,120 (26%)	2,980 (25%)
Vaping cannabis	3,042 (24%)	1,754 (21%)	2,551 (21%)
Dabbing, oil, wax, shatter, butter concentrates	524 (4.1%)	254 (3.1%)	469 (4.0%)
Tinctures or oral sprays (elixirs)	195 (1.5%)	93 (1.1%)	122 (1.0%)
Capsules or tablets	141 (1.1%)	94 (1.1%)	124 (1.0%)
Topicals (balm, lotion, cream)	194 (1.5%)	137 (1.7%)	171 (1.4%)
Transdermal (patch)	8 (<0.1%)	0 (0%)	3 (<0.1%)
Rectal/vaginal suppositories	9 (<0.1%)	2 (<0.1%)	1 (<0.1%)
In the past month, how many grams did you typically consume of cannabis flower (bud) each week?	13 (12)	12 (11)	12 (11)
In a typical session (or sitting), how many grams of cannabis flower (bud) do you consume?	0.96 (0.90)	0.92 (0.85)	0.90 (0.84)
What is the typical THC potency (percent of THC) of the cannabis flower that you have consumed in the past month? You may not know exactly, but please give it your best guess.			
Between 10-15%	90 (1.5%)	53 (1.5%)	68 (1.3%)
Between 15-20%	460 (7.9%)	231 (6.4%)	264 (4.9%)
Between 20-25%	2,047 (35%)	1,041 (29%)	1,515 (28%)
Between 25-35%	2,713 (46%)	1,797 (50%)	2,696 (50%)
Between 35-50%	216 (3.7%)	183 (5.1%)	237 (4.4%)
Between 50-60%	61 (1.0%)	54 (1.5%)	60 (1.1%)
Between 60-80%	145 (2.5%)	138 (3.8%)	173 (3.2%)
Greater than 80%	77 (1.3%)	88 (2.5%)	117 (2.2%)
I don't know	0 (0%)	0 (0%)	306 (5.6%)
Less than 10%	43 (0.7%)	0 (0%)	0 (0%)
How much do you typically spend on cannabis flower per week?	72 (54)	62 (50)	65 (50)
Typically, how many milligrams of THC are in the cannabis edibles you consume per sitting (e.g., session)?			
5 mg or less of THC	695 (27%)	499 (24%)	500 (17%)
6-10 mg of THC	982 (39%)	728 (36%)	949 (32%)
11-15 mg of THC	205 (8.1%)	151 (7.4%)	215 (7.2%)
16-20 mg of THC	175 (6.9%)	170 (8.3%)	298 (10%)
21-30 mg of THC	227 (9.0%)	187 (9.2%)	251 (8.4%)

Table 13: Patterns of Past Month Cannabis Use by Primary Method	2022	2023	2024
31-40 mg of THC	156 (6.2%)	188 (9.2%)	461 (15%)
41-50 mg of THC	40 (1.6%)	53 (2.6%)	102 (3.4%)
51-60 mg THC	13 (0.5%)	15 (0.7%)	25 (0.8%)
61 or more mgs of THC	39 (1.5%)	47 (2.3%)	83 (2.8%)
I don't know	0 (0%)	0 (0%)	94 (3.2%)
How much money do you typically spend on cannabis edibles per week?	38 (35)	30 (30)	36 (33)
During the past month, did you typically consume cannabis edibles that were higher in THC, higher in CBD, or that contain somewhat equal amounts of THC and CBD?			
Higher in THC	1,363 (52%)	1,131 (53%)	1,673 (56%)
Higher in CBD	202 (7.7%)	192 (9.1%)	251 (8.4%)
Contains roughly the same amounts of each	866 (33%)	644 (30%)	868 (29%)
I don't know	205 (7.8%)	150 (7.1%)	187 (6.3%)
What type of edible(s) do you typically consume? Select all that apply.			
Candy (gummies, chews, hard candy, etc.)	--	1,976 (73%)	2,830 (73%)
Mints or gum	--	138 (5.1%)	145 (3.8%)
Baked goods or chocolate	--	370 (14%)	493 (13%)
Beverages or drink mix	--	139 (5.2%)	309 (8.0%)
Other, please specify:	--	67 (2.5%)	87 (2.3%)
On a typical day when you vape cannabis, how many sessions (sittings) do you have?			
0	5 (0.2%)	6 (0.3%)	12 (0.5%)
1	813 (27%)	464 (27%)	548 (22%)
2	766 (25%)	398 (23%)	576 (23%)
3	550 (18%)	329 (19%)	450 (18%)
4	291 (9.6%)	171 (9.8%)	291 (11%)
5	251 (8.3%)	150 (8.6%)	203 (8.0%)
6	107 (3.5%)	61 (3.5%)	133 (5.2%)
7	39 (1.3%)	37 (2.1%)	37 (1.5%)
8	59 (1.9%)	33 (1.9%)	53 (2.1%)
9	8 (0.3%)	1 (<0.1%)	10 (0.4%)
10	46 (1.5%)	32 (1.8%)	47 (1.8%)
11 or more	101 (3.3%)	65 (3.7%)	183 (7.2%)
In the past month, how many grams per week did you vape cannabis oil/concentrates?			
Less than 1 gram	1,247 (49%)	826 (55%)	1,099 (43%)

Table 13: Patterns of Past Month Cannabis Use by Primary Method	2022	2023	2024
1-2 grams	781 (31%)	433 (29%)	652 (26%)
3-4 grams	252 (10%)	149 (9.9%)	222 (8.7%)
5-10 grams	162 (6.4%)	64 (4.3%)	117 (4.6%)
11-15 grams	38 (1.5%)	17 (1.1%)	26 (1.0%)
16-20 grams	20 (0.8%)	4 (0.3%)	11 (0.4%)
21-30 grams	11 (0.4%)	4 (0.3%)	9 (0.4%)
More than 30 grams	9 (0.4%)	5 (0.3%)	8 (0.3%)
I don't know	0 (0%)	0 (0%)	401 (16%)
What is the typical potency (percent of THC) of the vape products that you have consumed in the past month?			
Between 0-9%	39 (1.6%)	29 (2.0%)	22 (0.9%)
Between 10-19	0 (0%)	0 (0%)	0 (0%)
Between 20-29%	362 (15%)	180 (12%)	271 (11%)
Between 30-39%	90 (3.7%)	64 (4.4%)	77 (3.1%)
Between 40-49%	45 (1.8%)	25 (1.7%)	36 (1.4%)
Between 50-59%	60 (2.5%)	36 (2.5%)	35 (1.4%)
Between 60-69%	79 (3.2%)	46 (3.2%)	57 (2.3%)
Between 70-79%	926 (38%)	463 (32%)	559 (22%)
Between 80-89%	793 (32%)	547 (38%)	1,016 (41%)
90% or more	53 (2.2%)	62 (4.3%)	53 (2.1%)
I don't know	0 (0%)	0 (0%)	373 (15%)
How much do you typically spend on vaping cannabis each week?	47 (42)	39 (37)	45 (38)
On a typical day you consume cannabis concentrates how many sessions (sittings) do you have?			
0	2 (0.4%)	4 (1.7%)	4 (0.9%)
1	50 (10%)	25 (10%)	42 (9.0%)
2	85 (17%)	49 (20%)	82 (17%)
3	105 (21%)	65 (27%)	96 (20%)
4	81 (17%)	34 (14%)	77 (16%)
5	62 (13%)	27 (11%)	49 (10%)
6	30 (6.1%)	18 (7.4%)	47 (10%)
7	15 (3.1%)	6 (2.5%)	6 (1.3%)
8	21 (4.3%)	5 (2.1%)	10 (2.1%)
9	2 (0.4%)	0 (0%)	0 (0%)
10	10 (2.0%)	2 (0.8%)	6 (1.3%)

Table 13: Patterns of Past Month Cannabis Use by Primary Method	2022	2023	2024
11 or more	26 (5.3%)	7 (2.9%)	22 (4.7%)
I don't know	0 (0%)	0 (0%)	28 (6.0%)
In a typical session (or sitting), how many grams of cannabis concentrates do you consume?	--	--	0.35 (0.41)
What is the typical THC potency (percent of THC) of the concentrates that you have consumed in the past month?			
0-9%	2 (0.4%)	2 (0.8%)	0 (0%)
10-19%	6 (1.2%)	2 (0.8%)	6 (1.3%)
20-29%	21 (4.3%)	8 (3.3%)	20 (4.3%)
30-39%	5 (1.0%)	3 (1.3%)	5 (1.1%)
40-49%	2 (0.4%)	4 (1.7%)	4 (0.9%)
50-59%	7 (1.4%)	3 (1.3%)	3 (0.6%)
60-69%	14 (2.9%)	8 (3.3%)	21 (4.5%)
70-79%	199 (41%)	87 (36%)	178 (38%)
80-89%	216 (44%)	107 (45%)	164 (35%)
90% or more	17 (3.5%)	16 (6.7%)	25 (5.3%)
I don't know	0 (0%)	0 (0%)	42 (9.0%)
How much money do you typically spend on cannabis concentrates per week?	94 (60)	80 (57)	77 (54)

Table 14: Exposure to DUIC Campaign Videos	2022	2023	2024
[Video titled "Take it Seriously" plays, then:] Have you ever seen this video before today?			
No	--	--	4,791 (78%)
No, but I have seen a similar video.	--	--	480 (7.8%)
Unsure	--	--	247 (4.0%)
Yes	--	--	635 (10%)
[Video titled "Respect the Effect" plays, then:] Have you ever seen this video before today?			
No	--	--	4,978 (81%)
No, but I have seen a similar video.	--	--	464 (7.6%)
Unsure	--	--	178 (2.9%)
Yes	--	--	493 (8.1%)