

SEPTEMBER 2021

Ohio Medical Marijuana Control Program at Three Years

Evaluating
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Ohio Medical Marijuana Control Program at Three Years: Evaluating Satisfaction and Perception

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ABSTRACT

Medical marijuana has been legal in Ohio since September 8, 2016, when House Bill 523 (HB 523) came into effect. The bill created the framework for the Ohio Medical Marijuana Control Program (OMMCP). Due to program delays, the first Ohio sales of medical marijuana at a licensed dispensary did not occur until January 2019. Since then, OMMCP has experienced a steep growth in the number of patients and the amount of cannabis flower and manufactured units sold. Yet, OMMCP has also experienced a stagnating number of physicians licensed to recommend and has battled persistent levels of dissatisfaction among patients and potential patients. This report, a third in an annual series, traces the evolution of OMMCP over the last three years both in terms of its growth and OMMCP patients' and prospective patients' satisfaction levels with the functioning and design of the program.

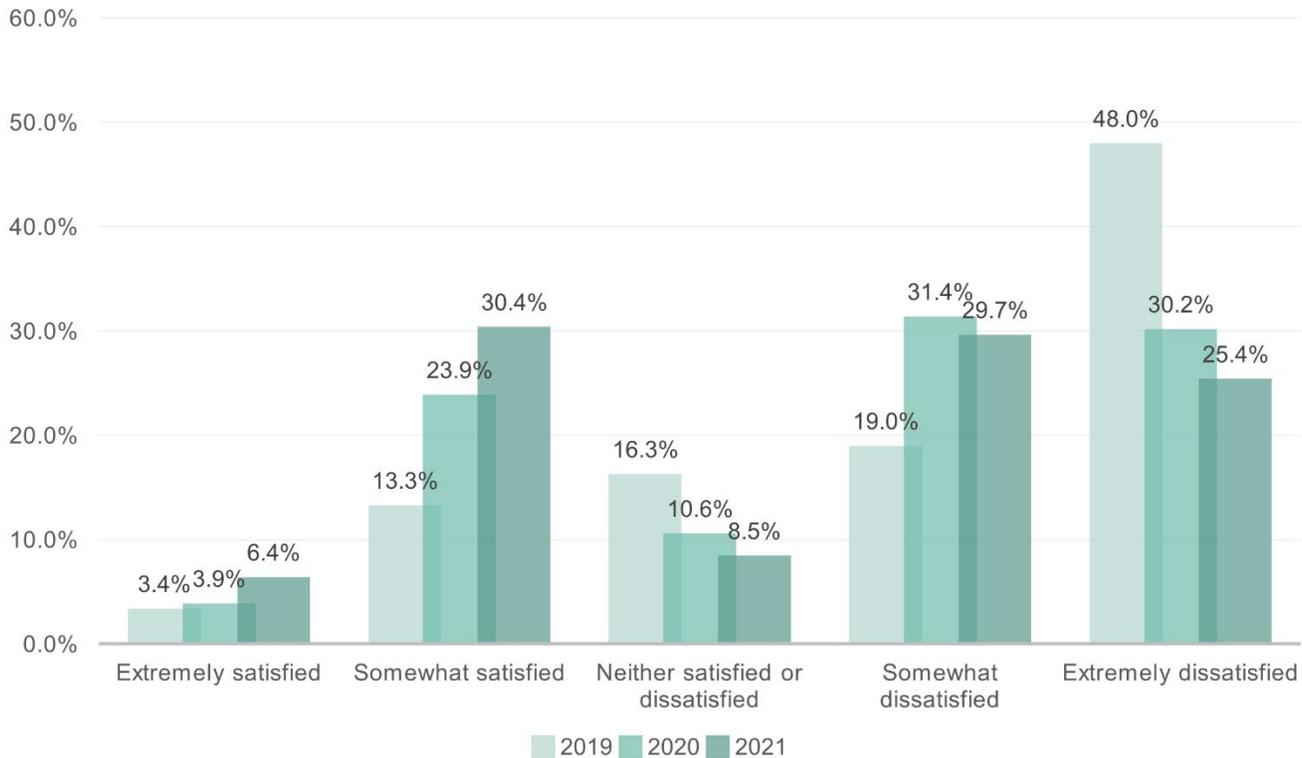
SUMMARY AND KEY FINDINGS

For the third year in a row, patients and prospective patients of the Ohio Medical Marijuana Control Program (OMMCP), have continued to express high levels of dissatisfaction, although the degree and intensity of dissatisfaction have decreased since 2019. The high price of medical marijuana products in licensed dispensaries, lack of a home grow provision and lack of employment protections for patients were main drivers of patient dissatisfaction. Additionally, the high price of marijuana was also the top stated reason for not using medical marijuana and not utilizing Ohio dispensaries. While pricing for the illicit market is not available, when compared to medical dispensaries in the state of Michigan, Ohio dispensaries charged on average \$3.28 per gram more over the first six months of 2021. If we apply such difference to the average purchase amount of an Ohio patient (280.32g per year according to the Ohio Department of Commerce), such patient ends up paying approximately \$920 more than a patient in Michigan. Should an Ohio patient purchase the full annual allowable supply of Tier I marijuana flower (905.6 g) under OMMCP rules, he or she ends up paying close to \$3,000 more a year.

Additionally, patients expressed dissatisfaction with the restrictions on patient supply, the difficulty and cost of obtaining a patient registration card, and the fact that certain medical conditions, such as anxiety and depression, were not recognized as qualifying conditions. On the other hand, some of the COVID-19-inspired changes, such as allowance for telemedicine, online ordering, and curbside pickup had a positive impact on people's satisfaction levels with OMMCP. Participants also reported high levels of trust in the safety of products sold in licensed dispensaries.

Lastly, while close to 89% of respondents reported that they would prefer to purchase their marijuana from medical dispensaries if prices were similar to other sources, at present only a little over 70% of respondents reported using Ohio licensed dispensaries as their primary source of medical marijuana.

Satisfaction Levels with the Ohio Medical Marijuana Control Program (OMMCP)



95.4% of survey respondents reported a qualifying condition under the medical marijuana program. The majority of respondents with a qualifying condition reported that they had chronic, severe, or intractable pain, mirroring general OMMCP patient information. The most frequently requested conditions for inclusion were **anxiety** and **depression**.

90.2% of survey respondents reported that they currently use marijuana primarily for medical reasons. People who reported not using marijuana reported that the top two reasons preventing them from using marijuana were the **cost of product** and the **cost and difficulty associated with obtaining a doctor's recommendation and patient card**.

71.6% of survey respondents with a qualifying medical condition reported that Ohio dispensaries were their primary source of medical marijuana. For people who indicated that they purchased marijuana from other sources, the primary reason for doing so was the **cost of product in Ohio dispensaries** and the **cost and difficulty associated with becoming a registered patient**.

81.5% of survey respondents reported being currently registered as patients with OMMCP.

55.1% of respondents reported some level of **dissatisfaction** with OMMCP, with 25.4% reporting being "extremely dissatisfied" and 29.7% being "somewhat dissatisfied." However, when compared to previous years the **overall dissatisfaction levels are declining** (67% in 2019 reported being dissatisfied, compared to 61.6% in 2020 and 55.1% this year). Additionally, the intensity of dissatisfaction has lessened.

81.2% of respondents reported having trust in the safety of products sold in Ohio dispensaries. Only 8.08% reported not trusting the safety of dispensary products.

CONSIDERATIONS FOR ADJUSTMENT

Patients' dissatisfaction is driven by a complex combination of factors, some of which would require action by the Ohio General Assembly while others can be addressed by changes to OMMCP rules. Below we list several program features that might warrant a consideration for adjustment to make OMMCP function better for Ohio patients.

Home grow

By allowing patients and caregivers to grow a small number of marijuana plants, Ohio's medical marijuana program could decrease the financial burdens on patients and also allow patients access to specific strands of cannabis that they might otherwise not be able to find in dispensaries. Though home grow provisions are championed by many medical marijuana advocates, experiences in other states reveal a home grow provision carries with it inherent risks such as promulgation of illicit products beyond patient community, unclear mandates for law enforcement agencies and other enforcement challenges. However, most states have now successfully instituted policies that have mitigated these concerns.

Assessment of licensing fees

Licensing fees help support the administrative structure of OMMCP, but Ohio's licensing fees tend to be some of the highest in the country. Whether such high fees are needed for the effective functioning of OMMCP is difficult to assess given limited public information about the administrative costs of OMMCP. Still, the high licensing fees in Ohio, along with the regulatory burdens on medical marijuana businesses, contribute to the relatively high cost of marijuana products in the state.

Patient fees and renewal considerations

The frequency with which patients must prove ongoing medical issues (especially for chronic conditions such as HIV/AIDS, Crohn disease and others) as well as the costs and frequency of registration should be carefully considered to minimize unnecessary burden on patients.

Patient-centered reconsideration of current purchase limitations

OMMCP regulations put strict limits on how much of medical marijuana product a patient can purchase in any given 90-day period, which appears to be a significant source of confusion and dissatisfaction. While limiting the amount of marijuana a patient can purchase for a given period of time is common, Ohio limits appear stricter than those of other states and do not allow for consideration of the type of condition an individual patient is suffering from (with the exception of patients diagnosed with a terminal illness who are able to purchase greater quantities). A patient-centered reconsideration of current purchase limitations could positively impact patients' experience with OMMCP.

Limited number of cultivator licenses

In April 2021 the State of Ohio Board of Pharmacy voted to allow 73 additional medical marijuana dispensaries, which was followed in September 2021 by the Ohio Department of Commerce's announcement that existing cultivators will be able to apply to expand their grow space up to three times of the original limit. While many factors influence the price of medical marijuana, additional grow space as well as additional growers could reduce product cost (although grower operational costs may be dictating pricing structure). Further examination of the number and operational costs of medical marijuana businesses is needed to assess which factors drive medical marijuana prices in Ohio.

Home delivery

In response to COVID-19, Ohio instituted a number of regulatory changes for medical marijuana patients and businesses, which had a positive impact on patients' satisfaction with OMMCP. But home delivery option was not one of the accepted changes even though many other states have allowed home delivery during this time. The lack of home delivery was ranked fifth by the survey respondents among factors driving their dissatisfaction.

Number of physicians with a certificate to recommend

The number of physicians completing the certification process to enable them to recommend medical marijuana to patients in Ohio continues to stagnate. The low number of physicians impacts patient's ability to access a physician and might result in higher patient fees. The allowance for telemedicine during the COVID-19 pandemic might mitigate some of these issues temporarily while enforcement of telemedicine regulations remains suspended, but the state should explore ways to encourage more physicians to obtain a certificate to recommend.

Employment protections

Most states with legal medical or recreational marijuana provide very limited protections for medical marijuana patients, with some, such as Ohio, providing no protections at all. Employment protection for marijuana use is a complex issue, shaped partially by continued federal prohibition on marijuana as well as the challenge of detecting how and when past marijuana use may impair job performance. Adopting some of the employment protections for medical marijuana patients adopted in other states—such as prohibiting employers from discriminating against workers simply on their status as a medical marijuana patient—would be a positive step forward for patients as well as the program as a whole.

I. INTRODUCTION

On September 8th, 2016, HB 523 went into effect, creating Ohio's Medical Marijuana Control Program (OMMCP) and making Ohio the 25th state to enact a comprehensive medical marijuana program. Similar to other states that have enacted medical marijuana reforms through a legislative process, Ohio's medical marijuana regime has strict controls on access to medical marijuana and an elaborate regime regulating cannabis cultivation, manufacturing, and sales. Home growing is not allowed under HB 523, and all marijuana products are manufactured and sold through state-licensed businesses.

While OMMCP was supposed to become functional within two years of enactment, it was not until January 2019 that the first sales of medical marijuana took place at an Ohio licensed dispensary. Since then, OMMCP has experienced tremendous growth in terms of the number of patients and the amount of cannabis flower and manufactured units sold. Yet, OMMCP has also experienced stagnating numbers of physicians licensed to recommend and has battled persistent levels of dissatisfaction among patients and potential patients¹. This report traces the evolution of OMMCP over the last three years both in terms of its growth and OMMCP patients' and prospective patients' satisfaction levels with the functioning and design of the program. The first part of the report focuses on the evolution of OMMCP followed by a description of the survey methodology. The second part of the report details the respondents' demographic profile, OMMCP participation and marijuana usage, purchasing behavior and considerations, and respondent's satisfaction. The report concludes with a few recommendations with respect to possible areas of improvement of the OMMCP to enhance the accessibility of the program and patient satisfaction.

II. OHIO MEDICAL MARIJUANA CONTROL PROGRAM – THREE YEARS IN REVIEW

Three government agencies help regulate OMMCP: the Ohio Department of Commerce is responsible for overseeing medical marijuana cultivators, processors and testing laboratories; the State Medical Board of Ohio is responsible for certifying physicians to recommend medical marijuana and controlling the list of qualifying conditions; and State of Ohio Board of Pharmacy is responsible for overseeing medical marijuana retail dispensaries, the registration of medical marijuana patients and caregivers, and the approval of new forms of medical marijuana. In addition, a Medical Marijuana Advisory Committee has authority under Ohio law to develop and submit to these three agencies any recommendations related to the OMMCP and the implementation and enforcement of the related Ohio Revised Code.

In order to cultivate, process or sell medical cannabis in the state of Ohio, a business first has to obtain one of a limited number of licenses. As of August 2021, there were a total of 20 Level I cultivator provisional licensees with 15 of them receiving a certificate of operation and 14 Level II cultivator provisional licensees, with 12 of those receiving a certificate of operation.² As of the same date, there were 58 provisional licenses granted for dispensaries, with 54 of them receiving permission to operate³ and 47 processor provisional licensees with 34 having a certificate of operation.

A. Medical marijuana production and sales

Despite the limited number of companies allowed to cultivate, process and sell medical cannabis in Ohio, the amount of plant product and the number of manufactured units sold every month since April 2019 has soared (Fig.1 and 2) as have corresponding monthly sales receipts depicted in Figure 3.⁴

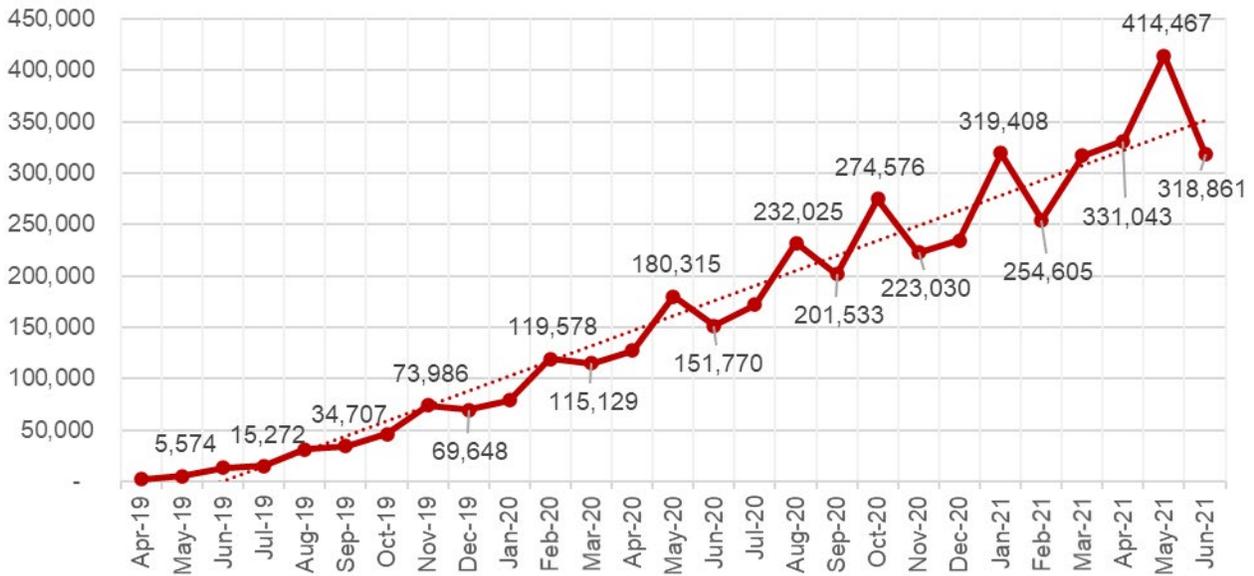
¹ Prospective or potential patients for the purposes of this survey are defined as patients with a qualifying medical condition for medical marijuana.

² Level I cultivators are permitted to operate an initial marijuana cultivation area up to 25,000 square feet. Level II cultivators are permitted to operate an initial marijuana cultivation area of 3,000 square feet. <https://www.medicalmarijuana.ohio.gov/cultivation>

³ In April 2021, the Ohio Board of Pharmacy approved the licensure of 73 additional dispensaries to meet the growing patient demand. According to the Ohio Board of Pharmacy, the application window for the additional licenses should open in summer of 2021. Although, as of July 12, 2021, the RFA II has not yet been announced. *Dispensary RFA II*, Ohio Medical Marijuana Control Program, <https://medicalmarijuana.ohio.gov/Documents/Dispensaries/Dispensary%20Applications%20-%20RFA%20II/Dispensary%20Applications%20-%20RFA%20II/Ohio%20Medical%20Marijuana%20Control%20Program%20-%20Dispensary%20RFA%20II.pdf>

⁴ All monthly data are calculated by adding weekly sales provided by the Ohio Department of Commerce. Due to the weekly collection method, some months in our figures will include sales from up to 6 days of the following month which results in fluctuating numbers instead of a more linear graph. We have thus included a trend line to demonstrate trends in sales. Please see Appendix I for detailed weekly sales information.

Figure 1. Monthly sales of manufactured product units

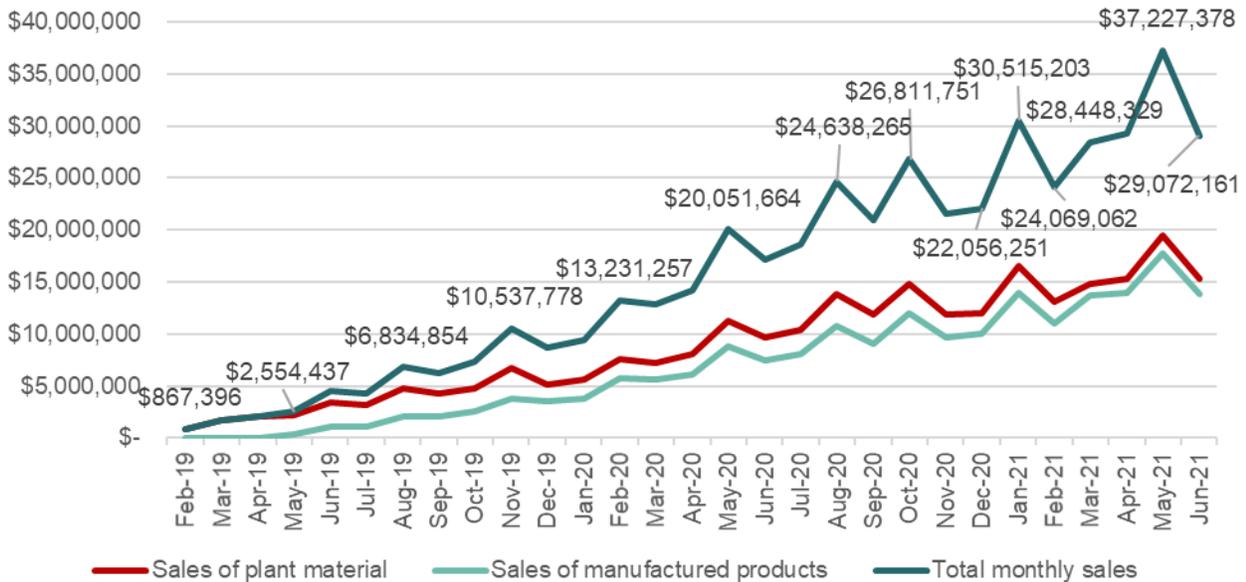


Source of data for Figures 1, 2 and 3: Ohio Department of Commerce, July 26, 2021. All sales data are reported on weekly basis on Saturdays for sales Monday through Saturday. Monthly data were calculated by adding weekly sales, but due to the weekly collection method, some months in our figures will include sales from up to 5 days of the previous month. We have included a trendline to demonstrate trends in sales. Detailed sales data information is included in Appendix I.

Figure 2. Monthly sales of plant material in pounds



Figure 3. Monthly sales receipts – plant and manufactured products



According to the data provided by the Ohio Department of Commerce, as of July 17, 2021, the medical marijuana program recorded nearly \$479 million in sales since its inception in January 2019 through the sale of 4,616,468 manufactured product units and 544,382 pounds of plant material.

B. Medical Marijuana Tax and Fee Revenue

The state of Ohio collects revenue through various sources related to its medical marijuana program including state and local sales taxes, application and licensing fees from all medical marijuana businesses, and annual fees from patients and caregivers. According to data provided by the Ohio Department of Taxation, as of March 31, 2021, the state of Ohio collected \$18,996,275 from the 5.75% state sales tax. Municipalities, counties, and other regional entities have collected an additional \$4,825,748 in tax from local sales taxes ranging between 0.5 – 2.25%⁵. Unlike in some other states, there is no special excise tax imposed on medical marijuana in Ohio. See Appendix II for a detailed monthly breakdown of tax revenues.

Table 1. Tax revenues

Tax type	Fiscal year 2019 (from start of commercial sales through June 2019)	Fiscal year 2020 (from July 2019 through June 2020)	Fiscal year 2021 (data from July 2020 through March 2021)
Sales tax collected	Redacted due to disclosure	\$6,680,571	\$12,135,890 ⁶
Permissive sales tax collected	Redacted due to disclosure	\$1,637,339	\$3,142,527 ⁷

⁵ Figures for April, May, and June were not yet available at the time this data was shared by the Ohio Department of Taxation on August 24, 2021. Also, as indicated in Table 1, the tax figures do not include collections from February, March, April and May of 2019 due to redaction per Department's policy to not disclose revenue figures when there are ten or fewer taxpayers as it may be possible to identify the profile/identity of a particular taxpayer.

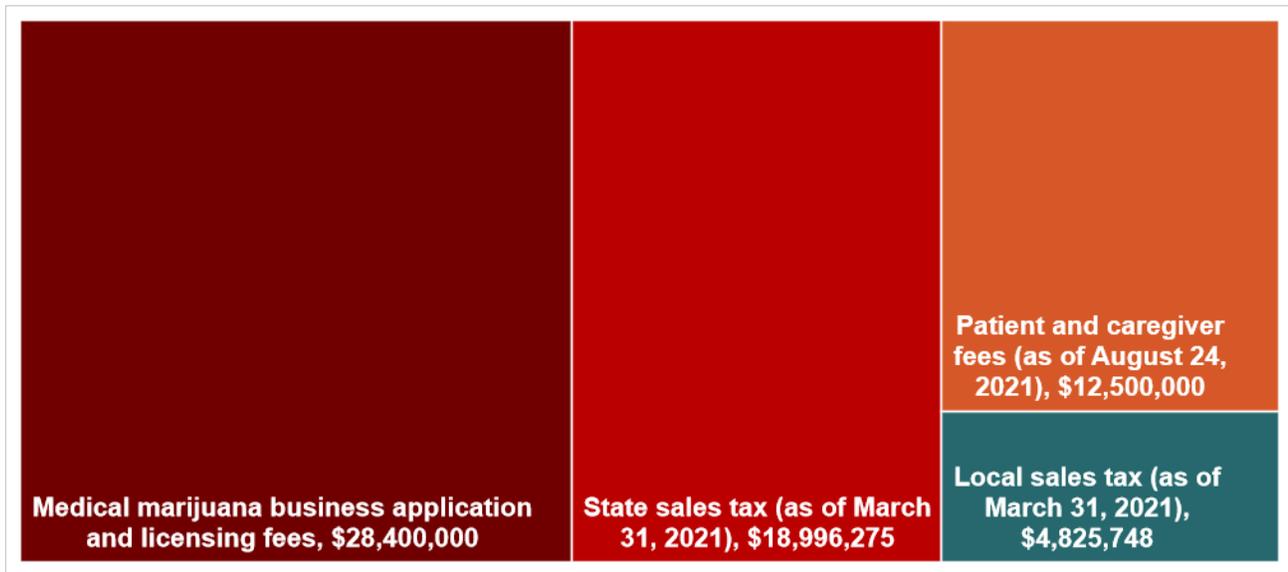
⁶ Tax information for FY 2021 in this table does not include taxes collected in the months of April, May, and June of 2021. These figures were not yet available at the time of writing.

⁷ Ibid.

In addition to tax revenues, the state collects application and licensing fees from all cannabis businesses that want to operate in the state of Ohio, as well as annual registration fees from patients and caregivers. As of September 3, 2021, according to data provided by the Ohio Department of Commerce, \$19.9 million was collected in application and licensing fees from medical marijuana cultivators, processors and laboratories. An additional \$12.5 million was collected in patient and caregiver fees by the State of Ohio Board of Pharmacy from the time of OMMCP inception through August 24, 2021. The State of Ohio Board of Pharmacy has also collected approximately \$8.5 million in application and licensing fees from medical marijuana dispensaries⁸. In other words, to date, the state has collected significantly more revenue from the various fees imposed on marijuana businesses and patients than from the medical marijuana sales tax.

- Cultivator Level 1: \$20,000 Application fee, \$180,000 Licensure fee, and \$200,000 Renewal Fee.
- Cultivator Level 2: \$2,000 Application Fee, \$18,000 Licensure Fee, \$20,000 Renewal Fee.
- Processor: \$10,000 Application Fee, \$90,000 Licensure Fee, \$100,000 Renewal Fee.
- Dispensary: \$5,000 Application Fee, \$70,000 Licensure Fee, \$70,000 Renewal Fee.

Figure 4. State and local government revenue streams



C. Increased number of patients, but no growth in certified physicians

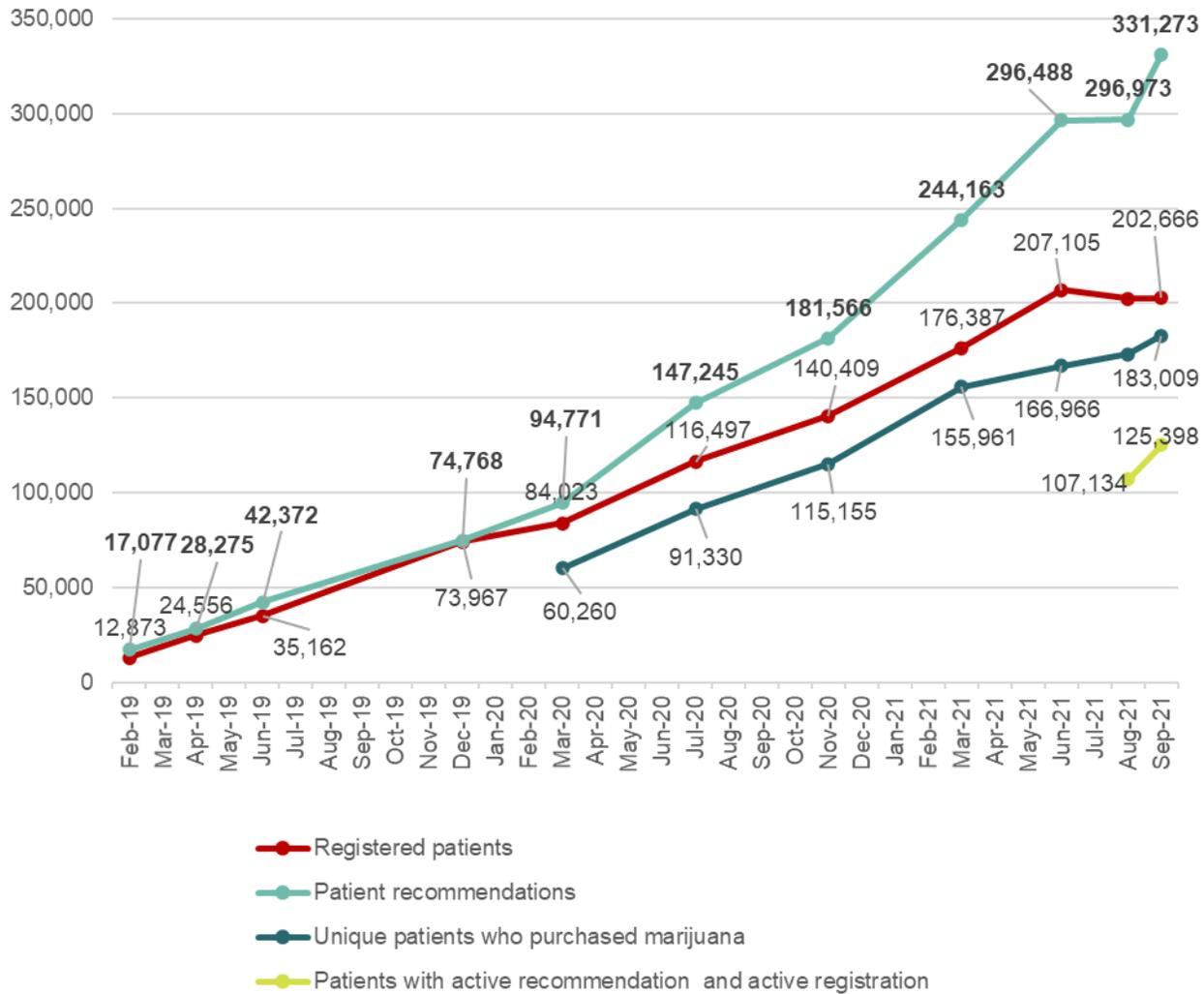
The OMMCP has also seen a significant rise in interest among patients and caregivers, with the total number of patients who have sought registration growing by over 80,000 in the past 12 months. According to the OMMCP Program Update from August 2021⁹, Ohio had 202,247 patients and 24,261 caregivers who have registered at one point over the last three years. However, the cumulative number of registered patients alone can be misleading as it does not account for patients who are no longer registered with the program. Similarly, the number of unique patients who have purchased medical marijuana depicted

⁸ Information provided by the State of Ohio Board of Pharmacy on September 15, 2021. The fees included dispensary application fees, dispensary certificate of operation initial issuance fees, dispensary certificate of operation renewal fees, and dispensary change of ownership/major modification application fees.

⁹ OMMCP Program Update, August 2021, [https://medicalmarijuana.ohio.gov/Documents/advisory-committee/Meeting%20Materials/2021-12%20\(August\)/MMAC%20Updates%20August%202021.pdf](https://medicalmarijuana.ohio.gov/Documents/advisory-committee/Meeting%20Materials/2021-12%20(August)/MMAC%20Updates%20August%202021.pdf)

in Figure 5 below is cumulative, not giving us a clear idea of how many unique patients purchase marijuana in any given months. In the last two months of available OMMCP reports from August and September 2021, the State of Ohio Board of Pharmacy also provided the number of patients with an active recommendation and active registration, with 107,134 active patients reported in the August report¹⁰ and 125,398 active patients reported in the September report¹¹.

Figure 5. OMMCP Medical marijuana patients

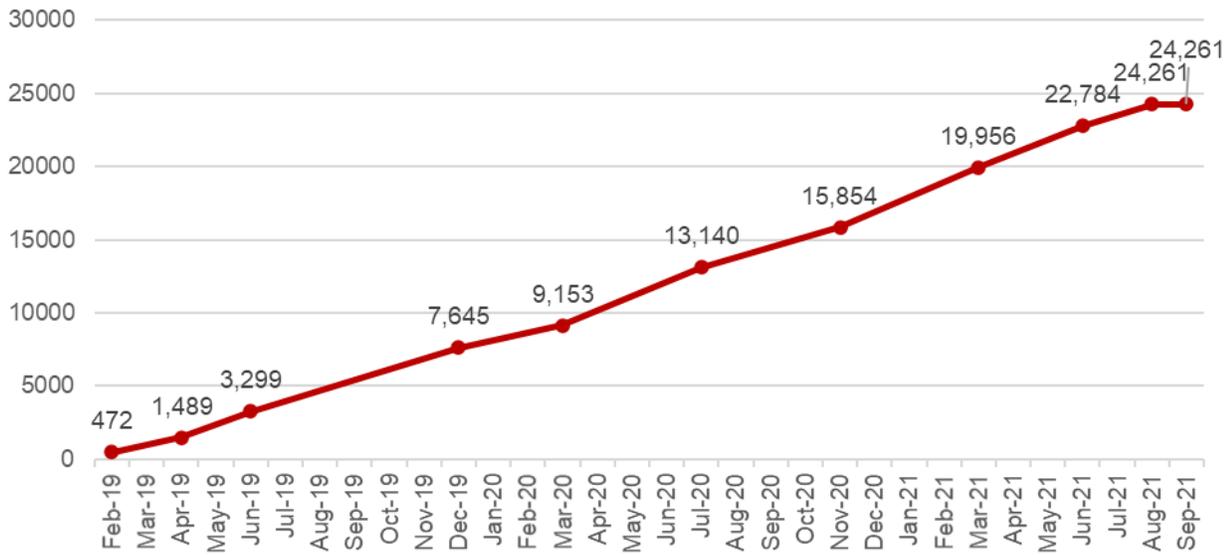


Source: OMMCP Advisory Committee meeting reports - <https://medicalmarijuana.ohio.gov/advisory-committee>

¹⁰ Ibid.

¹¹ OMMCP Program Update: By the Numbers, updated September 1, 2021, <https://medicalmarijuana.ohio.gov/Documents/ProgramUpdate/program%20update.pdf>

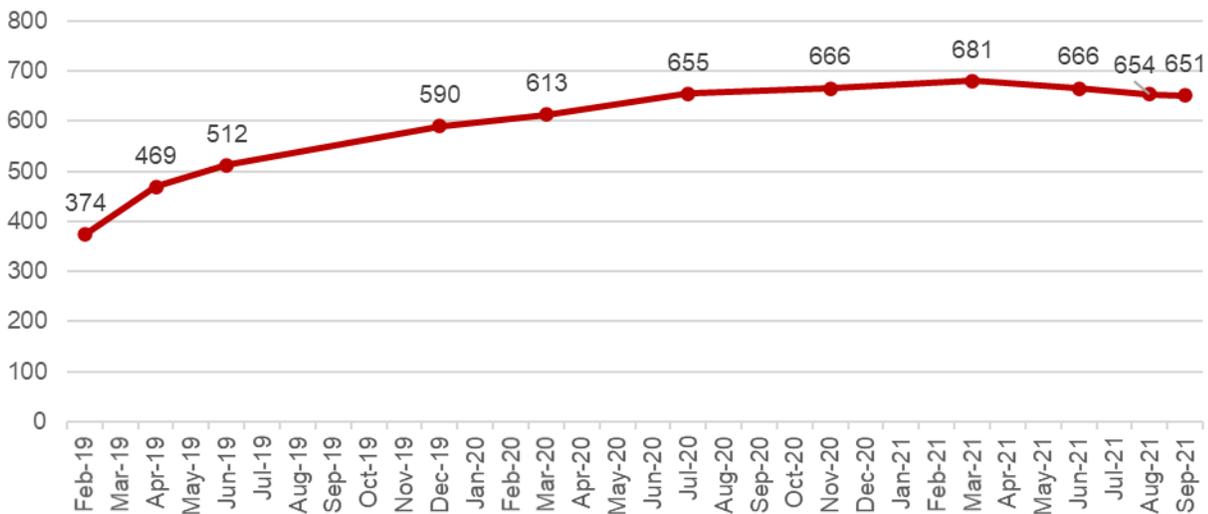
Figure 6. OMMCP Caregiver registrations



Source: OMMCP Advisory Committee meeting reports - <https://medicalmarijuana.ohio.gov/advisory-committee>

Despite the growth in registered patients, the number of physicians who have obtained certificates to recommend has remained virtually unchanged. As of September 2021, 651 physicians can recommend medical marijuana to patients, down slightly from 655 physicians 12 months prior (Fig. 7.)

Figure 7. Number of physicians with certificates to recommend



Source: OMMCP Advisory Committee meeting reports - <https://medicalmarijuana.ohio.gov/advisory-committee>

The declining number of physicians puts Ohio near the very bottom of states that have legalized medical marijuana within two years of Ohio’s medical marijuana legalization. As shown in Table 2, only West Virginia has a lower number of physicians per 100,000 residents than Ohio and their medical marijuana program was adopted a year after Ohio.

Table 2. Number of physicians with certificates to recommend

State	Number of physicians	Physicians per 100,000	Year of adoption of medical marijuana
West Virginia	59 ¹²	3.29	2017
Ohio	651 ¹³	5.52	2016
Oklahoma	239 ¹⁴	6.04	2018
Florida	2521 ¹⁵	11.70	2016
Pennsylvania	1583 ¹⁶	12.17	2016
New York	3342 ¹⁷	16.54	2014
Utah	628 ¹⁸	19.20	2018
Arkansas	819 ¹⁹	27.20	2016
Minnesota	1916 ²⁰	33.58	2014
Maryland	2090 ²¹	33.83	2014
North Dakota	275 ²²	35.30	2016
Illinois	5,300 ²³	41.37	2014

III. SURVEY METHODOLOGY

From April 5th, 2021, to June 1st, 2021, researchers collected responses through an online Qualtrics survey with an average response time of nine minutes. Our survey participants were recruited through three primary channels: networks of the Drug Enforcement and Policy Center, Harm Reduction Ohio, Ohio Cannabis Chamber of Commerce, and other grassroots organizations involved with OMMCP; paid social media advertisement; and inclusion in the April 2021 monthly newsletter distributed to OMMCP patients and caregivers by the State of Ohio Board of Pharmacy. The survey link was shared via social media (Facebook, Twitter, LinkedIn), online web pages, and email campaigns from our collaborating organizations. The survey instrument reported a total of 1,402 respondents, however 76 of those participants did not respond to any of the survey questions. The total number of participating respondents is thus 1,326. While researchers were particularly interested in the recruitment of current and potential patients, there were no exclusion criteria.

The survey questions explored a number of topics related to people’s experience with OMMCP. The topics included the prevalence of the current qualifying conditions among respondents, whether they were registered patients, and what barriers prevented people from using marijuana or registering with OMMCP. The survey asked for other relevant information including frequency of marijuana usage, length of marijuana use, and support for full legalization. Additionally, the survey included questions on respondents’ preferences with respect to dispensary usage and the importance of various factors in their purchasing decisions. Participants also rated their satisfaction with the current state of medical marijuana in Ohio, how COVID-related changes to the OMMCP have affected their satisfaction, and what factors are driving their dissatisfaction. Skip and

¹² https://dhhr.wv.gov/bph/Documents/Physician%20Licenses_Website_05-12-2021.pdf

¹³ OMMCP Program Update: By the Numbers, updated September 1, 2021, <https://medicalmarijuana.ohio.gov/Documents/ProgramUpdate/program%20update.pdf>

¹⁴ <https://oklahoma.gov/content/dam/ok/en/omma/docs/physicians/OMMAPhysicianRegistry.pdf>

¹⁵ https://s27415.pcdn.co/wp-content/uploads/documents/QP_List/082721.pdf

¹⁶ <https://www.health.pa.gov/topics/Documents/Programs/Medical%20Marijuana/DOH%20Approved%20Practitioners.pdf>

¹⁷ https://www.health.ny.gov/regulations/medical_marijuana/

¹⁸ <https://medicalcannabis.utah.gov/wp-content/uploads/2021/04/CMC-March-2021-Report.pdf>

¹⁹ https://www.healthy.arkansas.gov/images/uploads/publications/FY_2020_MMJ_Report_V.11.25.2020.pdf

²⁰ <https://www.health.state.mn.us/people/cannabis/data/dashboard.html>

²¹ [https://mmcc.maryland.gov/Documents/patient_stats/commission_stats\(Jan%2721\).pdf](https://mmcc.maryland.gov/Documents/patient_stats/commission_stats(Jan%2721).pdf)

²² https://www.health.nd.gov/sites/www/files/documents/Files/MM/Annual_Report_2020.pdf

²³ <https://www.dph.illinois.gov/sites/default/files/publications/illinois-medical-cannabis-patient-program-annual-report-general-assembly-2020.pdf>

display logic was incorporated into the survey to ensure survey flow and to allow for a more detailed analysis of collected information. (See Appendix VII for the full survey.)

There is an important limitation to our data stemming from the non-randomized selection of participants. By using three distinct communication channels for recruitment and by allowing study participants to self-select for participation, the sample cannot be said to be fully representative of all OMMCP patients and prospective patients. The survey instrument was distributed through networks of people who are typically supportive of marijuana reform and are more likely to support full legalization of marijuana (97.1% of respondents favored the full legalization of marijuana compared to 60% of the American public in favor of full legalization²⁴). While this sample is not a perfect representation of the population at large, it provides a useful window into the current view of the OMMCP among those most likely interested in, and potentially affected by, the current system.

IV. RESPONDENT PROFILE

A. Demographics

The survey collected information on the gender and race of respondents to provide us with a picture of which groups were more likely to use medical marijuana. With respect to gender, the participants skewed slightly male with 703 male participants and 580 female participants. In regard to race, the surveyed participants skewed heavily White/Caucasian with 88.2% of participants identifying as White/Caucasian, 3.6% participants identifying as Black/African American, and 1% and 0.5% identifying as Latino/Hispanic and Asian/Pacific Islander respectively. When looking at gender ratios within each race group, they mirror the overall respondent population with slightly more than 50% being male in each group.

Figure 8. Respondent gender

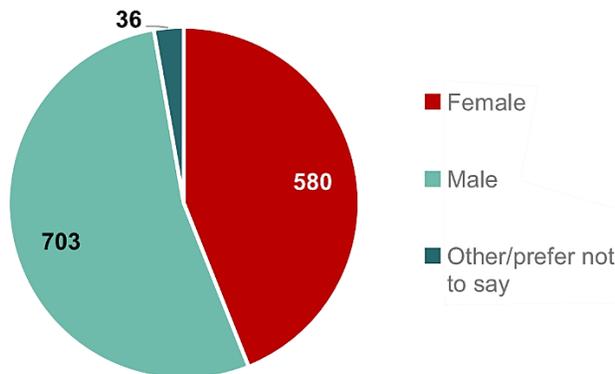
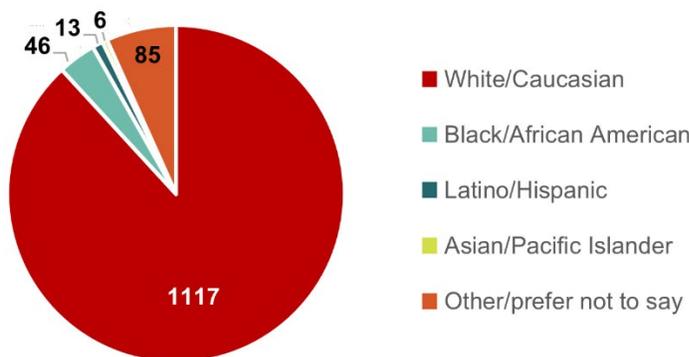


Figure 9. Respondent race



²⁴ Ted Van Green, *Americans overwhelmingly say marijuana should be legal for recreational or medical use*, Pew Research Center, April 16, 2021, accessed on June 29, 2021. <https://www.pewresearch.org/fact-tank/2021/04/16/americans-overwhelmingly-say-marijuana-should-be-legal-for-recreational-or-medical-use/>

B. Eligibility for Medical Marijuana

The OMMCP currently recognizes 25 medical conditions that can make an Ohio resident eligible to use medical marijuana.²⁵ Of the 1,223 respondents who answered a question about their medical condition that would make them eligible for medical marijuana, only 30 people reported not having any eligible condition and did not list any condition that they would like to have included, suggesting that the vast majority of respondents were people whose medical condition made them eligible for participation in OMMCP. In Table 3 below, we include all conditions reported by more than ten people as their qualifying condition. The most frequently reported conditions in our 2021 survey were chronic, severe, or intractable pain, followed by post-traumatic stress disorder and fibromyalgia, which mirrors reported conditions in the 2020 survey and the overall OMMCP patient population.²⁶

Table 3. Qualifying conditions among respondents

Condition reported ²⁷	Survey - % (n)	Number of responses
Pain: either chronic, severe, or intractable (difficult to manage)	37.75%	869
Post-traumatic stress disorder (PTSD)	18.68%	430
Fibromyalgia	7.30%	168
Inflammatory bowel disease	6.21%	143
Spinal cord disease or injury	5.56%	128
Cancer	2.43%	56
Traumatic brain injury	2.13%	49
Epilepsy or other seizure disorder	1.69%	39
Glaucoma	1.26%	29
Crohn's disease	1.13%	26
Hepatitis C	0.74%	17
Multiple sclerosis (MS)	0.74%	17
HIV/AIDS	0.52%	12

In addition to asking about medical conditions recognized by OMMCP as qualifying conditions, the survey also asked respondents to indicate if there was a medical condition that was not currently recognized as a qualifying condition they would like to see included. 244 people identified additional conditions, with the most frequently identified conditions being anxiety and depression (identified by 129 and 68 people respectively). Other identified conditions included arthritis, migraines, insomnia, autism, bipolar disorder, ADHD, lupus, and others. Several conditions identified by respondents under this question are already included as qualifying conditions under OMMCP (arthritis and migraines as chronic pain, and irritable bowel syndrome) raising the question of whether information about qualifying conditions is easily accessible to the general public.

C. Distance to Nearest Dispensary

As of August 2021, the state of Ohio had 54 dispensaries with a certificate of operations, which is close to the original limit of

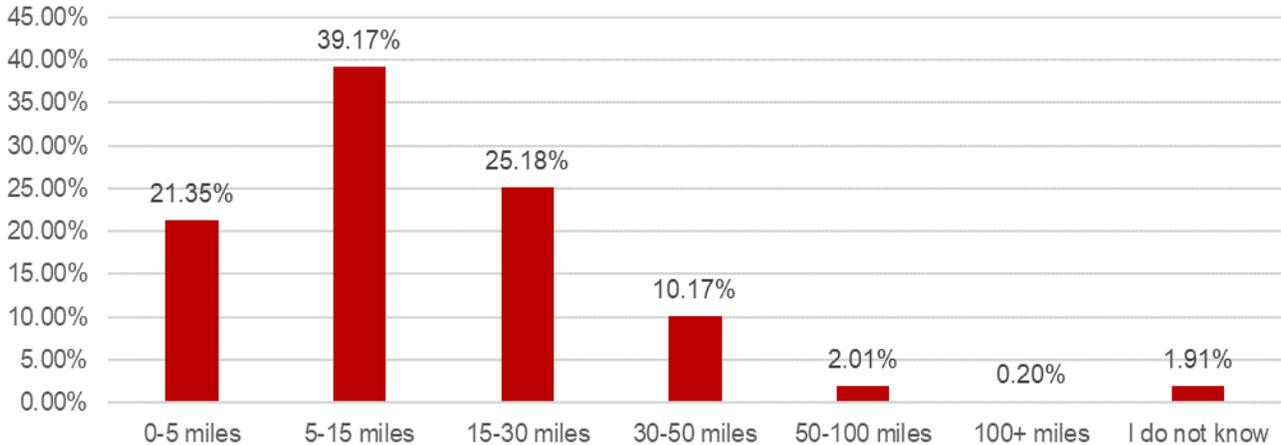
²⁵ OMMCP website, FAQ, lists the following qualifying conditions: AIDS, amyotrophic lateral sclerosis, Alzheimer's disease, cachexia, cancer, chronic traumatic encephalopathy, Crohn's disease, epilepsy or another seizure disorder, fibromyalgia, glaucoma, hepatitis C, Huntington's disease, inflammatory bowel disease, multiple sclerosis, pain that is either chronic and severe or intractable, Parkinson's disease, positive status for HIV, post-traumatic stress disorder, sickle cell anemia, Spasticity, spinal cord disease or injury, terminal illness, Tourette syndrome, traumatic brain injury, and ulcerative colitis. In February 2021, the State Medical Board of Ohio determined the following conditions are considered covered by the existing chronic or intractable pain qualifying condition: arthritis, chronic migraines, and complex region pain syndrome. <https://www.medicalmarijuana.ohio.gov/faqs>

²⁶ OMMCP Advisory Committee, August 2021 Meeting report. [https://medicalmarijuana.ohio.gov/Documents/advisory-committee/Meeting%20Materials/2021-12%20\(August\)/MMAC%20Updates%20August%202021.pdf](https://medicalmarijuana.ohio.gov/Documents/advisory-committee/Meeting%20Materials/2021-12%20(August)/MMAC%20Updates%20August%202021.pdf)

²⁷ Participants were able to select all applicable conditions.

60 dispensaries established by the Board of Pharmacy in 2017.²⁸ As shown in Figure 10 below, roughly 60.6% of respondents lived within a 15-mile radius of a legal dispensary, while 37% lived 15 miles or more from the nearest dispensary presenting a possible inconvenience for patients. While additional 73 dispensary licenses have been approved as of April 2021, it is likely that there will continue to be patients for whom travel to the nearest dispensary will exceed 50 miles given the geographic distribution of the new licenses²⁹.

Figure 10. Distance to closest dispensary

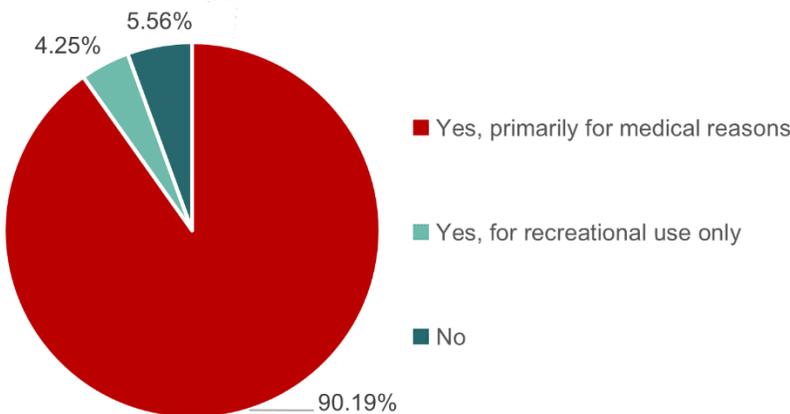


V. OMMCP PARTICIPATION AND MEDICAL MARIJUANA USAGE

A. Marijuana Usage

1,295 people responded when asked whether they are currently using marijuana. Of those, 1,168 (90.2%) reported using marijuana primarily for medical reasons, 55 (4.25%) reported usage primarily for recreational purposes and 72 (5.56%) of respondents reported no current use of marijuana.

Figure 11. Reported use of marijuana



²⁸ Jackie Borchart, *Ohio plans to more than double number of medical marijuana dispensaries*, The Enquirer, April 19, 2021. <https://www.cincinnati.com/story/news/2021/04/19/ohio-medical-marijuana-dispensaries-add-73-board-of-pharmacy/7284715002/>

²⁹ Ohio Medical Marijuana Control Program, State of Ohio Board of Pharmacy, RFAII Proposal –4.19.2021, <https://medicalmarijuana.ohio.gov/Documents/Dispensaries/Dispensary%20Applications%20-%20RFA%20II/Dispensary%20Applications%20-%20RFA%20II/RFA%20II%20Presentation.pdf>

Seventy-four percent of respondents who reported using marijuana primarily for medical reasons have used marijuana for more than three years, which means most respondents' use of marijuana for medical reasons predates the start of official licensed sales in the Ohio medical marijuana program. Twenty-six percent of the same subgroup of respondents only started using marijuana after OMMCP initiation (2 years or less). Additionally, 79.1% of those who reported using marijuana primarily for medical reasons reported using marijuana on a daily basis and an additional 14.4% of respondents reported using medical marijuana several times a week. Only 6.5% of people reported using marijuana once a week or less. The figures for the length of use and frequency of use of medical marijuana are comparable to numbers from the 2020 survey.

Figure 12. Length of medical marijuana use

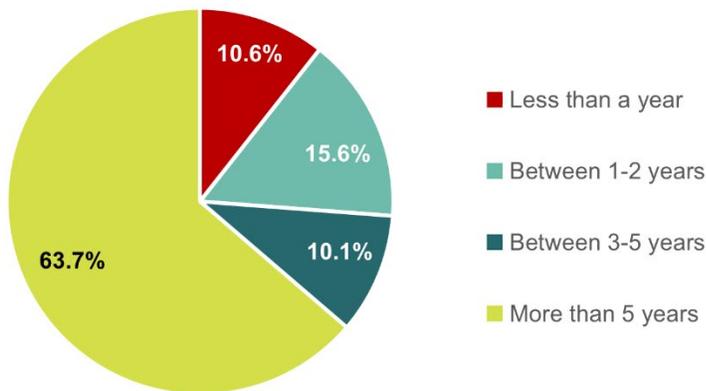
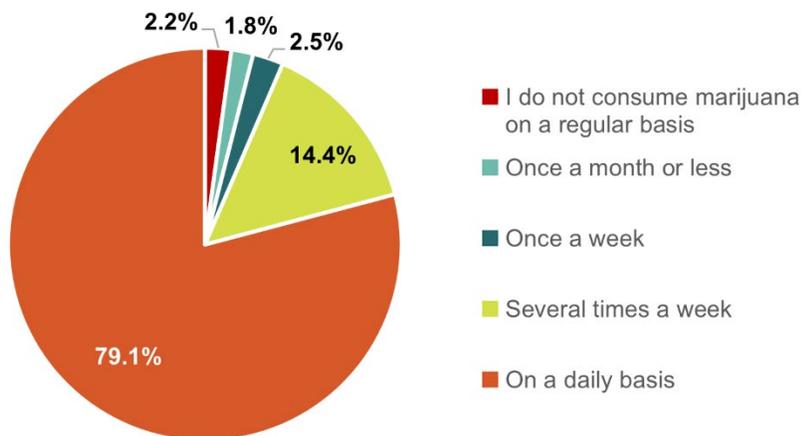


Figure 13. Frequency of medical marijuana use



B. OMMCP Registration

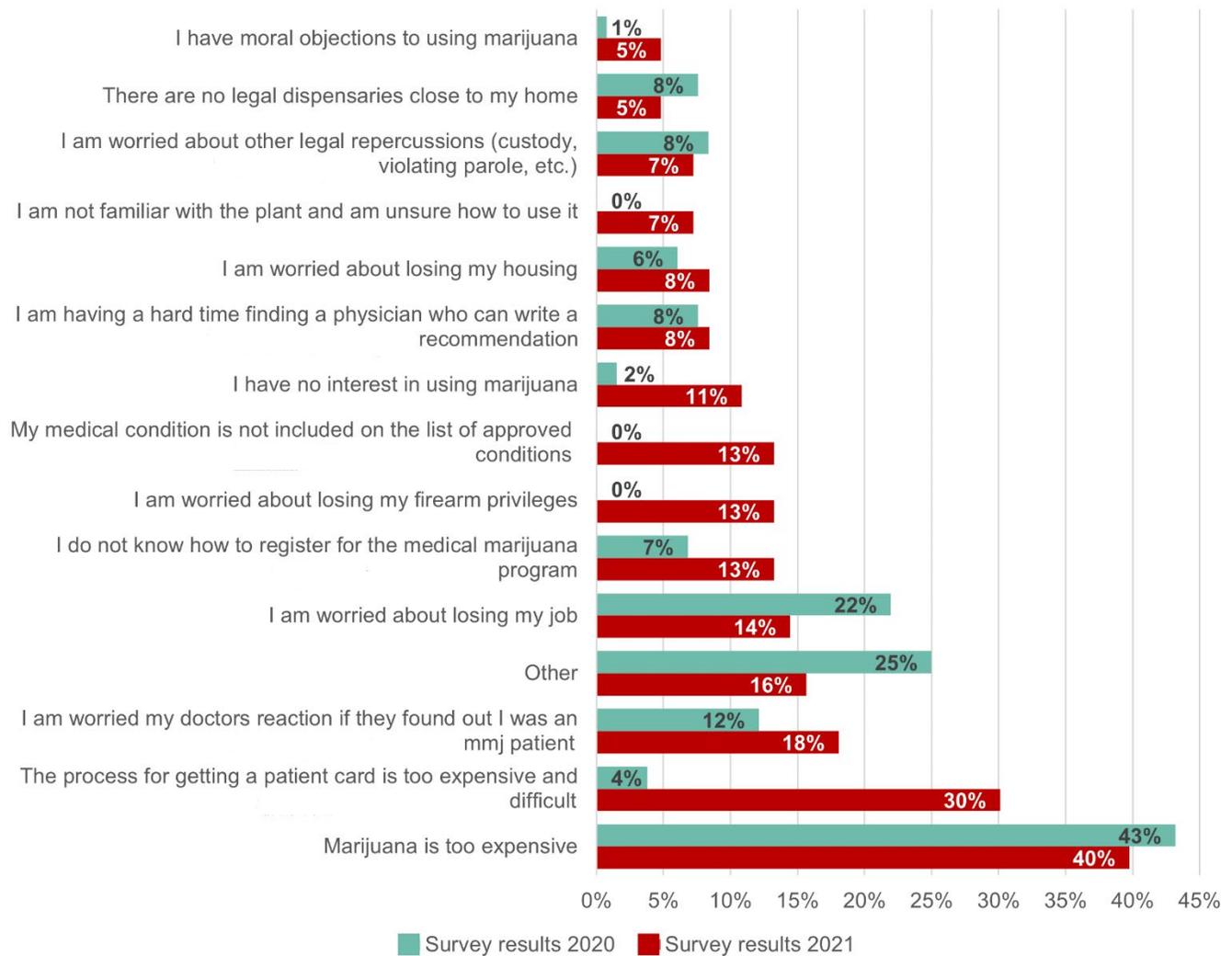
The rate of OMMCP registration among survey participants is significant with 81.5% of people reporting being currently registered as patients with OMMCP, 16.7% of people not registered and 1.8% of people reporting being a registered patient in the past. This is significantly higher than the rate of participation reported in 2020 (61.3% of people with an eligible condition were registered). However, it is worth noting that this year's survey was disseminated through an additional channel (April 30 monthly newsletter distributed to OMMCP patients and caregivers), which likely affected this particular measure of participation. If we look only at responses received prior to the newsletter dissemination (April 30, 2021, 3:00 p.m.) the rate of participation among people who reported a qualifying medical condition is closer to the 2020 survey results, with only 66.9% of eligible patients reporting registration with OMMCP.

The proportion of patients who have registered with OMMCP to the number of patients with recommendations has decreased rather significantly over the last 18 months. As shown in Figure 5 above, until March 2020 the number of registered patients tracked very closely to the number of recommendations issued (84,023 registrations to 94,771 recommendations). However, in August 2021 the gap between recommendations and registrations had widened significantly with 296,973 people having received a recommendation but only 202,247 taking the next step of registering for a medical marijuana card. In other words, today a larger share of people with recommendations are not registering relative to 18 months ago.

D. Reasons for Abstaining from Using Medical Marijuana

Eighty-three people responded to a question asking what was preventing them from using medical marijuana. As is shown in Figure 14 below, the main obstacle reported by respondents is the high cost of marijuana (40% of respondents to this question selected this option) and the difficulty and cost associated with obtaining a medical patient card (30% of respondents selected this option). The cost of marijuana was also the main concern among respondents to the 2020 survey. Other reasons selected for abstaining from using medical marijuana included fears of losing one’s employment, losing firearm privileges, and worries about how their doctors would react if they found out they were using medical marijuana.

Figure 14. Reasons for not using medical marijuana



VI. PURCHASING BEHAVIOR AND CONSIDERATIONS

A. Factors Influencing Purchase Preferences

To gather information on what drives people’s decisions when it comes to purchasing medical marijuana, the respondents were asked to rate the following elements on a scale from 1 (not at all important) to 5 (extremely important): price, product options, convenience, concern about law enforcement, and preference for purchasing from a specific seller. As we can see in Table 4, the most important factor for the vast majority of respondents remains price, with 59.2% of respondents indicating price was “extremely important” in their decision and an additional 26.8% stating it was “very important”. The second most important factor was the availability of product options, with 34.3% of respondents citing having different product options as “extremely important” and an additional 36.2% citing it as “very important” when purchasing marijuana. All five factors have ranked in the same position since the first survey in 2019.

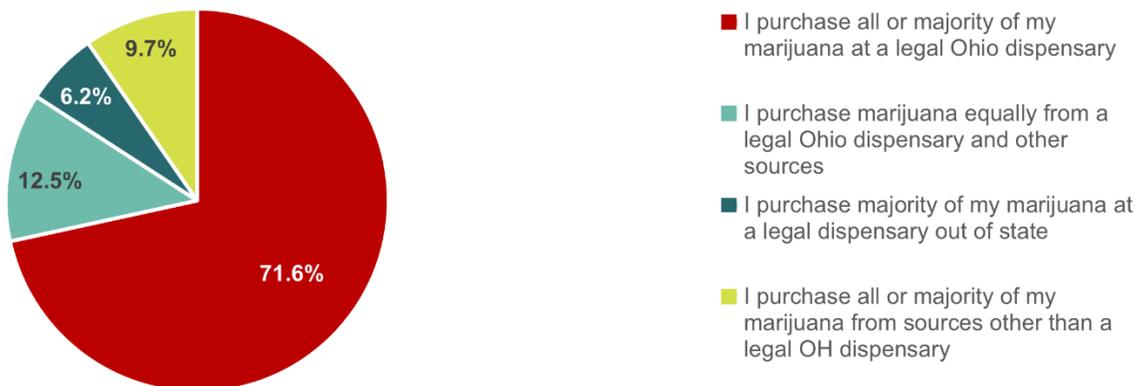
Table 4. Factors influencing purchase preferences

Factor	2019 Survey Importance (1-5)	2020 Survey Importance (1-5)	2021 Survey Importance (1-5)
Price	4.74	4.29	4.42
Product options	4.48	4.05	3.98
Convenience	4.43	3.75	3.85
Concerns about law enforcement	3.63	3.07	3.2
Buying from specific seller	3.52	2.72	2.67

B. Utilization of Licensed Dispensaries

In addition to looking at the rate with which people register for OMMCP, we also wanted to measure the extent to which people with qualifying conditions utilize licensed Ohio dispensaries to judge the overall participation in OMMCP (901 participants with a qualifying condition responded to this question). As shown in Figure 15 below, 71.6% of participants who had a qualifying medical condition purchased all or the majority of their marijuana from a licensed dispensary, 12.5% purchased marijuana equally from a legal Ohio dispensary and other sources, 6.2% of respondents purchased marijuana at a legal dispensary in another state and 9.7% of respondents purchased marijuana from sources other than a legal dispensary in Ohio. In total, close to 30% of surveyed people who could have purchased marijuana at an Ohio dispensary sometimes or almost always chose to purchase their supply from another source.

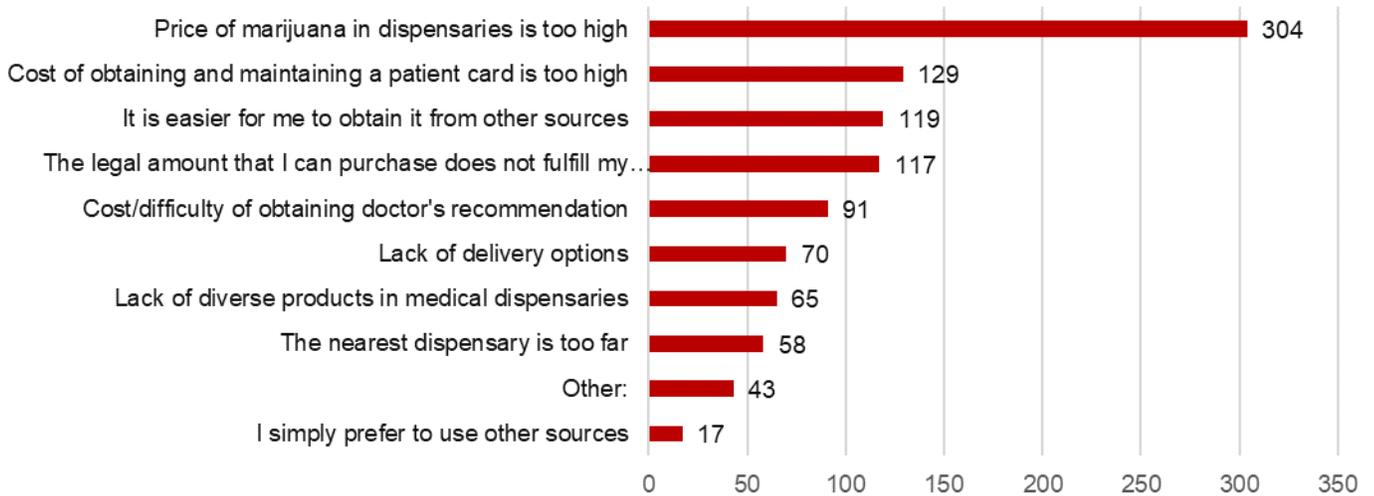
Figure 15. Purchase patterns of people with a qualifying medical condition



C. Reasons for Not Purchasing from Licensed Ohio Dispensary

There are a number of reasons why survey participants chose not to purchase their medical marijuana supply in licensed Ohio dispensaries. As shown in Figure 16 below, the most frequently cited reason (chosen by 77.6% of respondents) was the high cost of marijuana in Ohio dispensaries. This was distantly followed by the high cost of obtaining and maintaining a patient card (32.9%), the ease of obtaining marijuana from other sources (30.4%) and the fact that the amount a patient is allowed to purchase legally is not sufficient for the patient’s needs (29.8%). In addition to the reasons included in Figure 16, people listed factors such as low quality of product, desire to grow their own marijuana that fits their needs, dispensary workers who are not well informed about their product, fear of losing an occupational license or firearm privileges, and others.

Figure 16. Reasons for not purchasing medical marijuana from Ohio licensed dispensary

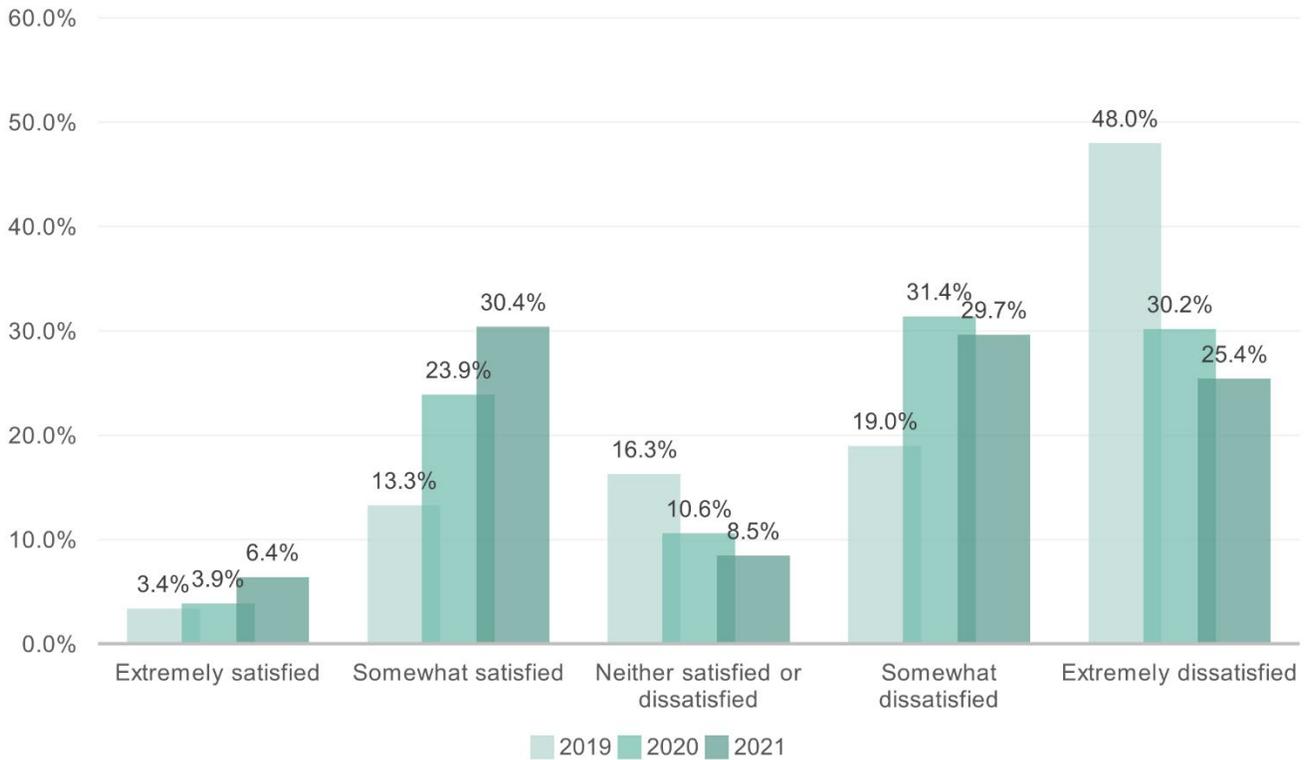


Yet, when asked whether they would be willing to purchase marijuana from a legal dispensary if it was similarly priced as their other sources, the vast majority, close to 89%, said that they would be willing to do so. This suggests that should the price of marijuana come down in Ohio dispensaries additional patients would utilize their services.

VII. SATISFACTION WITH OMMCP

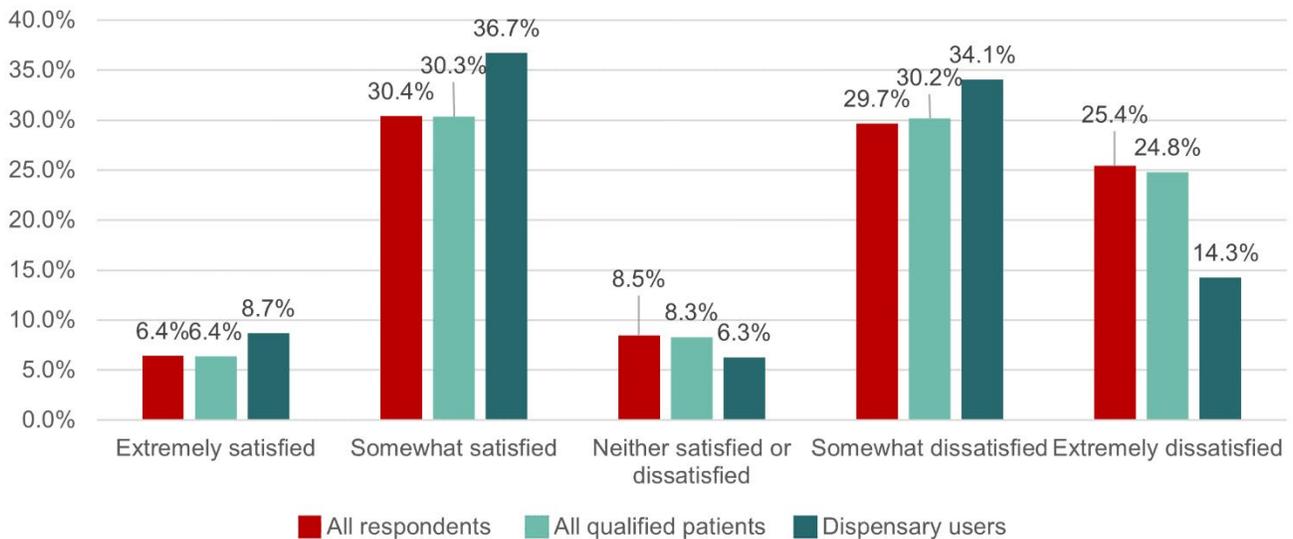
According to the data collected, a majority of respondents (55.1%) expressed some level of dissatisfaction with the current state of OMMCP. Of those dissatisfied, 25.4% responded that they are “extremely dissatisfied” and 29.7% responded being “somewhat dissatisfied.” While the level of dissatisfaction remains relatively high, it is important to note that in a year-to-year comparison, the overall dissatisfaction levels are declining (67% reported being dissatisfied in 2019, 61.6% in 2020 and 55.1% this year). Additionally, the intensity of dissatisfaction has lessened over time with only 25.4% of participants reporting being “extremely dissatisfied” compared to 48% of respondents in 2019. The level of satisfaction has also risen over time, with 36.8% of respondents reporting being somewhat or extremely satisfied compared to only 16.7% reporting satisfaction in 2019.

Figure 17. Satisfaction levels



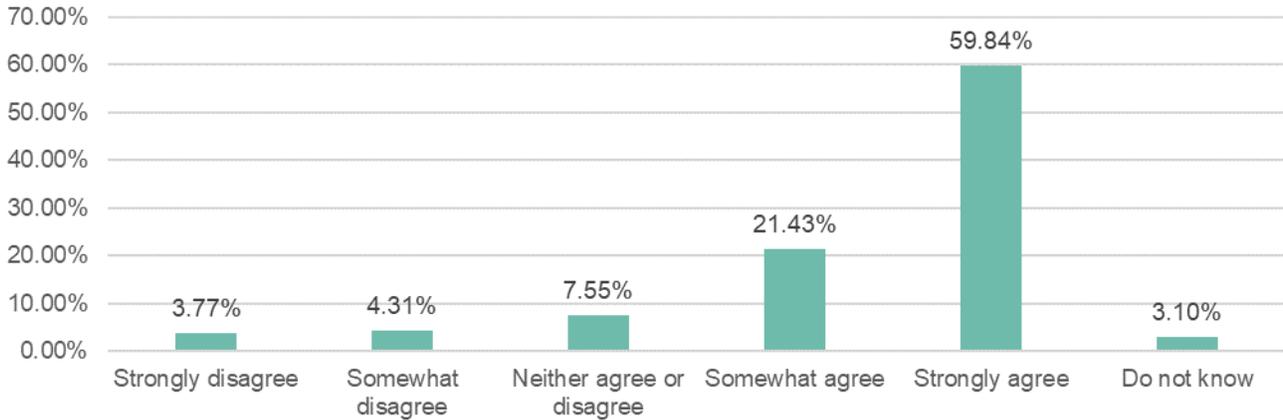
In addition to general levels of satisfaction among all respondents, we looked at levels of satisfaction among people with a qualifying medical condition as well as satisfaction levels of people who purchased all or a majority of their medical marijuana from an Ohio licensed dispensary. As we can see from Figure 18 below, while the satisfaction levels of all respondents are nearly identical to satisfaction levels of people with a qualifying medical condition, perhaps not surprisingly, the levels of satisfaction among people who primarily use Ohio dispensaries are slightly higher.

Figure 18. Satisfaction by level of involvement with OMMCP



Participants expressed high levels of trust in the safety of products sold in legal Ohio dispensaries. When asked to rate the extent to which respondents agreed with a statement “I trust the safety of products available in legal dispensaries”, 59.84% of respondents said that they “strongly agreed”, with additional 21.34% of respondents indicating that they “somewhat agreed”. Only 8.08% of participants “somewhat disagreed” or “strongly disagreed” with the statement.

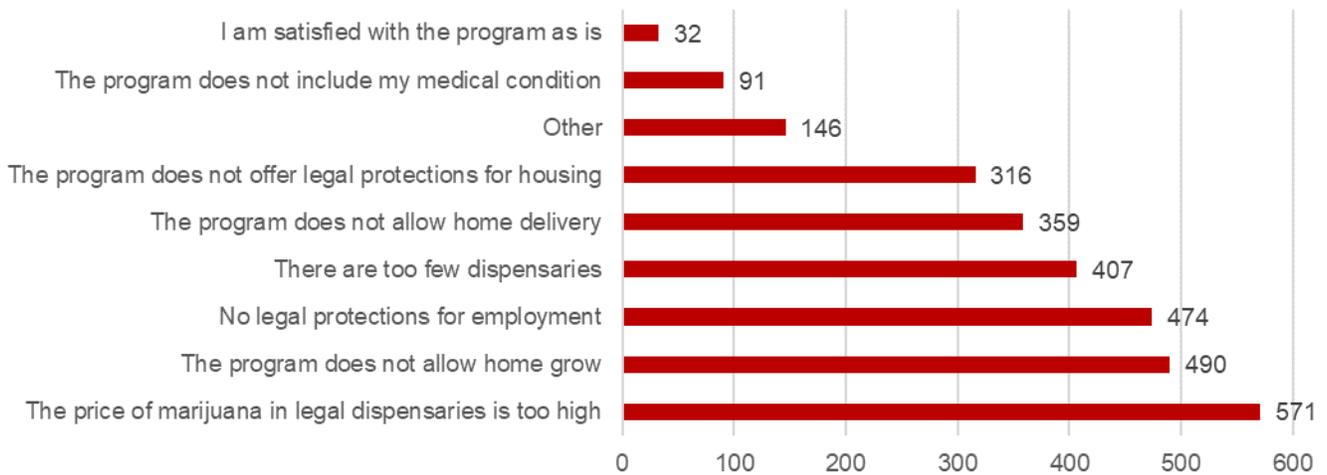
Figure 19. Level of trust in safety of dispensary products



A. Factors Driving Dissatisfaction

The 2021 survey included questions aimed at discovering what factors drove respondents’ dissatisfaction with OMMCP. All respondents were able to select from a menu of options as well as write in additional comments (people who were satisfied were able to select “I am satisfied with the program as is”). 736 people responded to this question.

Figure 20. Factors driving dissatisfaction with OMMCP



As shown in Figure 20 above, the three most frequently cited reasons for dissatisfaction were the high price of marijuana in legal dispensaries (77.6% of respondents), the lack of home grow allowance (66.6%), and lack of legal protections for employment (64.4%). In addition to the factors listed above, respondents had a chance to write in additional issues of concern. Of those, the most commonly cited reason for dissatisfaction was patient supply restrictions which ranged from the amount of allowable product being insufficient, to the confusing nature of calculating one’s allowable purchase limits based on Tiers, to unhappiness with how different purchases count against their 45-day supply limit.

“Depending on the patient, the 45 day supply isn’t enough to actually make it 45 days.”

“I don’t like how I have to use a whole day for one pack of 25mg brownies when the daily allotment is 110mg.”

“The 45-day system is pointless, arbitrary, confusing, and anxiety inducing.”

“Patients have no easy way to return bad products and get money and day units replaced.”

Over all three years of the survey, the cost of medical marijuana in Ohio dispensaries continues to be identified as one of the main drivers of people’s dissatisfaction. When compared to prices for medical marijuana flower in other neighboring states, the picture is mixed with Michigan offering medical marijuana plant material at considerably lower prices, while the state of Pennsylvania offering marijuana plant material at significantly higher prices. Table 5 below traces the pricing of medical marijuana flower in Ohio, Michigan and Pennsylvania to illustrate pricing differences in the first six months of 2021. While Ohio’s prices are significantly lower than Pennsylvania’s, on average Ohio dispensaries sold medical plant material at \$3.28 more per gram than dispensaries in Michigan during this time period.

Table 5. Medical marijuana plant product pricing in Pennsylvania, Ohio and Michigan

Month	Pennsylvania ³⁰	Ohio ³¹	Michigan ³²	Price differential between Ohio and Michigan
June, 2021	<i>Not available</i>	\$ 11.03	\$ 7.40	\$3.63
May, 2021	<i>Not available</i>	\$ 11.15	\$ 6.97	\$4.18
April, 2021	\$ 14.48	\$ 11.01	\$ 7.19	\$3.82
March, 2021	<i>Not available</i>	\$ 10.98	\$ 7.67	\$3.31
February, 2021	<i>Not available</i>	\$ 10.87	\$ 8.09	\$2.78
January, 2021	\$ 14.90	\$ 10.89	\$ 8.89	\$2.00

It is difficult to estimate the impact of such price differential on an individual patient, but according to the Ohio Department of Commerce, an Ohio patient purchases on average 23.36g of marijuana plant material a month or 280.32g a year³³. Applying the average price differential, this results in the average Ohio patient paying approximately \$920 more a year than a patient in Michigan and approximately \$1037 less than a patient in Pennsylvania. But should a patient need to purchase their full annual allotment of Tier I³⁴ marijuana plant product per OMMCP rules (90-day supply of 226.40 grams multiplied by four for a total of 905.6 grams per year)³⁵, such patient would pay close to \$3,000 per year more than a patient in the state of Michigan if we apply the average price differential of \$3.28.³⁶

It should be noted that the price of plant product in Ohio dispensaries has come down since the beginning of 2019, when it

³⁰ Medical Marijuana Advisory Board Meeting, Tuesday, August 17, 2021, Medical Marijuana Program Update, <https://www.health.pa.gov/topics/Documents/Programs/Medical%20Marijuana/MMAB%20Presentation%20-%20August%2017,%202021.pdf>

³¹ Data was provided by the Ohio Department of Commerce on July 26, 2021. Monthly average price per gram of plant material was calculated by first calculating the average price per gram of plant material on weekly basis (dividing the total weekly sales of plants material by the number of grams of plant material sold), and then calculating average price per gram of all weeks in each month. Because of the weekly reporting structure, some monthly figures include data from a few days of the previous month.

³² Michigan Marijuana Regulatory Agency, monthly reports - <https://www.michigan.gov/mra/0,9306,7-386-93032-497635--,00.html>. We chose to include only the price of cannabis flower, rather than also including price of shake and trim, which is substantially lower.

³³ Information on the average amount of medical marijuana plant material purchased by an Ohio patient was provided by the Ohio Department of Commerce on September 15, 2021.

³⁴ Tier I refers to plants with 23% or less of THC content.

³⁵ State of Ohio Board of Pharmacy, “Medical Marijuana Plant materials Days – Supply Dispensation Reference Standard,” <https://www.medicalmarijuana.ohio.gov/Documents/LicenseeResources/Processor%20Licensee%20Resources/Product%20ID%20Assignment/Plant%20Material%20Day%20Supply%20Reference.pdf>

³⁶ The calculation is based on monthly averages of all flower material rather than the price of a specific plant product. Thus, the price differential for each individual patient might be different based on which type of plant he or she purchases.

started at around \$17.00 per gram. Yet, the price has not fluctuated much since January of 2020, hovering mostly between \$10 and \$11 per gram despite an increase in the number of cultivators and dispensaries (see Appendix I for all pricing information). The price of manufactured products (tinctures, oils, vapes, etc.) has seen a bigger decrease in pricing, with the first six months of 2021 registering an average price of a manufactured unit at \$43.07 compared to \$48.36 in the first six months of 2020. Unfortunately, comparing manufactured unit pricing to other states is more difficult as manufactured unit pricing in Ohio is reported in the aggregate.

It is also difficult to ascertain what drives marijuana pricing in different states – the state of Michigan has a robust adult-use market in addition to its medical marijuana program, allows home grow and does not limit the number of cultivator licenses. Pennsylvania, similarly to Ohio, does not allow home grow and limits the number of cannabis cultivators to 25. All three states have relatively high licensing fees for cultivators.³⁷ The state of Ohio imposes a state sales tax of 5.75% plus a local tax that can vary from 0.5% to 2.25%. Pennsylvania does not charge a sales tax on medical marijuana; however, cultivators are subjected to a 5% excise tax on their sales to processors. Patients in the state of Michigan are subjected to a 6% state sales tax.³⁸ A more detailed analysis of operating costs and other factors driving medical marijuana pricing is needed to determine what can be done to lower the price of medical marijuana.

In addition to the high price of marijuana products, medical marijuana is not covered by any health insurance, thus patients are responsible for the entirety of the costs. The said cost also includes an annual fee of \$50 for patient OMMCP registration card, an annual physician recommendation renewal fee, as well as the initial cost of a visit to a physician who has a license to recommend medical marijuana. These costs vary based on the provider, but generally run around \$100 for a renewal fee and anywhere from \$150-\$250 for the initial visit. None of these costs are covered by health insurance.

B. COVID-19 Induced Changes and Their Effect on Patient Satisfaction

The COVID-19 pandemic has created many challenges but it has also been seen as an impetus for innovation, both for businesses and government entities. As wide-reaching restrictions began to be imposed by governments around the country, medical marijuana programs nationwide had to rethink their existing policies and regulations to facilitate safe access to medical marijuana while following public health mandates. In the state of Ohio, there were several patient-facing changes stemming from the COVID-19 pandemic. OMMCP made these adjustments: patients were allowed to order their medical marijuana online, patients were allowed curbside pickup from medical dispensaries, physicians were allowed to meet with their patients virtually for the purpose of obtaining a recommendation for medical marijuana and annual renewal of their recommendation, and patients were able to designate as many as three caregivers who could register under an amended process³⁹. Additionally, in April 2020, in an effort to make supply and purchase calculations easier on patients and caregivers, the State of Ohio Board of Pharmacy issued new guidance that split the 90-day supply period into two 45-day supply periods.⁴⁰ While not technically related to the COVID-19 pandemic, the timing of this change coincided with the aforementioned changes and thus was included in our survey.

As is shown in Figure 21 below, three of the instituted changes have had a significant, positive impact on patients' satisfaction with OMMCP: ability to utilize telemedicine, ability to order one's supply of medical marijuana online, and curbside pickup from dispensaries. Seventy-seven percent of respondents reported that the ability to utilize telemedicine has increased their satisfaction with OMMCP, while 66% and 65% reported increased satisfaction due to curbside pickup and online ordering respectively. In addition to the officially instituted changes, respondents mentioned the need for home delivery services, especially during the COVID-19 pandemic.

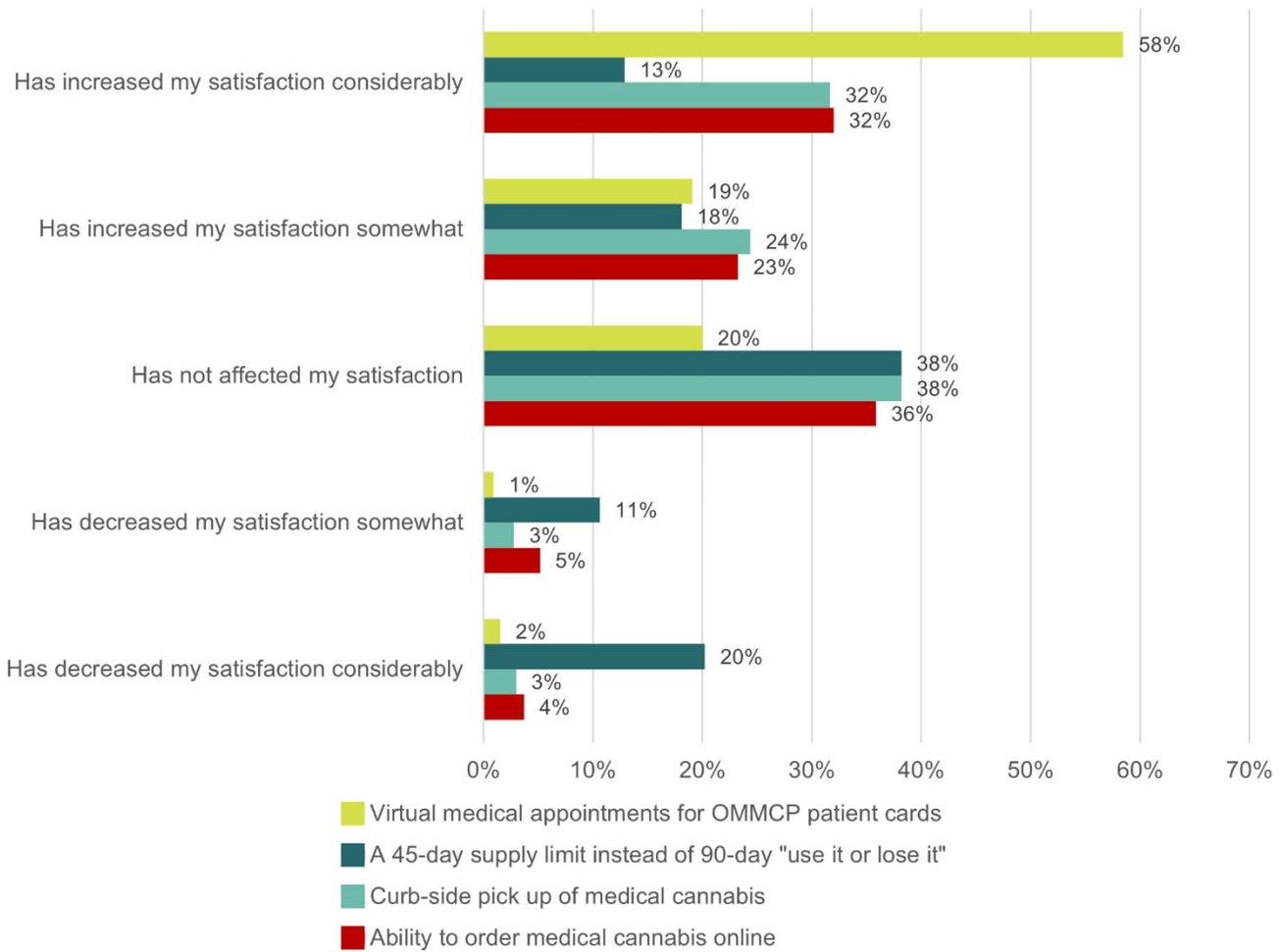
³⁷ Noelle Skodzinski, "Your State-by-State Guide to Cannabis Cultivation Business Application and Licensing Fees", Cannabis Business Times, February 12, 2021. <https://www.cannabisbusinesstimes.com/article/state-state-guide-marijuana-application-licensing-fees/>

³⁸ Max Savage Levenson, Marijuana tax rates: a state-by-state guide, March 15, 2021, <https://www.leafly.com/news/industry/marijuana-tax-rates-by-state>

³⁹ Our survey did not collect information on the impact of being able to designate additional caretakers.

⁴⁰ State of Ohio Board of Pharmacy, *90-Day Supply Resolution and Guidance*, April 15, 2020. <https://www.medicalmarijuana.ohio.gov/Documents/90DaySupply/Documents/90-Day%20Supply%20Resolution%20and%20Guidance.pdf>

Figure 21. COVID-19 Changes and their impact on patient satisfaction



VIII. CONCLUSION AND CONSIDERATIONS FOR ADJUSTMENT

Ohio’s medical marijuana program has grown substantially over the last 12 months and patient dissatisfaction has continued to diminish when compared to survey results from previous years. Nevertheless, more than 50% of respondents continued to express dissatisfaction with the program, mainly driven by the high price of products in licensed dispensaries, lack of home grow provisions, and lack of employment protections for patients. Additionally, patients expressed dissatisfaction with the restrictions on patient supply, the difficulty and cost of obtaining a patient registration card, and the fact that certain medical conditions, such as anxiety and depression, were not recognized as qualifying conditions. Based on the survey results, the changes to the following elements could have a positive impact on patients’ satisfaction with OMMCP by making medical marijuana more accessible and participation in the program less expensive for patients.

Home grow

By allowing patients and caregivers to grow a small number of marijuana plants, Ohio’s medical marijuana program could decrease the financial burdens on patients and also allow patients access to specific strands of cannabis that they might otherwise not be able to find in dispensaries. Though home grow provisions are championed by many medical marijuana advocates, experiences in other states reveal a home grow provision carries with it some risks such as the possibility of

promulgation of illicit products beyond patient community, unclear mandates for law enforcement agencies and other enforcement challenges if home grow provisions are not adopted thoughtfully. Typically policies limiting the number of plants to 6 or less and limiting the number of allowed plants per residence can mitigate some of these risks.⁴¹ In addition, existing marijuana businesses are typically opposed to home grow authority.

Assessment of licensing fees

Licensing fees help support the administrative structure of OMMCP, but Ohio's licensing fees tend to be some of the highest in the country.⁴² Whether such high fees are needed for the effective functioning of OMMCP is difficult to assess given limited public information about the administrative costs of OMMCP. Still, the high licensing fees in Ohio, along with the regulatory burdens on medical marijuana businesses, likely contribute to the relatively high cost of marijuana products in the state.

Patient fees and renewal considerations

From program inception in December 2018 to August 24, 2021, the State of Ohio Board of Pharmacy has collected \$12,509,000 in patient and caregiver fees. The annual patient fee is \$50, and the caregiver fee is \$25. Patients who qualify for indigent or veteran status can have their and their caregiver fees reduced by 50%.⁴³ However, the qualification criteria for indigent status are narrow and do not include qualifications based on low income alone. In addition to the \$50 annual fee, patients are responsible for the annual cost of renewed recommendation paid to a limited number of certified physicians. To some patients, these fees and expenses represent a significant and ongoing cost. Reconsideration of the frequency with which patients must prove ongoing medical issues (especially for chronic conditions such as HIV/AIDS, Crohn disease and others) as well as the costs and frequency of registration may be warranted.

Patient-centered reconsideration of current purchase limitations

OMMCP regulations put strict limits on how much of medical marijuana product a patient can purchase in any given 90-period, which appears to be a significant source of confusion and dissatisfaction. The program differentiates between Tier I and Tier II products based on their THC content (Tier I products contain 23% of THC or less, Tier II products exceed 23% of THC but do not exceed 35%). A patient is allowed to purchase either 226.4g of Tier I product or 149.99g of Tier II product in a 90-day period, or 905.6g of Tier I or 599.96g of Tier II product annually. While limiting the amount of marijuana a patient can purchase for a given period of time is common, Ohio limits appear stricter than those of other states and do not allow for consideration of the individual needs of a patient based on their medical condition (with the exception of patients diagnosed with a terminal illness who are able to purchase greater quantities).⁴⁴ It is also worth noting that many medical marijuana states that do have purchase limits on medical marijuana also permit some form of home grow which further enhances patients' access. A patient-centered reconsideration of current purchase limitations could positively impact patients' experience with OMMCP.

Limited number of cultivator licenses

In April 2021 the State of Ohio Board of Pharmacy voted to allow 73 additional medical marijuana dispensaries, which was followed in September 2021 by the Ohio Department of Commerce's announcement that existing cultivators that have complied with existing rules and regulations will be able to apply to expand their grow space⁴⁵. As of September 1, 2021, 15 of

⁴¹ Jana Hrdinová and Dexter Ridgway, "From Medical to Recreational Marijuana: Lessons for States in Transition", Drug Enforcement and Policy Center, The Ohio State University, November 2020, https://moritzlaw.osu.edu/depc/wp-content/uploads/sites/115/2020/10/2020-Transition-Report_FINAL.pdf

⁴² Noelle Skodzinski, "Your State-by-State Guide to Cannabis Cultivation Business Application and Licensing Fees", Cannabis Business Times, February 12, 2021. <https://www.cannabisbusinesstimes.com/article/state-state-guide-marijuana-application-licensing-fees/>

⁴³ Quick Reference Guide: Registering with Indigent/Veteran Status, State of Ohio Board of Pharmacy, <https://medicalmarijuana.ohio.gov/Documents/PatientsCaregivers/Quick%20Reference%20Guide%20-%20Registering%20With%20Indigent%20Or%20Veteran%20Status.pdf>

⁴⁴ Joey Wells, November 14, 2017, "How much weed can I buy", Leafbuyer, <https://www.leafbuyer.com/blog/how-much-weed-can-i-buy/>

⁴⁵ Jackie Borchart, "Ohio to allow medical marijuana growers to expand to meet demand, prepare for more dispensaries", The Columbus Dispatch, September 15, 2021, <https://www.dispatch.com/story/news/2021/09/15/ohio-allow-medical-marijuana-growers->

20 Level I provisional licensees (up to 25,000 sq ft of grow space) received a certificate to operate and 12 out of 14 Level II provisional licensees (up to 3,000 sq ft of grow space) received their certificate. Under the newly announced expansion, cultivators who are adhering to all rules and regulations can request an expansion of their grow area to up to three times of their original size.⁴⁶ While many factors influence the price of medical marijuana, additional grow space as well as additional growers could reduce product cost (although grower operational costs may be dictating pricing structure). Further examination of the number and operational costs of medical marijuana businesses is needed to assess which factors drive medical marijuana prices in Ohio.

Home delivery

As mentioned above, Ohio instituted a number of regulatory changes for medical marijuana patients and businesses, which had a positive impact on patients' satisfaction with OMMCP. But home delivery option was not one of the accepted changes even though many other states have allowed home delivery during this time.⁴⁷ The lack of home delivery was ranked fifth by the survey respondents among factors driving their dissatisfaction.

Number of physicians with certificate to recommend

The number of physicians with a Certificate to Recommend in Ohio continues to stagnate. As is shown in Table 4, ranked by the number of physicians per 100,000 residents across states which approved medical marijuana programs within two years of Ohio, Ohio ranks near the bottom with only 5.54 physicians per 100,000 residents. In spring 2021, the State Medical Board of Ohio conducted a survey of physicians with a certificate to recommend as well as other physicians⁴⁸. It is not clear how many respondents had a valid Certificate to Recommend, but when asked what was preventing them from recommending medical marijuana, the two most often noted reasons were the need for additional education and prohibition by an employer likely motivated by the continued federal prohibition. Regardless of what drives the physicians' hesitancy, the low number of physicians impacts patient's ability to access a physician, which might result in higher patient fees and may be contributing to the creation of "marijuana doctors" whose relationship with a patient is limited to their need for medical marijuana. While the allowance of telemedicine might mitigate some of these issues temporarily, the state should explore ways to incentivize physicians' participation.

Employment protections

Most states with legal medical or recreational marijuana provide very limited protections of medical marijuana patients, with some, such as Ohio, providing no protections at all.⁴⁹ Employment protection for marijuana use is a complex issue, shaped partially by continued federal prohibition on marijuana as well as the challenge of detecting how and when past marijuana use may impair job performance. Adopting some of the employment protections for medical marijuana patients adopted in other states—such as prohibiting employers from discriminating against workers based simply on their status as a medical marijuana patient—would be a positive step forward for patients as well as the program as a whole.

Changes to some of the above detailed elements of Ohio's existing medical marijuana program would require action by the Ohio General Assembly. Yet, as long as Ohio dispensary prices remain high and access remains limited, patients will continue to utilize other sources whether it be legal dispensaries outside of Ohio or the illicit market. Arguably, that should be a cause of concern for any and all legislators interested in protecting the well-being of patients and broader public safety interests.

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⁴⁶ Ibid.

⁴⁷ Safe Access to Cannabis in Times of COVID-19, MPP, <https://www.mpp.org/issues/medical-marijuana/safe-access-to-cannabis-in-times-of-covid-19/>

⁴⁸ State Medical Board of Ohio, CTR Physician Annual Report 2021, August 2021.

https://med.ohio.gov/Portals/0/CTR%20Physician%20Survey%20Report%20Final%20%208_11_21.pdf

⁴⁹ Medical Marijuana Laws and Anti-Discrimination Provisions, MPP, <https://www.mpp.org/issues/medical-marijuana/medical-marijuana-laws-anti-discrimination-provisions/>

APPENDIX I – MEDICAL MARIJUANA SALES AND REVENUE

Table 1. Monthly sales of manufactured product units and plant material in Ohio

Week Ending	Manufac. Product Sold (units)	Plant Material Sold (grams)	Total Sales (Plant Material)	Total Sales (Manufac.)	Price per gram	Price per Unit (Manufact)	Cumulative Total (Sales)	Sales per Week
7-17-2021	87,120	368,089	\$3,942,667	\$3,708,790	\$10.71	\$42.57	\$478,826,011	\$7,651,457
7-10-2021	78,458	324,051	\$3,514,059	\$3,341,741	\$10.84	\$42.59	\$471,174,554	\$6,855,800
7-3-2021	91,657	406,861	\$4,536,645	\$3,888,340	\$11.15	\$42.42	\$464,318,754	\$8,424,985
6-26-2021	79,581	337,452	\$3,738,757	\$3,444,496	\$11.08	\$43.28	\$455,893,769	\$7,183,253
6-19-2021	82,001	357,364	\$3,924,539	\$3,550,381	\$10.98	\$43.30	\$448,710,516	\$7,474,920
6-12-2021	79,864	346,853	\$3,833,785	\$3,485,128	\$11.05	\$43.64	\$441,235,597	\$7,318,913
6-5-2021	77,415	340,579	\$3,745,838	\$3,349,237	\$11.00	\$43.26	\$433,916,684	\$7,095,075
5-29-2021	90,178	374,012	\$4,071,750	\$3,793,646	\$10.89	\$42.07	\$426,821,608	\$7,865,396
5-22-2021	78,626	327,870	\$3,661,139	\$3,380,596	\$11.17	\$43.00	\$418,956,212	\$7,041,735
5-15-2021	79,208	347,377	\$3,976,069	\$3,416,341	\$11.45	\$43.13	\$411,914,477	\$7,392,410
5-8-2021	81,108	334,248	\$3,710,335	\$3,511,296	\$11.10	\$43.29	\$404,522,068	\$7,221,631
5-1-2021	85,347	377,689	\$4,069,832	\$3,636,376	\$10.78	\$42.61	\$397,300,437	\$7,706,208
4-24-2021	79,221	333,174	\$3,570,164	\$3,250,760	\$10.72	\$41.03	\$389,594,230	\$6,820,924
4-17-2021	88,651	355,851	\$3,883,062	\$3,675,306	\$10.91	\$41.46	\$382,773,306	\$7,558,368
4-10-2021	79,222	327,998	\$3,733,584	\$3,447,115	\$11.38	\$43.51	\$375,214,938	\$7,180,699
4-3-2021	83,949	366,480	\$4,124,583	\$3,592,689	\$11.25	\$42.80	\$368,034,239	\$7,717,272
3-27-2021	79,739	319,088	\$3,529,484	\$3,453,731	\$11.06	\$43.31	\$360,316,967	\$6,983,215
3-20-2021	89,480	371,587	\$4,079,581	\$3,880,135	\$10.98	\$43.36	\$353,333,752	\$7,959,716
3-13-2021	72,046	317,587	\$3,495,067	\$3,117,887	\$11.01	\$43.28	\$345,374,036	\$6,612,954
3-6-2021	75,517	338,208	\$3,673,950	\$3,218,494	\$10.86	\$42.62	\$338,761,082	\$6,892,444
2-27-2021	61,984	286,591	\$3,109,063	\$2,640,539	\$10.85	\$42.60	\$331,868,639	\$5,749,602
2-20-2021	60,350	286,942	\$3,088,794	\$2,626,354	\$10.76	\$43.52	\$326,119,037	\$5,715,148
2-13-2021	65,957	309,560	\$3,342,286	\$2,853,701	\$10.80	\$43.27	\$320,403,889	\$6,195,987
2-6-2021	66,314	318,344	\$3,520,622	\$2,887,704	\$11.06	\$43.55	\$314,207,902	\$6,408,326
1-30-2021	64,370	303,254	\$3,380,089	\$2,795,983	\$11.15	\$43.44	\$307,799,576	\$6,176,072

1-23-2021	61,565	287,205	\$3,139,900	\$2,722,900	\$10.93	\$44.23	\$301,623,505	\$5,862,800
1-16-2021	62,997	289,070	\$3,180,885	\$2,804,668	\$11.00	\$44.52	\$295,760,705	\$5,985,553
1-9-2021	67,872	307,128	\$3,294,121	\$2,941,134	\$10.73	\$43.33	\$289,775,152	\$6,235,255
1-2-2021	62,604	336,573	\$3,576,708	\$2,678,816	\$10.63	\$42.79	\$283,539,897	\$6,255,524
12-26-2020	60,856	274,216	\$2,931,093	\$2,562,460	\$10.69	\$42.11	\$277,284,373	\$5,493,553
12-19-2020	63,846	292,783	\$3,115,219	\$2,709,705	\$10.64	\$42.44	\$271,790,820	\$5,824,924
12-12-2020	56,441	280,124	\$2,971,558	\$2,449,309	\$10.61	\$43.40	\$265,965,896	\$5,420,867
12-5-2020	53,656	286,407	\$2,979,211	\$2,337,696	\$10.40	\$43.57	\$260,545,029	\$5,316,907
11-28-2020	58,912	315,666	\$3,168,979	\$2,502,832	\$10.04	\$42.48	\$255,228,122	\$5,671,811
11-21-2020	55,893	282,594	\$2,954,884	\$2,495,791	\$10.46	\$44.65	\$249,556,311	\$5,450,675
11-14-2020	54,608	265,428	\$2,785,931	\$2,365,494	\$10.50	\$43.32	\$244,105,636	\$5,151,425
11-7-2020	53,617	275,796	\$2,938,275	\$2,349,158	\$10.65	\$43.81	\$238,954,212	\$5,287,434
10-31-2020	59,467	312,489	\$3,252,624	\$2,519,027	\$10.41	\$42.36	\$233,666,778	\$5,771,651
10-24-2020	55,522	273,531	\$2,882,006	\$2,417,397	\$10.54	\$43.54	\$227,895,127	\$5,299,403
10-17-2020	54,781	266,509	\$2,798,876	\$2,392,848	\$10.50	\$43.68	\$222,595,724	\$5,191,724
10-10-2020	52,177	262,837	\$2,799,903	\$2,296,007	\$10.65	\$44.00	\$217,403,999	\$5,095,911
10-3-2020	52,629	297,033	\$3,112,606	\$2,340,456	\$10.48	\$44.47	\$212,308,089	\$5,453,062
9-26-2020	50,948	287,728	\$3,054,310	\$2,264,604	\$10.62	\$44.45	\$206,855,027	\$5,318,914
9-19-2020	52,111	296,352	\$3,023,334	\$2,313,931	\$10.20	\$44.40	\$201,536,113	\$5,337,265
9-12-2020	45,150	256,311	\$2,619,333	\$2,059,384	\$10.22	\$45.61	\$196,198,849	\$4,678,717
9-5-2020	53,324	303,395	\$3,172,385	\$2,416,179	\$10.46	\$45.31	\$191,520,132	\$5,588,564
8-29-2020	46,798	259,630	\$2,821,990	\$2,129,832	\$10.87	\$45.51	\$185,931,568	\$4,951,822
8-22-2020	46,313	245,403	\$2,700,705	\$2,152,841	\$11.01	\$46.48	\$180,979,746	\$4,853,546
8-15-2020	46,242	257,995	\$2,759,917	\$2,152,791	\$10.70	\$46.55	\$176,126,200	\$4,912,709
8-8-2020	47,184	260,556	\$2,832,639	\$2,183,082	\$10.87	\$46.27	\$171,213,491	\$5,015,721
8-1-2020	45,488	261,138	\$2,748,383	\$2,156,084	\$10.52	\$47.40	\$166,197,771	\$4,904,467
7-25-2020	42,998	282,473	\$2,721,814	\$2,041,905	\$9.64	\$47.49	\$161,293,303	\$4,763,720
7-18-2020	41,395	263,654	\$2,639,145	\$1,968,694	\$10.01	\$47.56	\$156,529,584	\$4,607,840
7-11-2020	42,173	245,099	\$2,446,537	\$1,996,810	\$9.98	\$47.35	\$151,921,744	\$4,443,347
7-4-2020	45,170	272,857	\$2,654,835	\$2,111,221	\$9.73	\$46.74	\$147,478,397	\$4,766,055
6-27-2020	39,033	239,891	\$2,488,519	\$1,923,555	\$10.37	\$49.28	\$142,712,342	\$4,412,074
6-20-2020	38,914	232,433	\$2,417,721	\$1,898,486	\$10.40	\$48.79	\$138,300,267	\$4,316,207
6-13-2020	37,705	224,470	\$2,306,847	\$1,865,049	\$10.28	\$49.46	\$133,984,060	\$4,171,896
6-6-2020	36,118	234,758	\$2,440,789	\$1,766,585	\$10.40	\$48.91	\$129,812,165	\$4,207,374
5-30-2020	35,971	212,277	\$2,182,913	\$1,696,045	\$10.28	\$47.15	\$125,604,791	\$3,878,958
5-23-2020	39,842	229,307	\$2,314,860	\$1,910,949	\$10.10	\$47.96	\$121,725,833	\$4,225,808

5-16-2020	34,397	206,525	\$2,144,635	\$1,715,795	\$10.38	\$49.88	\$117,500,024	\$3,860,430
5-9-2020	35,546	221,499	\$2,272,833	\$1,754,373	\$10.26	\$49.36	\$113,639,595	\$4,027,207
5-2-2020	34,559	232,226	\$2,324,685	\$1,734,576	\$10.01	\$50.19	\$109,612,388	\$4,059,261
4-25-2020	35,557	225,364	\$2,192,869	\$1,675,277	\$9.73	\$47.12	\$105,553,127	\$3,868,146
4-18-2020	35,685	230,938	\$2,319,408	\$1,722,437	\$10.04	\$48.27	\$101,684,981	\$4,041,845
4-11-2020	27,389	167,464	\$1,707,794	\$1,316,298	\$10.20	\$48.06	\$97,643,137	\$3,024,092
4-4-2020	28,979	189,058	\$1,914,029	\$1,400,483	\$10.12	\$48.33	\$94,619,044	\$3,314,511
3-28-2020	24,283	149,999	\$1,589,906	\$1,172,306	\$10.60	\$48.28	\$91,304,533	\$2,762,212
3-21-2020	33,478	204,807	\$2,117,267	\$1,651,521	\$10.34	\$49.33	\$88,542,321	\$3,768,788
3-14-2020	30,519	177,692	\$1,827,615	\$1,481,034	\$10.29	\$48.53	\$84,773,533	\$3,308,649
3-7-2020	26,849	159,878	\$1,675,285	\$1,309,269	\$10.48	\$48.76	\$81,464,884	\$2,984,553
2-29-2020	27,913	167,496	\$1,738,307	\$1,320,530	\$10.38	\$47.31	\$78,480,331	\$3,058,836
2-22-2020	23,236	132,665	\$1,410,373	\$1,130,474	\$10.63	\$48.65	\$75,421,495	\$2,540,846
2-15-2020	24,647	140,368	\$1,458,376	\$1,155,593	\$10.39	\$46.89	\$72,880,648	\$2,613,969
2-8-2020	22,127	138,415	\$1,454,912	\$1,053,060	\$10.51	\$47.59	\$70,266,679	\$2,507,972
2-1-2020	21,655	138,325	\$1,474,107	\$1,035,525	\$10.66	\$47.82	\$67,758,707	\$2,509,632
1-25-2020	20,117	126,801	\$1,372,768	\$968,248	\$10.83	\$48.13	\$65,249,074	\$2,341,016
1-18-2020	21,540	132,158	\$1,416,784	\$1,019,460	\$10.72	\$47.33	\$62,908,058	\$2,436,244
1-11-2020	18,868	128,640	\$1,431,336	\$911,312	\$11.13	\$48.30	\$60,471,814	\$2,342,648
1-4-2020	18,472	135,521	\$1,441,742	\$875,537	\$10.64	\$47.40	\$58,129,166	\$2,317,279
12-28-019	17,925	116,090	\$1,288,635	\$854,817	\$11.10	\$47.69	\$55,811,888	\$2,143,452
12-21-2019	19,223	125,428	\$1,436,204	\$978,854	\$11.45	\$50.92	\$53,668,436	\$2,415,058
12-14-2019	16,806	115,491	\$1,323,443	\$868,909	\$11.46	\$51.70	\$51,253,378	\$2,192,351
12-7-2019	15,694	95,997	\$1,086,626	\$818,831	\$11.32	\$52.17	\$49,061,027	\$1,905,457
11-30-2019	17,784	131,096	\$1,485,775	\$872,028	\$11.33	\$49.03	\$47,155,570	\$2,357,803
11-23-2019	15,232	112,316	\$1,333,796	\$793,583	\$11.88	\$52.10	\$44,797,767	\$2,127,378
11-16-2019	13,789	106,026	\$1,247,749	\$707,038	\$11.77	\$51.28	\$42,670,389	\$1,954,787
11-9-2019	13,992	108,306	\$1,282,703	\$719,508	\$11.84	\$51.42	\$40,715,602	\$2,002,212
11-2-2019	13,189	118,902	\$1,391,443	\$704,155	\$11.70	\$53.39	\$38,713,390	\$2,095,598
10-26-2019	11,788	97,995	\$1,171,233	\$645,313	\$11.95	\$54.74	\$36,617,792	\$1,816,545
10-19-2019	11,779	94,261	\$1,175,604	\$644,815	\$12.47	\$54.74	\$34,801,247	\$1,820,419
10-12-2019	11,528	92,668	\$1,145,807	\$622,667	\$12.36	\$54.01	\$32,980,827	\$1,768,475
10-5-2019	11,441	109,728	\$1,291,349	\$615,928	\$11.77	\$53.84	\$31,212,353	\$1,907,277
9-28-2019	9,810	97,825	\$1,147,790	\$552,112	\$11.73	\$56.28	\$29,305,076	\$1,699,902
9-21-2019	8,763	87,622	\$1,079,304	\$512,148	\$12.32	\$58.44	\$27,605,174	\$1,591,452
9-14-2019	8,779	89,683	\$1,076,398	\$514,709	\$12.00	\$58.63	\$26,013,722	\$1,591,107

9-7-2019	7,355	76,689	\$917,221	\$441,962	\$11.96	\$60.09	\$24,422,615	\$1,359,183
8-31-2019	7,654	86,813	\$1,099,594	\$479,849	\$12.67	\$62.69	\$23,063,432	\$1,579,444
8-24-2019	6,777	69,731	\$932,431	\$439,348	\$13.37	\$64.83	\$21,483,988	\$1,371,779
8-17-2019	6,308	68,186	\$897,529	\$413,157	\$13.16	\$65.50	\$20,112,209	\$1,310,686
8-10-2019	5,071	68,248	\$883,828	\$357,705	\$12.95	\$70.54	\$18,801,523	\$1,241,533
8-3-2019	5,522	70,906	\$943,209	\$388,204	\$13.30	\$70.30	\$17,559,990	\$1,331,413
7-27-2019	4,337	60,670	\$832,429	\$292,371	\$13.72	\$67.41	\$16,228,577	\$1,124,800
7-20-2019	3,721	55,525	\$764,578	\$267,087	\$13.77	\$71.78	\$15,103,777	\$1,031,665
7-13-2019	3,621	53,960	\$751,038	\$263,090	\$13.92	\$72.66	\$14,072,112	\$1,014,128
7-6-2019	3,593	56,193	\$799,377	\$259,386	\$14.23	\$72.19	\$13,057,984	\$1,058,763
7-29-2019	3,463	49,737	\$720,671	\$255,703	\$14.49	\$73.84	\$11,999,221	\$976,375
6-22-2019	3,074	47,095	\$689,858	\$231,035	\$14.65	\$75.16	\$11,022,847	\$920,893
6-15-2019	2,642	45,452	\$686,491	\$226,522	\$15.10	\$85.74	\$10,101,953	\$913,014
6-8-2019	2,548	44,063	\$688,430	\$226,107	\$15.62	\$88.74	\$9,188,940	\$914,537
6-1-2019	1,643	40,768	\$634,901	\$148,498	\$15.57	\$90.38	\$8,274,403	\$783,399
5-25-2019	1,939	41,383	\$640,066	\$158,011	\$15.47	\$81.49	\$7,491,003	\$798,077
5-18-2019	1,565	32,599	\$538,912	\$158,011	\$16.53	\$100.97	\$6,692,926	\$696,923
5-11-2019	997	31,515	\$517,100	\$0	\$16.41	\$0.00	\$5,996,004	\$517,100
5-4-2019	1,073	34,967	\$542,337	\$0	\$15.51	\$0.00	\$5,478,903	\$542,337
4-27-2019	1,014	33,032	\$502,714	\$0	\$15.22	\$0.00	\$4,936,567	\$502,714
4-20-2019	746	36,034	\$543,819	\$0	\$15.09	\$0.00	\$4,433,852	\$543,819
4-13-2019	503	29,118	\$462,628	\$0	\$15.89	\$0.00	\$3,890,033	\$462,628
4-6-2019	281	31,778	\$508,752	\$0	\$16.01	\$0.00	\$3,427,406	\$508,752
3-30-2019	0	25,903	\$432,807	\$0	\$16.71	\$0.00	\$2,918,654	\$432,807
3-23-2019	0	17,959	\$300,136	\$0	\$16.71	\$0.00	\$2,485,846	\$300,136
3-16-2019	0	19,524	\$322,268	\$0	\$16.51	\$0.00	\$2,185,711	\$322,268
3-9-2019	0	19,776	\$332,885	\$0	\$16.83	\$0.00	\$1,863,443	\$332,885
3-2-2019	0	18,970	\$318,470	\$0	\$16.79	\$0.00	\$1,530,557	\$318,470
2-23-2019	0	14,775	\$246,379	\$0	\$16.67	\$0.00	\$1,212,088	\$246,379
2-16-2019	0	12,783	\$216,763	\$0	\$16.96	\$0.00	\$965,709	\$216,763
2-9-2019	0	13,714	\$233,294	\$0	\$17.01	\$0.00	\$748,946	\$233,294
2-2-2019	0	9,964	\$170,961	\$0	\$17.16	\$0.00	\$515,652	\$170,961
1-26-2019	0	9,319	\$161,006	\$0	\$17.28	\$0.00	\$344,692	\$161,006
1-19-2019	0	12,145	\$183,685	\$0	\$0.00	\$0.00	\$183,685	\$183,685

Table 2. Fiscal Year 2019—running from start of commercial sales through June 2019

Collection Month	State Sales Tax Collected	Permissive Sales Tax Collected
Feb FY 2019	Redacted due to disclosure	Redacted due to disclosure
Mar FY 2019	Redacted due to disclosure	Redacted due to disclosure
Apr FY 2019	Redacted due to disclosure	Redacted due to disclosure
May FY 2019	Redacted due to disclosure	Redacted due to disclosure
Jun FY 2019	\$179,813	\$45,882
TOTAL	Redacted due to disclosure	Redacted due to disclosure

Table 3. Fiscal Year 2020—running from July 2019 through June 2020

Collection Month	State Sales Tax Collected	Permissive Sales Tax Collected
Jul FY 2020	\$210,203	\$53,706
Aug FY 2020	\$270,719	\$66,189
Sep FY 2020	\$399,247	\$97,598
Oct FY 2020	\$355,879	\$91,660
Nov FY 2020	\$450,783	\$113,734
Dec FY 2020	\$444,673	\$112,899
Jan FY 2020	\$437,832	\$127,434
Feb FY 2020	\$703,082	\$170,540
Mar FY 2020	\$699,448	\$165,683
Apr FY 2020	\$876,667	\$218,243
May FY 2020	\$1,011,115	\$225,075
Jun FY 2020	\$820,923	\$194,578
TOTAL	\$6,680,571	\$1,637,339

Table 4. Fiscal Year 2021—running from July 2020 through June 2021

Collection Month	State Sales Tax Collected	Permissive Sales Tax Collected
Jul FY 2021	\$1,229,290	\$335,577
Aug FY 2021	\$1,217,872	\$298,727
Sep FY 2021	\$1,243,255	\$308,475
Oct FY 2021	\$1,292,832	\$320,712
Nov FY 2021	\$1,357,641	\$356,279
Dec FY 2021	\$1,244,418	\$326,793

Jan FY 2021	\$1,653,998	\$421,234
Feb FY 2021	\$1,440,142	\$391,857
Mar FY 2021	\$1,456,443	\$382,873
Apr FY 2021	Not available at time of publishing	Not available at time of publishing
May FY 2021	Not available at time of publishing	Not available at time of publishing
Jun FY 2021	Not available at time of publishing	Not available at time of publishing
TOTAL Year to Date	\$12,135,890	\$3,142,527

Table 5. State and local government revenue streams

Revenue Stream	Revenue total
State sales tax (as of March 31, 2021)	\$18,996,275
Local sales tax (as of March 31, 2021)	\$4,825,748
Patient and caregiver fees (as of August 24, 2021)	\$12,500,000
Medical marijuana business application and licensing fees (as of September 3, 2021)	\$28,400,000

APPENDIX II – PATIENTS, CAREGIVERS, AND PHYSICIANS

Table 1. OMMCP medical marijuana patients, caregivers, and physicians

	Feb-19	Apr-19	Jun-19	Dec-19	Mar-20	Jul-20	Nov-20	Mar-21	Jun-21	Aug-21	Sep-21
Caregivers	472	1,489	3,299	7,645	9,153	13,140	15,854	19,956	22,784	24,261	24,261
Active Certificates to Recommend	374	469	512	590	613	655	666	681	666	654	651
Registered patients	12,873	24,556	35,162	73,967	84,023	116,497	140,409	176,387	207,105	202,247	202,666
Patient recommendations	17,077	28,275	42,372	74,768	94,771	147,245	181,566	244,163	296,488	296,973	331,273
Unique patients who purchased marijuana	Not available	Not available	Not available	Not available	60,260	91,330	115,155	155,961	166,966	173,228	183,009
Patients with active recommendation and active registration	Not available	107,134	125,398								

APPENDIX III – RESPONDENT DEMOGRAPHICS AND DISTANCE TO DISPENSARY

Table 1. Respondent gender

Gender	Count	Percentage
Male	703	53.3%
Female	580	44.0%
Other/prefer not to say	36	2.7%

Table 2. Respondent race

Race	Count	Percentage
White/Caucasian	1117	88.2%
Other/prefer not to say	85	6.7%
Black/African American	46	3.6%
Latino/Hispanic	13	1.0%
Asian/Pacific Islander	6	0.5%

Table 3. Distance to closest dispensary

Distance Range	Count	Percentage
0-5 miles	212	21.35%
5-15 miles	389	39.17%
15-30 miles	250	25.18%
30-50 miles	101	10.17%
50-100 miles	20	2.01%
100+ miles	2	0.20%
I do not know	19	1.91%

APPENDIX IV – RESPONDENT PARTICIPATION IN OMMCP AND MEDICAL MARIJUANA USE

Table 1. Reported use of marijuana

Response	Count	Percentage
Yes, primarily for medical reasons	1168	90.19%
Yes, for recreational use only	55	4.25%
No	72	5.56%

Table 2. Length of medical marijuana use

Length	Count	Percentage
Less than a year	121	10.47%
Between 1-2 years	186	16.09%
Between 3-5 years	120	10.38%
More than 5 years	729	63.06%

Table 3. Frequency of medical marijuana use

Response	Count	Percentage
On a daily basis	883	79.12%
Several times a week	161	14.43%
Once a week	28	2.51%
Once a month or less	20	1.79%
I do not consume marijuana on a regular basis	24	2.15%

Table 4. Reasons for abstaining from using medical marijuana

Reason	Survey results 2021	Survey results 2020
Marijuana is too expensive	40%	43%
The process for getting a patient card is too expensive and difficult	30%	4%
I am worried my doctors reaction if they found out I was an mmj patient	18%	12%
Other	16%	25%

I am worried about losing my job	14%	22%
I do not know how to register for the medical marijuana program	13%	7%
I am worried about losing my firearm privileges	13%	0%
My medical condition is not included on the list of approved conditions	13%	0%
I have no interest in using marijuana	11%	2%
I am having a hard time finding a physician who can write a recommendation	8%	8%
I am worried about losing my housing	8%	6%
I am not familiar with the plant and am unsure how to use it	7%	0%
I am worried about other legal repercussions (custody, violating parole, etc.)	7%	8%
There are no legal dispensaries close to my home	5%	8%
I have moral objections to using marijuana	5%	1%

APPENDIX V – PURCHASING BEHAVIOR AND CONSIDERATIONS

Table 1. Purchase patterns of people with a qualifying medical condition

Response	Count	Percentage
I purchase all or majority of my marijuana at a legal Ohio dispensary	645	71.6%
I purchase marijuana equally from a legal Ohio dispensary and other sources	113	12.5%
I purchase majority of my marijuana at a legal dispensary out of state	56	6.2%
I purchase all or majority of my marijuana from sources other than a legal OH dispensary	87	9.7%

Table 2. Reasons for not purchasing medical marijuana from Ohio licensed dispensary

Response	Count	Percentage
Price of marijuana in dispensaries is too high	304	77.6%
Cost of obtaining and maintaining a patient card is too high	129	32.9%
It is easier for me to obtain it from other sources	119	30.4%
The legal amount that I can purchase does not fulfill my medical needs	117	29.8%
Cost/difficulty of obtaining doctor's recommendation	91	23.2%
Lack of delivery options	70	17.9%
Lack of diverse products in medical dispensaries	65	16.6%
The nearest dispensary is too far	58	14.8%
Other:	43	11.0%
I simply prefer to use other sources	17	4.3%

APPENDIX VI – SATISFACTION WITH OMMCP

Table 1. OMMCP satisfaction levels

Response	2019	2020	2021
Extremely satisfied	3.4%	3.9%	6.4%
Somewhat satisfied	13.3%	23.9%	30.4%
Neither satisfied nor dissatisfied	16.3%	10.6%	8.5%
Somewhat dissatisfied	19.0%	31.4%	29.7%
Extremely dissatisfied	48.0%	30.2%	25.4%

Table 2. Satisfaction by level of involvement with OMMCP

Response	All respondents	Respondents that were qualified patients	Respondents that were dispensary users
Extremely satisfied	6.4%	6.4%	8.7%
Somewhat satisfied	30.4%	30.3%	36.7%
Neither satisfied nor dissatisfied	8.5%	8.3%	6.3%
Somewhat dissatisfied	29.7%	30.2%	34.1%
Extremely dissatisfied	25.4%	24.8%	14.3%

Table 3. Level of trust in safety of dispensary products

Response	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	Do not know
I trust the safety of products available in legal dispensaries	3.77%	4.31%	7.55%	21.43%	59.84%	3.10%

Table 4. Factors driving dissatisfaction with OMMCP

Response	Count	Percentage
The price of marijuana in legal dispensaries is too high	571	77.6%
The program does not allow home grow	490	66.6%
No legal protections for employment	474	64.4%
There are too few dispensaries	407	55.3%

The program does not allow home delivery	359	48.8%
The program does not offer legal protections for housing	316	42.9%
Other	146	19.8%
The program does not include my medical condition	91	12.4%
I am satisfied with the program as is	32	4.3%

Table 5. COVID-19 changes and their impact on patient satisfaction

	Has decreased my satisfaction considerably	Has decreased my satisfaction somewhat	Has not affected my satisfaction	Has increased my satisfaction somewhat	Has increased my satisfaction considerably
Ability to order medical cannabis online	4%	5%	36%	23%	32%
Curb-side pick up of medical cannabis	3%	3%	38%	24%	32%
A 45-day supply limit instead of 90-day "use it or lose it"	20%	11%	38%	18%	13%
Virtual medical appointments for OMMCP patient cards	2%	1%	20%	19%	58%

APPENDIX VII – SURVEY INSTRUMENT

OMMCP Patient Survey 2021

Study Title: Evaluating the Ohio Medical Marijuana Control Program: Satisfaction and Perception

The purpose of this project is to survey medical marijuana patients and potential patients about their experiences and satisfaction with the Ohio Medical Marijuana Control Program.

The survey will take approximately 5-15 minutes to complete. Your participation is completely voluntary, and you may discontinue your participation at any time. You may take the survey in a private area of your choice. Your responses are completely anonymous and there are no expected risks for participation. We will work to ensure that no one sees your survey responses without approval. However, because the survey is online, there is a chance that someone could access your responses without permission. In some cases, this information could be used to identify you.

If you would like to find out more information about the project, please visit the [project website](#). If you have any questions or concerns about the study, you may contact Douglas Berman at berman.43@osu.edu. For questions about your rights as a participant in this study, to discuss other study-related concerns, or to voice complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

By clicking the button below, you voluntarily give your consent to participate in this study. If you do not wish to participate, please close out of your browser window.

Page break here

Q1 What is your gender?

- Female
- Male
- Other
- Prefer not to say

Q2 Please indicate below how do you identify yourself:

- White/Caucasian
- Black/African-American
- Asian or Pacific Islander
- Latino/Hispanic

- Other _____
- Prefer not to say

**Q3 Do you have any of the following conditions that would make you eligible for a medical marijuana patient status?
(you can select more than one)**

- Alzheimer's disease
- Amyotrophic lateral sclerosis (Lou Gehrig's disease)
- Cachexia
- Cancer
- Chronic traumatic encephalopathy
- Crohn's disease
- Epilepsy or other seizure disorder
- Fibromyalgia
- Glaucoma
- Hepatitis C
- HIV/AIDS
- Inflammatory bowel disease
- Multiple sclerosis (MS)
- Pain: either chronic, severe, or intractable (difficult to manage)
- Parkinson's disease
- Post-traumatic stress disorder (PTSD)
- Sickle cell anemia

- Spinal cord disease or injury
- Tourette's syndrome
- Traumatic brain injury
- I do not have any of the listed conditions
- I have a medical condition that I wish would be included on the list of approved conditions (please write in below) _____

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Q4 Are you currently a registered patient with the Ohio Medical Marijuana Control Program?

- Yes
- No
- I used to have an OMMCP patient card, but no longer have it

Q5 Do you currently use marijuana (in any form and with or without medical marijuana card)?

- Yes, primarily for medical reasons
- Yes, for recreational use only
- No

Skip To: Q6 If Do you currently use marijuana (in any form and with or without medical marijuana card)? = No

Skip To: Q18 If Do you currently use marijuana (in any form and with or without medical marijuana card)? = Yes, for recreational use only

Skip To: Q7 If Do you currently use marijuana (in any form and with or without medical marijuana card)? = Yes, primarily for medical reasons

Q6 Please tell us which of the following reasons is preventing you from using marijuana whether for medical or recreational purposes (you can choose more than one):

- I have no interest in using marijuana
- I have moral objections to using marijuana
- Marijuana is too expensive
- I am not familiar with the plant and am unsure how to use it
- I do not know how to register for the medical marijuana program
- I am having a hard time finding a physician who is willing/able to write me a recommendation
- The process for getting a patient card is too expensive and difficult
- There are no legal dispensaries close to my home
- I am worried about losing my job
- I am worried about losing my housing
- I am worried about other legal repercussions (custody, violating parole, etc.)
- I am worried about how my doctors would react if they found out I was a medical marijuana patient
- I am worried about losing my firearm privileges
- My medical condition is not included on the list of approved conditions (please write in below which condition) _____
- Other _____

Skip To: Q15 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = I am not familiar with the plant and am unsure how to use it

Skip To: Q15 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = I do not know how to register for the medical marijuana program

Skip To: Q15 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = The process for getting a patient card is too expensive and difficult

Skip To: Q15 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = I am having a hard time finding a physician who is willing/able to write me a recommendation

Skip To: Q15 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = There are no legal dispensaries close to my home

Skip To: Q15 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = I am worried about losing my job

Skip To: Q15 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = I am worried about losing my housing

Skip To: Q15 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = I am worried about other legal repercussions (custody, violating parole, etc.)

Skip To: Q15 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = I am worried about how my doctors would react if they found out I was a medical marijuana patient

Skip To: Q15 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = Marijuana is too expensive

Skip To: Q18 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = I have moral objections to using marijuana

Skip To: Q18 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = I have no interest in using marijuana

Skip To: Q18 If Please tell us which of the following reasons is preventing you from using marijuana whether for... = Other

Skip To: Q15 If Condition: My medical condition is not... Is Not Empty. Skip To: Overall, how satisfied or dissatisfied...

Q7 How long have you been using marijuana?

- Less than a year
- Between 1-2 years
- Between 3-5 years
- More than 5 years

Q8 On average, how often do you use marijuana in any form?

- I do not consume marijuana on a regular basis
- Once a month or less
- Once a week
- Several times a week
- On a daily basis

Q9 Please rate how important are the following elements in your marijuana purchasing decisions:

	Not at all important (1)	Slightly important (2)	Moderately important (3)	Very important (4)	Extremely important (5)
Convenience (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Price of product (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variety of product options (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Concerns about law enforcement (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchasing from a specific seller (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 What is your primary source for marijuana?

- I purchase all or majority of my marijuana at a legal OH dispensary
- I purchase marijuana equally from a legal OH dispensary and other sources
- I purchase all or majority of my marijuana from sources other than a legal OH dispensary
- I purchase majority of my marijuana at a legal dispensary out of state

Skip To: Q13 If What is your primary source for marijuana? = I purchase all or majority of my marijuana at a legal OH dispensary

Q11 If legal OH dispensaries are not your primary source of medical marijuana, what is the primary reason? (Please select all that apply.)

- Price of marijuana in dispensaries is too high
- Cost/difficulty of obtaining doctor's recommendation
- The nearest dispensary is too far
- Cost of obtaining and maintaining a patient card is too high
- It is easier for me to obtain it from other sources
- Lack of diverse products in medical dispensaries
- Lack of delivery options
- I simply prefer to use other sources
- The legal amount that I can purchase does not fulfill my medical needs
- Other: _____

Q12 Would you obtain marijuana from a medical dispensary instead of unregulated sellers if it was easily accessible and similarly priced?

- Yes
- No
- Unsure

Q13 How close do you live to the closest OH medical dispensary?

- 0-5 miles
- 5-15 miles
- 15-30 miles
- 30-50 miles

- 50-100 miles
- 100+ miles
- I do not know

Q14 Please indicate to what extent to do you agree with the following statements:

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree or disagree (3)	Somewhat agree (4)	Strongly agree (5)	Do not know (6)
The price of marijuana flower in legal dispensaries has gone down over time (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The price of manufactured marijuana products in legal dispensaries has gone down over time (vaping cartridges, lotions, etc.) (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The price of marijuana in legal dispensaries is not that much higher than the illicit market (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The variety of marijuana products and strains available in legal dispensaries has increased over time (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I trust the safety of products available in legal dispensaries (7)	<input type="radio"/>					
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Q15 Overall, how satisfied or dissatisfied are you with the current state of medical marijuana in Ohio?

- Extremely satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Extremely dissatisfied

Q16 How have the following changes instituted as part of the response to COVID-19 pandemic affected your satisfaction with OMMCP?

	Has decreased my satisfaction considerably (1)	Has decreased my satisfaction somewhat (2)	Has not affected my satisfaction (3)	Has increased my satisfaction somewhat (4)	Has increased my satisfaction considerably (5)	N/A (6)
Ability to order medical cannabis online (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Curb-side pick up of medical cannabis (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A 45-day supply limit instead of 90-day "use it or lose it" (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Virtual medical appointments for OMMCP patient cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(5)						
Other (write in below) (4)	<input type="radio"/>					

Q17 Which of the following elements are driving your dissatisfaction with the Ohio Medical Marijuana Control Program? (Please select all that apply. If you are satisfied with OMMCP, please select "I am satisfied with the program as is.")

- The price of marijuana in legal dispensaries is too high
- The program does not include my medical condition
- The program does not allow self-cultivation (home grow)
- There are too few dispensaries
- The program does not allow home delivery
- The program does not offer patients legal protections for employment
- The program does not offer patients legal protections for housing
- Other _____
- I am satisfied with the program as is

Q18 Do you support the full legalization of marijuana?

- Yes
- No