



Rapid survey among Hawai'i medical cannabis patients and providers on the potential effects of legalization of adult use ("recreational" or non-medical use)

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Report prepared by

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**Dual Use of Cannabis Task Force
Medical Use Permitted Interaction Group**

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Executive Summary

Act 169 of the Session Laws of Hawai'i (SLH) 2021 mandated a multi-stakeholder task force to explore the development of a dual system program for the legalization of adult use (recreational or non-medical use) of cannabis and the impacts of legalization on qualifying patients, including access to medical cannabis. At the request of the task force, the Hawai'i Department of Health (DOH) conducted a voluntary and anonymous online survey in July 2022 to collect input from patients, or their caregivers, and providers in the state medical cannabis program on their perceptions and concerns around the legalization of adult use and patients' current experiences in accessing medical cannabis and issues in relation to their medical use. Approximately 10% of the 34,200 currently registered patients and 9% of the 385 providers responded to the survey.

Findings from the survey show most patient respondents expressed that the legalization of adult use of cannabis would have a positive effect on the medical use of cannabis, while providers varied in their opinions. Patients and providers commented that legalization would facilitate access to those needing medical cannabis but are not enrolled in the medical use program and that legalization would reduce stigma and discrimination against medical cannabis users. Almost 90% of respondents hoped that legalization would lead to more product variety and reduce costs, although 44% were concerned that prices would rise, for example from overregulation and higher taxes. Other concerns raised included supply shortages, longer wait times to purchase products, and deteriorating product quality, although two-thirds of patients and one-half of providers were not concerned that product quality will decline. Nearly one-third of patients and providers were concerned that patients would lose their rights to grow their own cannabis. Another concern shared by both patients and providers is that there would be less focus on patient care and that fewer patients would be seeking medical consultation for their treatment needs.

The majority of patients stated that they intend to remain registered with the medical cannabis program should Hawai'i legalize adult use of cannabis. Reasons for remaining registered are to be documented as a medical patient for legal protections (e.g., for employment, interisland and interstate travel, housing, etc.), to continue receiving medical consultation with providers and receive caregiver support, to be recognized as a medical patient and have patient needs met, and because the medical program ensures quality control and testing of products. The 12% of patients who would exit the medical cannabis program cite the cost of the registration and provider fees as the main reason for leaving. Some will no longer need medical cannabis for their condition, or medical cannabis did not help with their condition. The leading consideration is cost for the one-third of respondents who were unsure whether they would remain a registered patient. These respondents commented that they would be registered if there were special benefits (e.g., tax breaks, dispensary discounts, priority access for purchasing products, etc.) for registered patients.

The survey gathered information on the types of products patients needed and the extent to which they could access medical cannabis products. Patients grew or shopped for a variety of products, with the most sought-after products being specific THC/CBD ratios, edibles, and flowers or buds. Specific strains and THC/CBD ratios were necessary for relieving specific syndromes. A high proportion of patients (86%) sourced some of their products from dispensaries, and 55% used dispensaries only. The next most common way patients obtained products was by growing their own medical cannabis (32%), and 9% exclusively grow their own. Few patients (3%) grow in a collective, or group of medical cannabis patients sharing a common grow area, or source online (2%). Over 87% of patients were always or often able to obtain the products they needed, but of those who were not always able to source needed products, the reasons were because dispensaries didn't carry needed products (56%), the products were unaffordable (48%), or because they were unable to travel interisland (19%). The distance for travel and lack of delivery or curbside services presented difficulties in accessing dispensaries for most of the patients, a quarter of who have no transportation or have debilitating conditions. The survey also collected data on the sources patients rely on for medical information about cannabis. Two-thirds consulted with healthcare professionals for medical

information, but a large proportion (56%) also obtained information about medical cannabis from dispensary workers.

Patients were asked about socioeconomic and legal issues related to their medical use so that recommendations can be made to address the stigma and discrimination surrounding cannabis use and issues that may arise due to marijuana's federal classification as a Schedule I drug. Three-quarters of patients reported no issues with employment, traffic violations, housing, medical benefits, insurance, child custody, or purchasing firearms because of their medical cannabis use, or were unable to use medical cannabis in public. The main issues encountered by patients were not being able to obtain a gun or permit (14%) and not being able to use their medical cannabis in public places (9%). For some patients, the Schedule 1 classification is a barrier to accessing housing and governmental assistance. Patients commented also that the federal law on cannabis places financial burden on patients since health insurance does not cover medical cannabis treatment. Most providers (69%) reported that their medical practice has not been negatively impacted by the federal law. Those who had been impacted clarified that the law interfered with their ability to provide patient care because patients cannot access cannabis or were hesitant to enroll in the medical cannabis program.

The feedback received from survey respondents is being used to inform the development of recommendations aimed at helping to prevent or mitigate adverse impacts on the medical use patients and program should the State of Hawai'i legalize adult use of cannabis. It will be important that cannabis use legislation adequately retains a focus on patient care so that treatment objectives are not compromised. Legislation could also improve the medical use program by addressing the current access and socioeconomic or legal issues which patients are encountering in relation to their medical use and enable providers to achieve the best quality of care for their patients.

Introduction

The DOH Office of Medical Cannabis Control and Regulation (OMCCR) is responsible for administering medical cannabis licensure and regulation and for the registration of qualifying patients and primary caregiversⁱ. Under Act 169 of SLH 2021ⁱⁱ, OMCCR convened a multi-stakeholder task forceⁱⁱⁱ (referred to as the "Dual Use of Cannabis Task Force") to explore the development of a dual system program for the legalization of adult-use (recreational or non-medical use) of cannabis and the impacts of legalization on qualifying patients, including access to medical cannabis. At the request of the Dual Use of Cannabis Task Force, OMCCR conducted a rapid survey among medical cannabis use patients or their caregivers and providers on the potential effects of legalization of adult use of cannabis ("recreational" or non-medical use) and patients' experiences in the medical cannabis program. The survey aimed to inform the Dual Use of Cannabis Task Force of patient and provider perceptions and concerns to appropriately provide recommendations that may help prevent and/or mitigate adverse impacts of the legalization of adult use on the medical use program.

In July/August 2022, 3302 patients or their caregivers and 33 providers responded to voluntary and anonymous online surveys. Results were presented to the Dual Use of Cannabis Task Force so that participant responses could be incorporated into the task force's recommendations to the State of Hawaii legislature for preventing or mitigating the potential negative impact on the medical use patients and program. This report is publicly available and can be accessed from the OMCCR webpage at <https://health.hawaii.gov/medicalcannabis/dual-use/>.

Methods

Survey methods

The surveys were conducted from July 28 to August 2, 2022. Online questionnaires were used to collect data from patients or their caregivers and clinicians (or providers) that certify patients for the medical cannabis program (see Appendix 1 for the patient survey and Appendix 2 for the provider survey). The patient questionnaire contained two sections: the first covered the patient's perceived impact of legalization of adult use, and the second inquired into the patient's experience in accessing medical cannabis and information and legal or social issues related to their medical cannabis use. After completing the first section, patients had the choice to end the survey or continue to the second section. The questions were approved by a quorum of the Medical Use Permitted Interaction Group of the Dual Use of Cannabis Task Force^{iv}. OMCCR sent a link to the online survey to patients, caregivers, and providers using the email address with which they had registered for the state medical cannabis program.

There was no target sample size given the convenience sampling used for the purposes of the rapid assessment. The study population for the patient survey was medical cannabis patients or their caregivers with valid registration. As of June 30, 2022, the Hawaii medical cannabis program had a total of 34,199 valid registered patients, of which 0.13% were minors, and patient ages ranged from 2 to 102 years. Caregivers were requested to respond to the survey on behalf of the patients. The study population for the provider survey was certified physicians and Advanced Practice Registered Nurses (APRNs) that have set up accounts with the medical cannabis program to certify patients in Hawaii. As of June 30, 2022, the Hawaii medical cannabis program had a total of 385 certified clinicians registered.

Participation in the survey was voluntary and anonymous. OMCCR used Survey Monkey[®], an online tool, to collect survey responses. The "anonymous responses" and "multiple responses" functions were applied to disable the identification of IP addresses and allow the survey to be taken only once from the same device.

Aggregated data were obtained from Survey Monkey or analyzed using the statistical software STATA version 14.0. For comments solicited using open-ended questions, data-driven coding was applied to review responses and construct a coding scheme based on major emerging categories. Each comment was read by at least two study investigators. Comments were not quantified if responses were optional. A summary statistics table of the themes are presented, and quotes selected are presented in this report as examples to reflect common or unique responses across themes. The study was reviewed and approved by the DOH Institutional Review Board.

Limitations

The surveys applied convenience sampling with opt-in participation, so the results do not represent the medical use program patient and provider populations. Because survey participation invitations and data collection were conducted online, only those patients and providers with internet access within the week of the survey could participate, potentially biasing the estimates towards a segment of the patient and provider population. The number of questions was intentionally short and focused on rapidly collecting information on patient and provider perspectives and concerns. Demographic data were not collected, so it was impossible to determine the extent to which the survey participant characteristics represent the medical use program patient demographics. Future surveys using representative sampling methods are recommended for monitoring the impact of the legalization of adult use on the medical use program and patients.

The survey aim was to provide the Dual Use of Cannabis Task Force with patient and provider input on the legalization of adult use, serving as one source of information for Task Force recommendations. The findings from this report are not exhaustive, noting that the survey did not explicitly solicit recommendations from participants.

Results

A total of 3237 patients, 62 caregivers for an adult and 3 caregivers for a minor, participated in the patient survey. Together, they represent 10% of currently registered patients. Of the participants, 2526 (76%) completed the second survey section, which asked about their current medical use experiences. The provider survey had 33 respondents, which is 9% of certified clinicians in the medical cannabis program.

Impact of adult-use legalization on patients

Patients, caregivers, and certifying providers were asked if they thought the legalization of adult-use cannabis (non-medical use) would yield only positive, negative, or both positive and negative results and to provide comments explaining their choice. Figure 1 shows that 53% of patients or caregivers chose "positive only." When combined with respondents who chose "both positive and negative," as many as 76% foresee a potentially positive outcome. Four percent of the patients or caregivers chose "negative only"; when combined with those who chose both positive and negative, 26% foresee a potentially negative outcome. Providers' responses seen in Figure 2 were evenly distributed across the "positive only" (30%), "both positive and negative" (30%), and "unsure" or "I don't know" (31%). About one in ten providers think legalization will have only negative outcomes. When combining "both positive and negative" with "positive only" or "negative only," as many as 60% of providers foresee a potential positive outcome, and 39% foresee a potentially negative outcome. Those who were unsure said that "it depends" on how much the medical cannabis laws or program is changed.

Figure 1. Patients' opinion on the effect of adult-use legalization on the medical use of cannabis

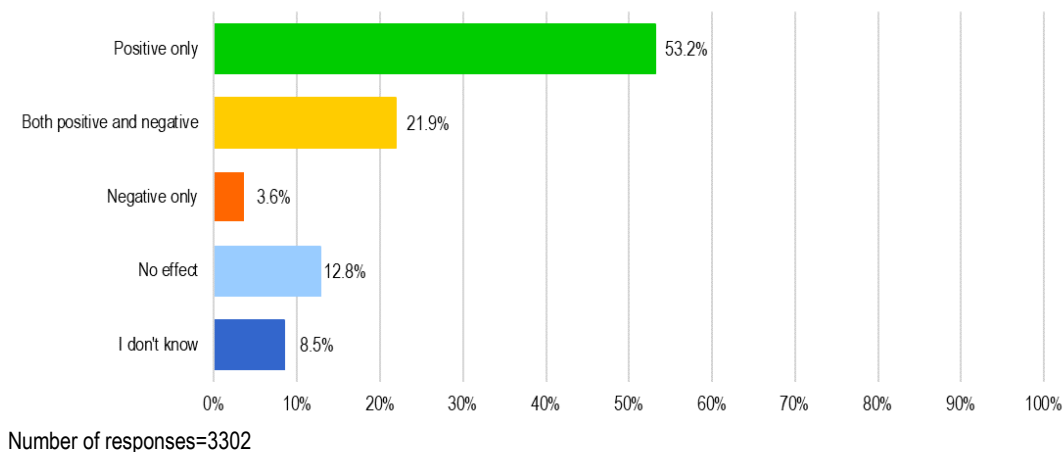
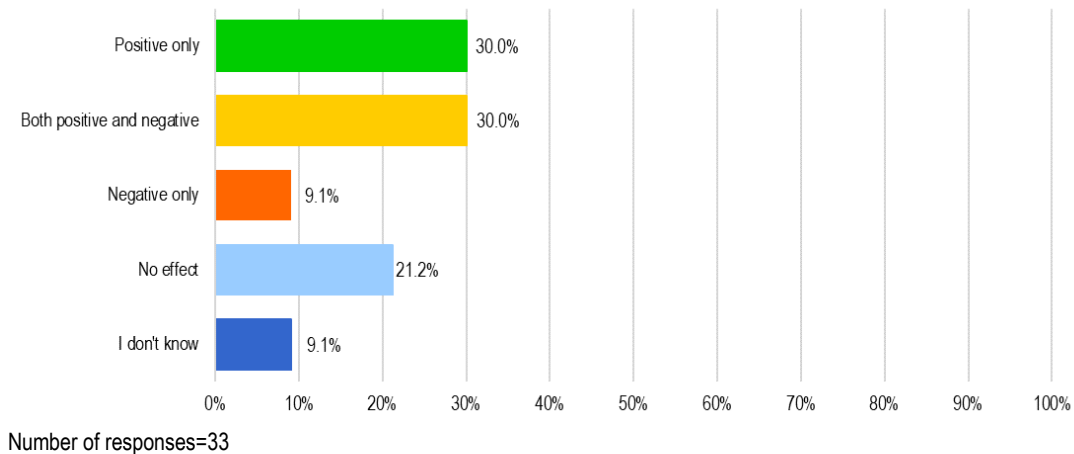


Figure 2. Providers' opinion on the effect of adult-use legalization on the medical use of cannabis



Medical access and patient care

While patients, caregivers, and clinicians cited both potentially positive and negative effects, they mostly agreed that legalization could possibly increase medicinal use and provide greater access to current patients. Respondents commented that adult-use legalization facilitates access, particularly to those who cannot or do not want to register because they do not have a qualifying condition, registration limits their ability to own firearms, or they do not want to be "on a list." Additionally, it was felt that patients who choose to opt out of the medical use program because of cost or other considerations (e.g., clinician's certification and DOH registry fees) also would be able to access medical cannabis.

Patients and providers were concerned that there would be less focus on patient care and needs. Legalization may interfere with clinicians' oversight of patient care if fewer patients seek medical advice for their treatment needs. Almost half of the providers expressed some level of concern about the loss of patient retention in the medical use program following legalization. Nearly two-thirds prefer that qualifying conditions set for the medical cannabis program be eliminated, so the determination of appropriate medical cannabis use for patients belongs to clinicians (Table 2).

Product variety, costs, and quality

Patients saw legalization as an opportunity to increase product variety and reduce costs, with almost 90% hoping for more product options for their medical needs and lower costs. Most providers agreed on the importance of allowing separate licenses for growers, manufacturers, and retailers to produce and distribute products that could help increase product options and reduce costs (Table 2). Many patients thought legalization would lead to more storefronts, resulting in a larger number and greater variety of products, and market competition would help decrease prices. However, a notable proportion of patients (44%) were concerned that prices for the products they need would rise. There may also be decreased supply or shortages of needed products and reduced product quality, specifically CBD-rich products. There was also concern about increased costs resulting from overregulation and high taxes. Furthermore, patients concerned about longer wait times in crowded stores and less time to consult with a budtender (i.e., an attendant working behind the counter at a dispensary who may be able to answer questions on strains and cannabis products). Patients were generally not concerned about mixing with customers who are not patients but also wanted to have privacy at the shops.

There was less concern about product availability and quality among patients. Table 1 shows that the majority of patients were not concerned that their products would no longer be available (65%) or that product quality would

deteriorate (64%). Likewise, providers were not concerned about products no longer being available (64%), although they were less certain about legalization's effect on product quality (Table 2). Some patients who expressed concerns about product quality have observed product quality decreasing following the legalization of adult use in other states, for example:

"Was living in California during the switch over from [medical] to recreational. Saw a decrease in quality due to demand, however the stigma and prejudice around cannabis also decreased so that was good. After about 6 months the market evened out and dispensaries opened to support the demand, also better quality control after the growing pains."

Ability to grow own medical cannabis

Many patients commented that it was important for them to be able to continue to grow their own medical cannabis. Nearly 30% of patients concerned they would not be allowed to grow their own medical cannabis (Table 1). A similar proportion of providers were concerned about patients not being able to access products by growing their own or through a caregiver or collective (i.e., a group of medical cannabis patients sharing the expenses, work, and labor in a common grow area) (Table 2).

Stigma and discrimination

There was general consensus among patients and providers that legalization could increase public acceptance of cannabis use and thereby reduce stigma and discrimination against medical cannabis users. Two-thirds of patients indicated they would be more open to discussing their medical use if adult use were legalized (Table 1). Some patients also commented that they would worry less about prosecution resulting from their medical use. Another perceived benefit by patients and clinicians is that increased access to medical cannabis through legalization would help reduce patient use of other substances (mainly prescription drugs and alcohol).

Other potential public health outcomes

Beyond the positive effects on the medical use patients, respondents thought adult use legalization would decrease the illicit market and thereby reduce crime, increase state revenue and provide opportunities for cannabis research. However, many were wary about the possible interference by major corporations and big businesses buying up land, profiting off the adult use industry, and pushing out medical cannabis users. A patient stated,

"The business of cannabis does not work for patients because the primary concern of the "industry" is making a good return on its investment. This will drive the transfer of dispensary ownership to large mainland companies once adult use is authorized in Hawaii, which will solidify the commercial monopoly of cannabis and deprive the local community of any direct financial benefit while continuing the unreasonable prices because the dispensaries will still have to violate federal law and won't be able to deduct their business expenses from their federal tax returns."

Other public health concerns raised include harm to youth with easier access to children and youth, increased substance abuse, and more intoxicated drivers and workers. Furthermore, there was concern that increased recreational use through tourism may negatively impact the environment and the local people of Hawai'i.

Table 1. Patient opinions regarding adult use cannabis legalization in Hawai'i

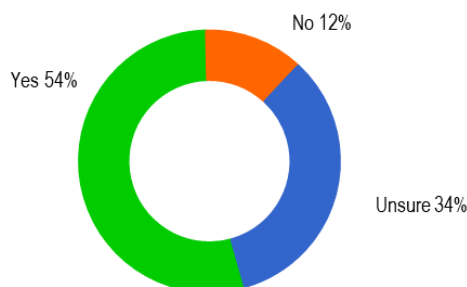
| Let us know how much you agree to the following statements if Hawaii legalizes adult use ("recreational" or non-medical use) | DON'T AGREE | SOMEWHAT AGREE | STRONGLY AGREE | UNSURE / NO OPINION / DOES NOT APPLY TO ME | TOTAL NUMBER OF RESPONSES |
|--|-------------|----------------|----------------|--|---------------------------|
| I am concerned products I need will no longer be available | 65.1% | 16.0% | 9.3% | 9.6% | 3,293 |
| I am concerned the quality of products will go down | 63.5% | 18.2% | 10.4% | 8.0% | 3,292 |
| I hope there will be more product options for my medical needs | 4.0% | 17.2% | 71.0% | 7.8% | 3,295 |
| I am concerned I won't be allowed to continue growing my own medical cannabis | 37.3% | 11.1% | 18.8% | 32.9% | 3,289 |
| I am concerned the cost of the products that I buy will go up | 44.9% | 21.6% | 22.3% | 11.2% | 3,293 |
| I hope costs for the products I buy will go down | 4.4% | 17.3% | 71.6% | 6.8% | 3,289 |
| It will help me be more open to talking about my medical use | 18.4% | 22.5% | 40.7% | 18.3% | 3,287 |
| I am concerned I will have to mix with customers who are not patients at the shops | 62.3% | 12.9% | 9.9% | 14.9% | 3,289 |

Table 2. Provider opinions regarding adult use cannabis legalization in Hawai'i

| Let us know how much you agree to the following statements if Hawaii legalizes adult use ("recreational" or non-medical use) | DON'T AGREE | SOMEWHAT AGREE | STRONGLY AGREE | UNSURE / NO OPINION | TOTAL NUMBER OF RESPONSES |
|---|-------------|----------------|----------------|---------------------|---------------------------|
| I am concerned patients will leave the medical use program | 36.0% | 33.0% | 15.0% | 15.0% | 33 |
| I am concerned the shops will no longer stock products that patients need | 64.0% | 9.0% | 9.0% | 18.0% | 33 |
| I hope the shops will reserve medical cannabis for patients | 0.0% | 24.0% | 61.0% | 15.0% | 33 |
| I hope the cost of medical cannabis products will go down | 3.0% | 15.0% | 73.0% | 9.0% | 33 |
| I am concerned the quality and safety of medical cannabis products will go down | 48.0% | 27.0% | 15.0% | 9.0% | 33 |
| I hope legalization will lessen stigma towards patients | 9.0% | 24.0% | 51.0% | 15.0% | 33 |
| I am concerned patients will be getting misinformation from the dispensaries and media | 57.0% | 18.0% | 18.0% | 6.0% | 33 |
| I am concerned patients won't be allowed to grow their own medicine | 57.0% | 12.0% | 15.0% | 12.0% | 33 |
| I am concerned caregivers won't be allowed to continue growing medical cannabis | 57.0% | 15.0% | 18.0% | 9.0% | 32 |
| I am concerned collectives won't be allowed to grow for patients | 51.0% | 18.0% | 9.0% | 21.0% | 33 |
| It is important to allow for a horizontal model (separate licenses for growers, manufacturers and retailers to produce and distribute products) | 15.0% | 33.0% | 27.0% | 24.0% | 33 |
| I hope the list of qualifying conditions will be dropped, so that clinicians can determine appropriate use | 15.0% | 18.0% | 54.0% | 12.0% | 33 |
| There needs to be a better system to report adverse events | 9.0% | 36.0% | 27.0% | 27.0% | 33 |

Intention to remain in the medical cannabis program

Figure 3. Patient intent to remain in the medical cannabis program following the legalization of adult use of cannabis



Number of responses = 3302

When asked, "Will you continue to be a registered patient if or when Hawaii legalizes cannabis for adult use ("recreational" or non-medical use)?" over half (54%) of the respondents stated they intend to remain a registered patient, 12% would not continue to be registered patients, and 34% are unsure (Figure 3). Major areas of focus include cost, legal, and health considerations, as well as access to quality medical cannabis, and maintaining their medical cannabis patient identity.

Cost considerations

Twelve percent of respondents would not continue to be registered patients, with cost being the most significant factor. Many respondents commented the registration and medical provider fees were costly and preferred the flexibility to access products without the cumbersome registration process and provider consultation. Similar to those who would exit the medical cannabis program, respondents who were "unsure" also cited cost as a major factor for leaving the program, but stated that they would maintain their medical status if there were financial benefits to patients, like tax breaks and dispensary discounts or other incentives such as priority access to purchase products so that patients do not have to wait in long lines.

"If there is a separate practice of handling medical patients versus recreational users I would continue. If I'm forced to stand in line with recreational users I don't see the point of jumping through an additional hoop and spending additional \$ to get most likely an inferior customer service interaction and or product."

"Why pay a fee for a medical card if you don't have to?"

"I'll be able to save 200 dollars from not having a doctors appt and the fee"

Legal considerations

The respondents who would remain registered or who were unsure if they would remain a registered patient cited continued enrollment in the program for legal protections. Perceived protections include employment purposes, the

ability to access medical cannabis in other states when traveling, access to Veterans Affairs (VA) care, housing purposes, and because the Drug Enforcement Agency considers cannabis a schedule I drug making it federally illegal. A few stated that while they prefer to stay in the medical cannabis program, the firearm restrictions for medical cannabis users weigh on their decision to continue being a registered patient.

"For my career reason, it is better to have documented medical card than be flagged as recreational when used medicinally"

"...because cannabis is still registered as a class 1 drug."

"In case I should travel to a state where it is not legal. If it becomes federally legal, I might deregister."

"I want to continue to hold a cannabis card in the event my landlady asks."

"Ideally I would be, however with firearms restrictions placed on medical cannabis patients currently, that would weigh on my decision as to continue holding my medical certification"

Health considerations

Medical cannabis has provided help or relief for some of the respondents' health issues. Patients expressed wanting to continue to consult with their medical provider about managing their condition(s) with cannabis and "...believe in well-managed, coordinated care". Three respondents would remain registered patients because they value the patient-caregiver relationship. Additionally, having a safe environment to access medical cannabis was (quantify) reported by the respondents.

"I am a cancer patient and the products i currently use really help me, especially to sleep at night. I rely on those products."

"I will still need the cannabis for my own health issues, and having it available and legal only will help my chances of being treated."

"I use this treatment method for severe pain management. I am in serious pain daily... nightly. It helps to have a Doctors advice in this regard."

"I have a caretaker who cares about me."

"I would like to continue to have an open dialogue with my doctor for the best type of cannabis treatment for me."

"I like the comfort of having a registered place to access my medication."

Some patients that would not remain registered stated they no longer required clinical support given that they knew their dosage or no longer needed medical cannabis for their condition. One respondent said cannabis did not help with their medical conditions. Respondents who are unsure commented they would still like to consult with their medical provider, while others were unsure because their medical conditions either improved or worsened so that they may no longer need cannabis. A caregiver reported a patient's behavior worsened with the use of cannabis.

"Cancer treatment is nearly over"

"Hopefully I won't have to have chemo again, and I won't need it."

"Cannabis did not help me"

Access to quality cannabis

Many respondents commented that product regulation is essential to them and that the medical side of the cannabis industry is more concerned with quality control and testing. Some respondents expressed their need to continue growing cannabis for themselves because they can grow specific strains that effectively provide relief to their condition(s) and cannot afford the dispensary prices. The ability of patients to grow cannabis is a determining factor in whether some of the respondents would remain a registered patient. Many respondents perceived and hoped for an overall cost reduction for remaining a patient. After observing how other states have rolled out their adult use program, the respondents who are either unsure or would continue to be a registered patient thought that certain products, higher potency levels, product discounts, and tax breaks should be available to the patients. A few hoped that their medical insurance would cover their medical cannabis.

"Medical more concerned with quality control, testing, known terpene content etc. Strain genetics, growing phenotypes for specific medical effects are different than recreational properties."

"I want the quality control. I don't trust products made by independent growers."

"Regulation of chemistry is vital to people not overdosing"

"Medical program allows me to grow my own medication. I can grow varieties which I find effective in treating my pain. I cannot afford purchasing cannabis. Think how costly prescription medications are without prescription medicine insurance."

"it depends on the quality. If I can get the same quality and without registering, then I will no longer register. Having to "register" is just a revenue generator for the state and MDs"

"If current product lines are discontinued or modified for non-medical use, but available for medical use, I would be a registered patient."

Medical cannabis patient identity

Patients expressed the importance of maintaining a separate program that prioritizes patient goals, which are different from those of adult use or recreational users, so they can continue to get the medical support and products they need. Furthermore, adult use also carries a stigma to which medical use patients do not want to be attributed. On the flip side, one patient commented on the stigma of being a registered patient. They shared that the registration process creates the feeling of being judged, and a few others would register only if required by law.

"I would like to still be set apart from people who just want to get high. I use it for medical purposes only. It helps me achieve simple everyday tasks with minimal pain I otherwise would not be able to do."

"Because I am a medical marijuana patient and I want to be recognized as such."

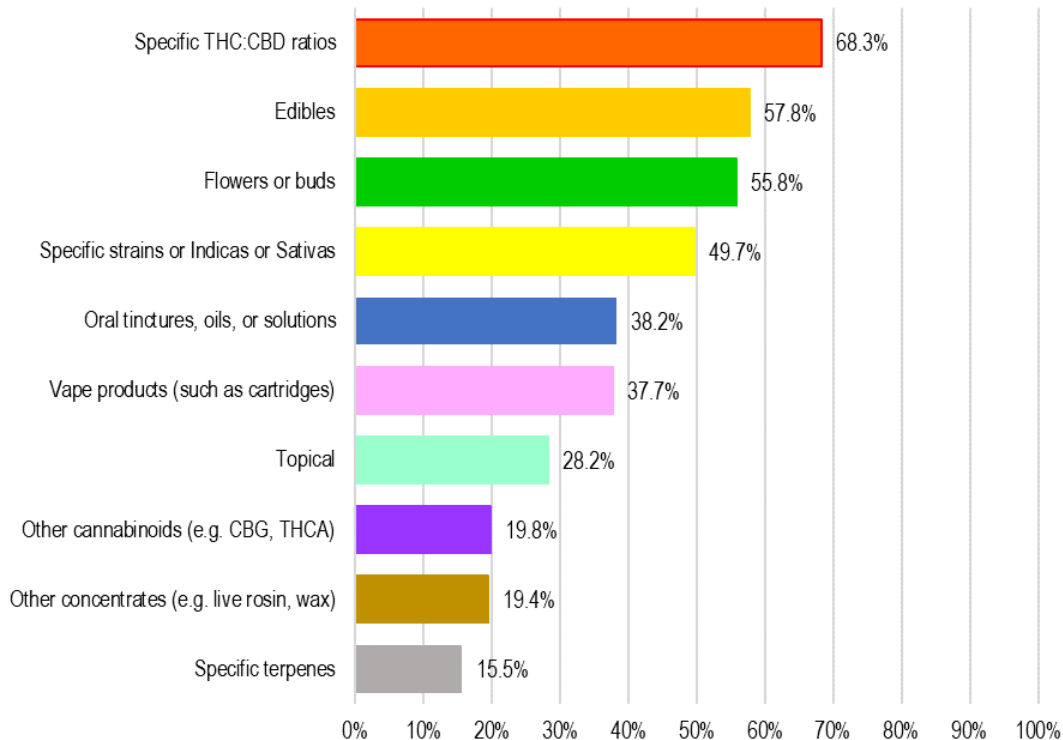
"being a medical patient gives patients as sense of being more responsible"

"I think it's important to separate medical use and recreational use patients for care"

"I like buying a beer without feeling like a criminal. All the ids and papers to buy cannabis makes me feel judged. No one makes me do the hula to buy alcohol"

Products patients seek

Figure 4. Medical cannabis products patients grow or shop for



Number of responses = 2464

Patients were asked what type(s) of medical cannabis they needed to grow or shop for and could select all that applied. As shown in Figure 4, most seek specific ratios of THC/CBD, edibles, and flowers or buds. Of the 2,464 patients that answered this question, 216 commented on the products they need to help relieve symptoms of their condition(s), noting they are generally successful in finding specific types of medical cannabis. Still, some have had difficulty finding adequate amounts of products in stock, specifically high CBD/low THC or high CBD/high THC products. One patient found that an indica that was high THC and low CBD was a perfect combination to help relieve their spinal cord pain syndrome.

"high strength CBD + high strength THC for amputation pain ... not always in stock and very expensive; high strength THC flower is not often in stock and is also expensive"

"A serum that is 1/2 THC & 1/2 CBD seems to help me a lot ~ I don't like to feel [stoned]"

"As a cancer patient I am especially interested in high CBD/ low THC ratio tinctures for cancer and higher THC ratio for pain control"

A few of the respondents are looking for other cannabinoids like cannabinal (CBN), cannabidivarin (CBDV), cannabigerol (CBG) delta-8 tetrahydrocannabinol (delta-8 THC), and terpenes (no specific terpenes were identified).

"I would like to shop for terpenes but the dispensary's website doesn't make that easy."

"In practice, I have found some strains help my symptoms more than other, given the complex relation between the different chemical components of each strain. [Some] tend to shop for proven strains, rather than any one variable such as THC level, terpenes, etc."

"CBG in high amounts (> 2.5%) works very well but the sativa strain is rarely in stock in full quantities."

Patients would also like access to a wider variety of products. Product types of that were commonly mentioned in the respondents' comments were foods (not candy), gel caps, tablets, topicals (including patches, suppositories, "shake"^{vi} or cannabis leaves) to make edibles, and a few respondents requested pre-rolls (or pre-rolled marijuana cigarette, also known as a joint).

"It would be nice to have pre-rolls especially for older people who have arthritis."

"It would be really nice to be able to purchase pre-rolled items. While I utilize a lot of topicals and use flower to make my own tinctures, having the ability to easily access a smoke-able compound would also be helpful."

About a dozen respondents said they would like to purchase seeds, clones, or plants legally from a reputable grower or dispensary. They would also like to grow or find strains. Currently, Hawaii state law does not provide a legal pathway for medical cannabis patients to obtain seeds or plants to grow their own.

"Please give us seeds & clones, growing is hard enough as it is"

"Seeds. We can grow our own cannabis but there's no where to purchase seeds."

Product sources

Patients were asked how they obtain the medical cannabis products they need on the island they live on. They were able to select multiple sources. Figure 5 shows that most patients reported sourcing their cannabis from a dispensary, followed by growing their own, getting it from other sources, other patients, growing in a collective, and buying cannabis online, respectively. Of patients using a single source to obtain their cannabis, the majority obtain cannabis from a dispensary only. A small percentage only grow on their own, and less than one percent grow only in a collective.

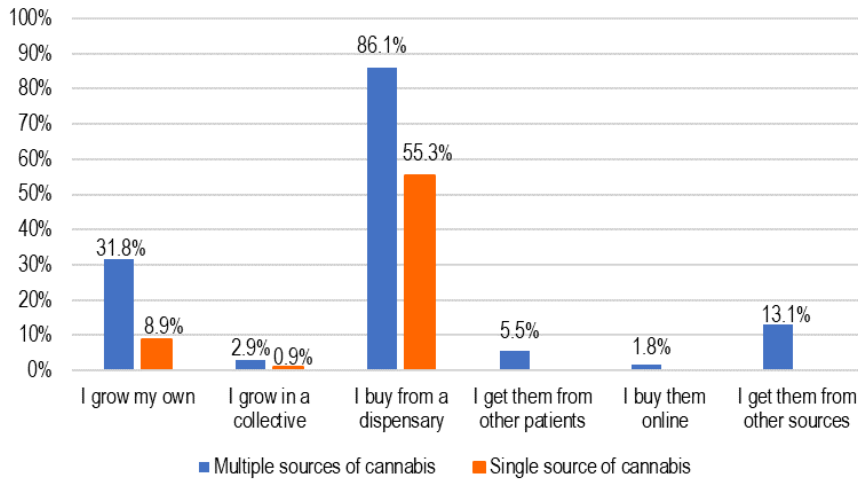
Most importantly, a significant proportion of patients can obtain the type(s) of medical cannabis they need. Figure 6 shows that approximately three-fourths of the respondents can always or often get the cannabis they require to help alleviate the symptoms of their medical condition(s). A small but crucial subset of the population surveyed can never obtain what they need.

In examining why patients have difficulty obtaining the cannabis they need, Figure 7 shows a significant proportion of respondents who stated the dispensaries do not have what they need or products are unaffordable.

"They are too expensive and limited products. Need to open the market up (no longer have a vertical only system)."

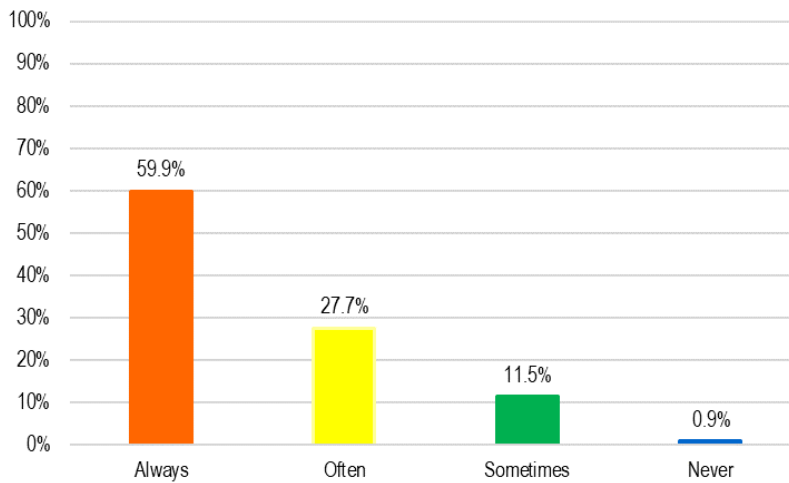
"The cost is very high and Hawaii seems to limit the products the dispensaries are able to sell."

Figure 5. Patients' sources of cannabis, by multiple or single sourcing



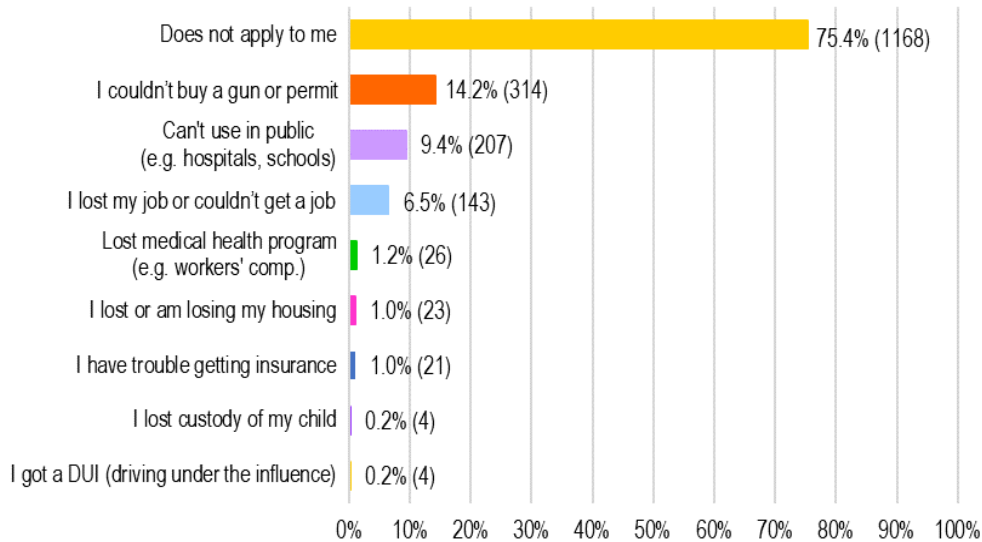
Number of responses = 2507

Figure 6. Patients' ability to obtain the type(s) of medical cannabis needed in the past 12 months



Number of responses = 2508

Figure 7. Issues obtaining the cannabis needed for patient use

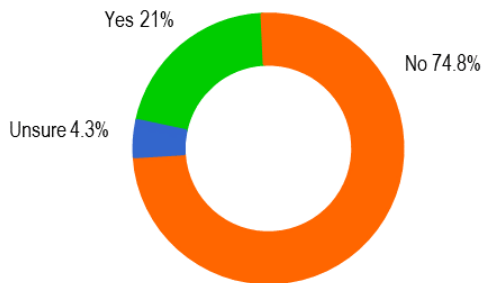


Number of responses = 964

The federal scheduling of marijuana (cannabis) as a controlled Schedule I substance, or drugs with no currently accepted medical use and a high potential for abuse, makes it illegal for patients to travel interisland or interstate with their cannabis. About one-fifth of the respondents reported that as a barrier to access. About 30% don't know how to grow or do not have a place to grow. Another reason that makes it difficult for patients to obtain the cannabis they need is their medical condition(s). A few patients reported being homebound, citing mobility issues, anxiety prevents them from leaving their house, and they are disabled. Lastly, 13% find it challenging to access a dispensary.

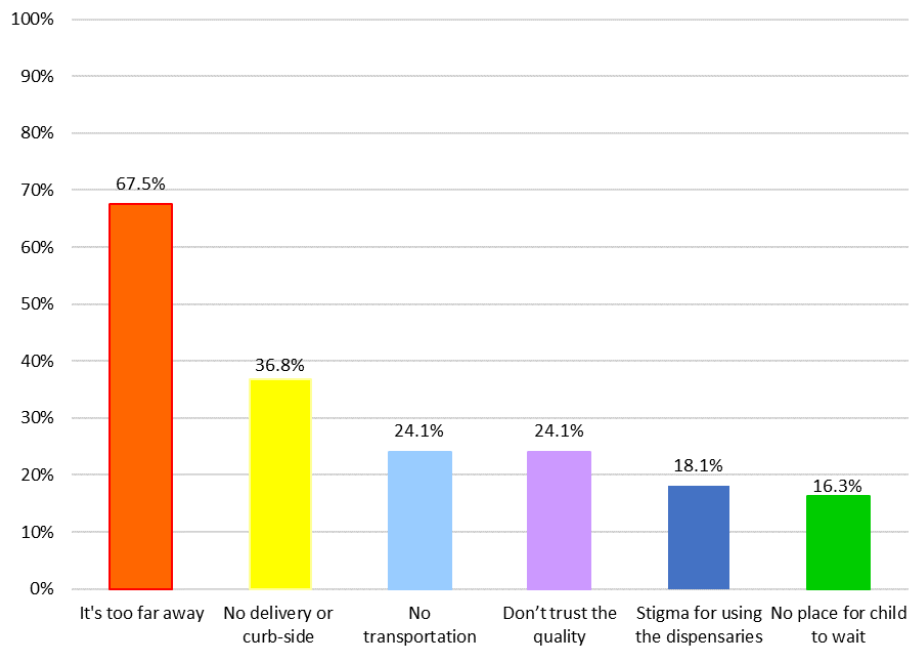
"I am homebound. Really sick people need delivery. Isn't the point to help people who need it? A flash sale in a dispensary that is hard to get to is no use. Give us delivery!"

Figure 8. Proportion of patients having difficulty using dispensaries



Number of responses = 1003

Figure 9. Patients reporting why it is difficult to use a dispensary



Number of responses = 166

Respondents generally do not find it hard to use a dispensary, but about a quarter of those find it difficult or are unsure (Figure 8). Of the patients that found it difficult to access a dispensary or were uncertain, the distance to a dispensary was the main reason; also noted is that some live on islands that do not have a dispensary. Additional barriers to accessing dispensaries are no delivery service or curbside pick-up, no waiting place for children, some lack transportation, some do not trust the quality of products, and some feel judged for using a dispensary. Others reported the hours at the dispensary and co-operatives conflict with their work schedules, the atmosphere at the dispensaries is uncomfortable, their privacy is compromised, product ranges are limited, and a few patients said their disability makes access difficult.

"Living on Lanai has its difficulties, and i wish the dispensaries would mail my medicine. My other prescription drugs (from CVS) are able to be mailed, so i wish my medicinal marijuana could be the same!"

"Awkward to go there and not familiar with where they are located"

"Some dispensaries have patients wait OUTSIDE until your ID is checked! So much for PRIVACY PROTECTION! I also feel that this procedure puts me at higher risk of being targeted! I am a woman, who is already a target"

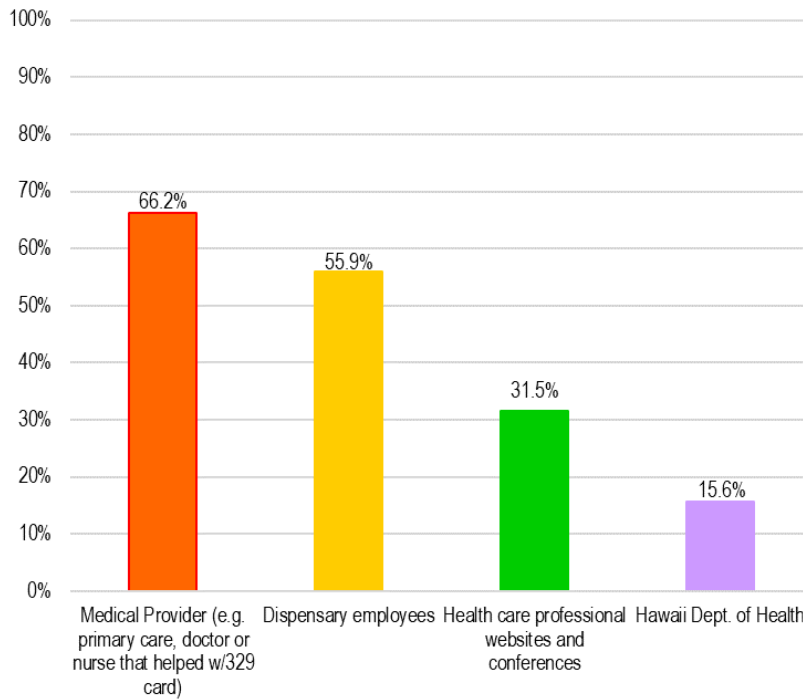
"I'm deaf and it's difficult to communicate with bud tenders also"

Sources for medical information

Two-thirds (66%) of patients consult with healthcare professionals for medical information about cannabis, either with the providers assisting with their patient registration, primary care doctors or nurses, or other healthcare professionals. Dispensary workers are the next most relied upon source, with 56% of patients obtaining information

medical information from them. Other sources of information provided in the comment section included self-reliance (8%), some stating they have extensive experience or expertise (several are clinicians), and the internet (4%). A small number of respondents listed friends and family, other patients and patient networks, books, scientific or medical journals, and co-op growers.

Figure 10. Sources patients rely on for medical information about cannabis



Number of responses = 2217

Legal and socioeconomic challenges and federal law impact

Patients were asked whether they had encountered issues with employment, traffic violations, housing, medical benefits, insurance, child custody, or purchasing firearms because of their medical cannabis use, or were unable to use medical cannabis in public. Of the 2211 patients responding, three-quarters reported that they had not encountered these issues. The two most reported issues were 1) not being able to buy a gun or obtain a gun permit (14%) and 2) not being able to use medical cannabis in public places such as hospitals or schools (9%).

Six percent stated that they lost a job or could not find employment because of their cannabis use. One patient explained,

"I am a small woman owned business in tech and recently awarded a subcontract but my prime [government] vendor had a drug testing policy. They forced me to take a test even though the state agency/end customer had no such policy and [in] Illinois, it's actually legal recreationally as well. It was a humiliating experience and it's on my permanent record that I "failed" a drug test so now it will show up on a background check for the rest of my life. They also fired me without cause shortly into the project and they used that as their excuse. I was devastated."

Many of the 240 written comments raised other employment challenges, including not being able to apply for specific jobs, fear of losing their jobs, having to hide or lie about their use status in job applications or at work, and not medicating because of random drug testing at the workplace. For example, patients wrote,

"I do not apply at places that will drug test, which many, many places in Hawai'i do. In fact, I go so far as to Google like crazy until I find out if they test, or not."

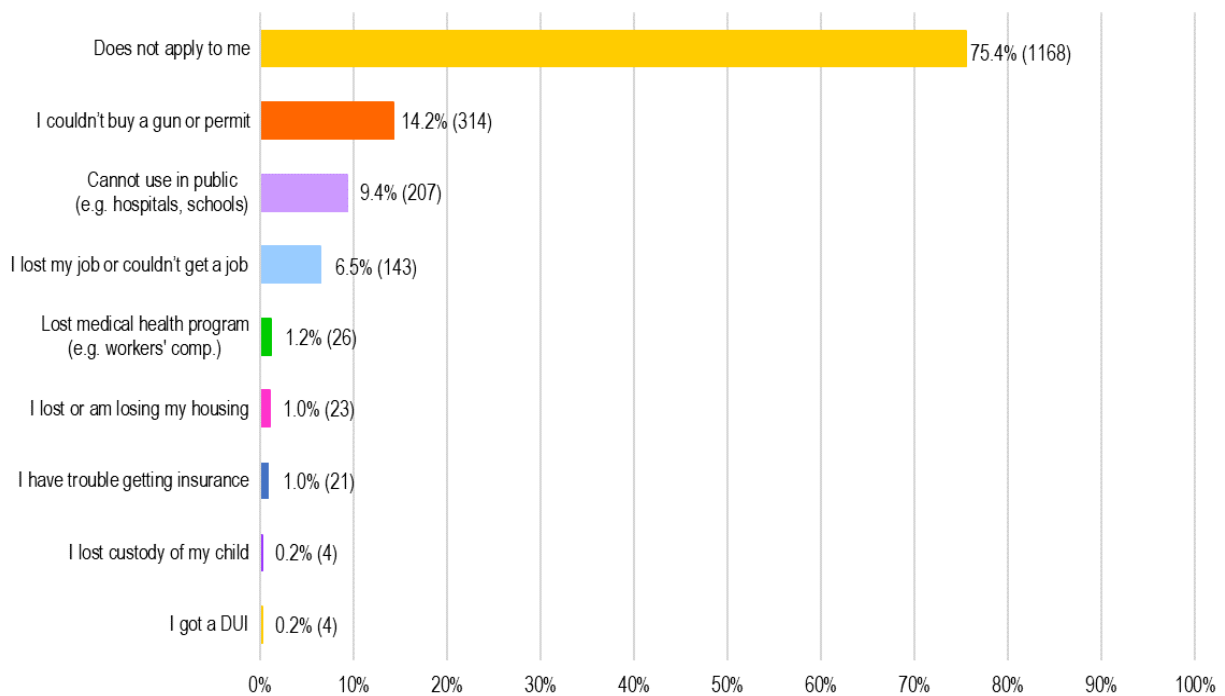
"[Hawaii Police Department] asked me to surrender my card to move forward with dispatcher application. I asked what about those who work while of opioids/steroids, etc... they couldn't answer me."

Other challenges that medical use patients have encountered include difficulty receiving healthcare from doctors not supportive of medical cannabis use, not being able to medicate at home when covered by federal housing, bank account closure, disqualification for disability or life insurance, travel restrictions, and stigma and discrimination. The status of marijuana as a Schedule 1 substance under federal law is a barrier to accessing housing and governmental assistance and places the financial burden on patients needing medical cannabis treatment.

"Could not live certain places, housing options limited, due to no MMJ in lease. I do not want to lie on rental app. I cannot participate in certain VA programs and state programs because MMJ is not authorized and is still a class 1 "drug".

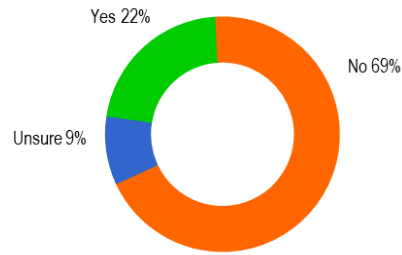
"I'm a 71 year old Vet with Stage 4 prostate cancer patient with Tripler Chemo Clinic. Neither Aloha Care/Medicaid or the DOD prescribes cannabis products. It needs to be covered."

Figure 11. Patients reporting they are negatively impacted by the federal cannabis laws



Number of responses = 2211

Figure 12. Providers reporting federal cannabis law negatively impacted medical practice



Number of responses = 33

Seven providers stated that the conflict between federal and state cannabis laws has negatively impacted their medical practice by interfering with their ability to provide patient care, specifically to patients who cannot access cannabis and many others that are hesitant to enroll in the medical cannabis program. Most of the providers (69%) had not been negatively impacted, and 9% were unsure (Figure 11). A provider recommended that should the state legalize adult use; a strength-tiered system should be established to limit higher medical THC percentages to medical cannabis patients.

Conclusions

As the State of Hawai'i considers the legalization of adult use of cannabis, patients and providers of the medical cannabis program foresee opportunities to increase medical cannabis access and meet patient care needs. Particularly, they see potential increases in product options and cost reduction. Affordability of medical cannabis was among the most cited issue to address. Many patients have difficulty affording the products given the patient registration and provider fees well as costs of products. Dispensaries are a major source of medical cannabis for patients—over 80% of patients buy from dispensaries and over half obtain their medical cannabis only from dispensaries. More dispensaries and delivery services are desired, and product costs could be reduced by addressing the "seed-to-sale" vertical system whereby retailers must grow and manufacture all products they sell. Most providers support the change to a horizontal system in which separate licenses can be issued to growers, manufacturers and retailers to produce and distribute products.

Market competition and more storefronts following legalization could help increase product options and reduce costs, but patients and providers cautioned that profit interests in the adult use industry may compromise patient care without adequate protections for medical use. Patients and providers recommend ensuring a comprehensive selection of medical products, such as more CBD-rich strains and different THC/CBD ratios (and labeling products with these ratios), preserving dispensaries, and providing priority access to products for medical patients. Addressing these, among other issues, would help to achieve patient retention in the medical cannabis program. Over half of patients indicated they would continue to register as a medical use patient, and the one-third of patients who were unsure stated that benefits and incentives such as tax breaks are key considerations. Other features of the medical cannabis program that are important to patients and providers are product quality control and the ability for patients to grow their own medical cannabis. Furthermore, patients rely mostly on their certifying medical cannabis providers for information on medical cannabis, and some patients would like to continue receiving medical consultation.

Legislation aiming to mitigate potential harms to the medical cannabis patients and program can also address stigma and discrimination surrounding cannabis use and the federal classification of cannabis as a Schedule I drug. While most patients reported not encountering issues related to their medical use, there continue to be patients experiencing socioeconomic or legal difficulties in relation to their medical use. For example, medical use patients have trouble securing employment and housing, even after two decades of medical use legalization in the State. Many patients expressed dissatisfaction for not being able to obtain firearms because of their medical cannabis use. A number of clinicians find the federal law to interfere with quality care, stating for example that they are unable to prescribe medical cannabis over other "more toxic" medications when patients are afraid to enroll in the medical cannabis program.

Survey findings indicate that patients and providers have a mostly positive outlook on legalization of adult use of cannabis. However, participants identified a wide range of current and potential challenges pertaining to medical access and product quality and cost, along with socioeconomic and legal, requiring strong legislation to ensure the patient's health objectives are met.

Acknowledgements

We thank the patients and providers who participated in the survey for their time and valuable input.

Appendices

Appendix 1. Patient survey questionnaire

Legalization of Adult Use ("Recreational" or Non-Medical Use) – Medical Cannabis Patient Survey

PAGE 1

The Dual Use of Cannabis Task Force is gathering information about the potential effects of legalization of adult use of cannabis ("recreational" or non-medical use). You are invited to fill out a survey on how legalization of adult cannabis use may affect your experience in accessing medical cannabis. We need this information to help us recommend policies that may help prevent and/or mitigate negative impacts on medical cannabis patients.

The survey is voluntary and your responses cannot be linked to you. Whether or not you participate in the survey will not affect your patient status or services you receive from the medical cannabis program. The survey will take about 5-15 minutes, and you can stop at any time. Results from the survey will be used in a report that will be made publicly available. By responding to the questions, you are consenting to participate in the survey.

For more information about the Dual Use of Cannabis Task Force and access to the task force meetings and reports, please see <https://health.hawaii.gov/medicalcannabis/dual-use/> or contact the Office of Medical Cannabis Control and Regulation at (808) 733-2177 or omccr@doh.hawaii.gov.

1. Are you responding as a patient or caretaker? (If you are a caretaker, please answer the rest of the survey on behalf of the patient)
 - Patient
 - Caretaker for a minor
 - Caretaker for an adult

2. Do you think that the legalization of adult use of cannabis ("recreational" or non-medical use) will have a positive, a negative, or no effect on the medical use of cannabis? (Select one only)
 - Positive only
 - Negative only
 - Both positive and negative
 - No effect
 - I don't know

3. Please explain (optional):
4. Will you continue to be a registered patient if or when Hawaii legalizes cannabis for adult use ("recreational" or non-medical use)?
 - Yes
 - No
 - Unsure
5. Specify why or why not (optional):
6. Let us know how much you agree to the following statements **if Hawaii legalizes adult use ("recreational" or non-medical use).**

| | | Don't agree | Somewhat agree | Strongly agree | Unsure/no opinion/does not apply to me |
|----|--|-------------|----------------|----------------|--|
| a. | I am concerned products I need will no longer be available | ■ | ■ | ■ | ■ |
| b. | I am concerned the quality of products will go down | ■ | ■ | ■ | ■ |
| c. | I hope there will be more product options for my medical needs | ■ | ■ | ■ | ■ |
| d. | I am concerned I won't be allowed to continue growing my own medical cannabis | ■ | ■ | ■ | ■ |
| e. | I am concerned the cost of the products that I buy will go up | ■ | ■ | ■ | ■ |
| f. | I hope costs for the products I buy will go down | ■ | ■ | ■ | ■ |
| g. | It will help me be more open to talking about my medical use | ■ | ■ | ■ | ■ |
| h. | I am concerned I will have to mix with customers who are not patients at the shops | ■ | ■ | ■ | ■ |

7. Thank you for answering questions about legalization of adult use. Do you have time to answer more questions about your experience using medical cannabis?
 - Yes (skip to page 2)
 - No [END SURVEY: Thank you for your time! You can contact the Office of Medical Cannabis Control and Regulation if need (808) 733-2177 or omccr@doh.hawaii.gov.]

PAGE 2

8. How do you get the medical cannabis products you need on the island you live? (Check all that apply)
- I grow on my own
 - I grow in a collective
 - I buy from dispensary
 - I get them from other patients
 - I buy them online
 - I get them from other sources
9. In the past 12 months, to what extent have you been able to obtain the type(s) of medical cannabis you need?
- Always (skip to page 5)
 - Often (skip to page 3)
 - Sometimes (skip to page 3)
 - Never (skip to page 3)

PAGE 3

10. If you have not always been able to obtain the medical cannabis you need, what is causing that problem? (Check all that apply)
- I cannot afford it
 - I don't know how to grow (or had crop failure)
 - I can't find the right seeds or plants to grow
 - I don't have a place to grow
 - I can't transport it by plane or boat from one island to another
 - The dispensaries don't have what I need
 - It's hard for me to use the dispensaries
 - Other
11. Is it hard for you to use a dispensary?
- Yes (skip to page 4)
 - No (skip to page 5)
 - Unsure (skip to page 5)

PAGE 4

12. Why is it hard for you to use a dispensary? (Check all that apply)
- It is too far away

- I don't have transportation to get to the dispensary
- It doesn't have delivery or curbside pick up
- It doesn't have a place for my child to wait
- I'm afraid that people will judge me if I use dispensaries
- I don't trust the quality of dispensary products
- Other, please specify (optional):

PAGE 5

13. What type(s) of medical cannabis do you need to grow or shop for? (Check all that apply)

High THC, high CBD or specific THC:CBD ratios

- Other cannabinoids (for example CBG, THCA, etc.)
- Specific terpenes
- Flowers or buds
- Specific strains or Indicas or Sativas
- Vape products (such as cartridges)
- Edibles
- Oral tinctures, oils or solutions
- Other concentrates (for example live resin/rosin, wax, shatter, badder, etc.)
- Topical
- Other, please specify (optional): _____

14. Who do you rely on for medical information about cannabis? (Check all that apply)

- The doctor or nurse who helped me get my 329 card
- My primary care doctor/nurse or other healthcare professional(s)
- Healthcare professional websites and conferences
- The dispensary workers
- Hawaii Department of Health
- Other, please specify (optional)

15. Have you had any of the following happen to you ***because of your medical cannabis use***? (Check all that apply)

- I lost my job or couldn't get a job
- I received a DUI (driving under the influence)
- I lost or am losing my housing (getting eviction)
- I lost my medical health program such as pain management program or workers' compensation
- I have trouble getting insurance
- I couldn't use my medical cannabis in public places like hospitals and schools
- I lost custody of my child

- I couldn't buy a gun or get a gun permit
- Does not apply to me
- Other, please specify (optional)

[END SURVEY] Thank you for your time! You can contact the Office of Medical Cannabis Control and Regulation if need (808) 733-2177 or omccr@doh.hawaii.gov.]

Appendix 2. Provider survey questionnaire

Legalization of Adult Use ("Recreational" or Non-Medical Use) – Medical Cannabis Provider Survey

PAGE 1

The Dual Use of Cannabis Task Force is gathering information about the potential effects of legalization of adult use of cannabis ("recreational" or non-medical use). You are invited to fill out a survey on how legalization of adult cannabis use may affect patient access to medical cannabis or affect your practice. We need this information to help us recommend policies that may help prevent and/or mitigate negative impacts on the medical use program.

The survey is voluntary and your responses cannot be linked to you. Whether or not you participate in the survey will not affect your status in the medical cannabis program. The survey will take about 5-10 minutes, and you can stop at any time. Results from the survey will be used in a report that will be made publicly available. By responding to the questions, you are consenting to participate in the survey.

For more information about the Dual Use of Cannabis Task Force and access to the task force meetings and reports, please see <https://health.hawaii.gov/medicalcannabis/dual-use/> or contact the Office of Medical Cannabis Control and Regulation at (808) 733-2177 or omccr@doh.hawaii.gov.

16. Do you think that the legalization of adult use of cannabis ("recreational" or non-medical use) will have a positive, a negative, or no effect on the medical use of cannabis?
- Positive only
 - Negative only
 - Both positive and negative
 - No effect
 - I don't know

17. Please explain (optional):

18. Let us know how much you agree to the following statements **if Hawaii legalizes adult use ("recreational" or non-medical use)**

| | | Don't agree | Somewhat agree | Strongly agree | Unsure/ no opinion |
|----|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a. | I am concerned patients will leave the medical use program | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| | | | | | |
|----|---|--------------------------|--------------------------|--------------------------|--------------------------|
| b. | I am concerned the shops will no longer stock products that patients need | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. | I hope the shops will reserve medical cannabis for patients | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. | I hope the cost of medical cannabis products will go down | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. | I am concerned the quality and safety of medical cannabis products will go down | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. | I hope legalization will lessen stigma towards patients | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. | I am concerned patients will be getting misinformation from the dispensaries and media | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. | I am concerned patients won't be allowed to grow their own medicine | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. | I am concerned caregivers won't be allowed to continue growing medical cannabis | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. | I am concerned collectives won't be allowed to grow for patients | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| m | It is important to allow for a horizontal model (separate licenses for growers, manufacturers and retailers to produce and distribute products) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| m | I hope the list of qualifying conditions will be dropped, so that clinicians can determine appropriate use | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| m | There needs to be a better system to report adverse events | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

19. Has your practice been negatively impacted by the conflicts between federal and state cannabis laws?

- Yes
- No
- Unsure

20. Please explain (optional):

[END SURVEY] Thank you for your time! If need, you can contact the Office of Medical Cannabis Control and Regulation (808) 733-2177 or omccr@doh.hawaii.gov.

Endnotes

ⁱ Legislature of the State of Hawai'i. Act 159 H.B. NO. 2742. A Bill for an Act Relating to Medical Cannabis. https://www.capitol.hawaii.gov/slh/Years/SLH2018/SLH2018_Act159.pdf

ⁱⁱ Legislature of the State of Hawai'i. Act 169 S.B. No. 1139. A Bill for an Act Relating to the Office of Cannabis Control and Regulation. https://www.capitol.hawaii.gov/slh/Years/SLH2021/SLH2021_Act169.pdf

ⁱⁱⁱ Dual Use of Cannabis Task Force information accessible at <https://health.hawaii.gov/medicalcannabis/dual-use/>

^{iv} <https://health.hawaii.gov/medicalcannabis/files/2022/06/Permitted-Interaction-Groups.pdf>

^v momentive.ai. SurveyMonkey, 1999-2022. www.surveymonkey.com

^{vi} “Shakes” are small pieces of cannabis flower that were once part of larger bud, and usually falls off the flower when handling them.