



COMPASSIONATE
CERTIFICATION CENTERS™



Affinity
BioPartners

PUBLISHED DECEMBER 2019

PENNSYLVANIA MEDICAL MARIJUANA PROGRAM—

Patient perspectives over the first two years

Bryan Doner, DO, CHWS, FACHM, CMO, and Co-Founder, Compassionate Certifications and **Christina DiArcangelo**, CEO and Founder, Affinity Bio Partners and CEO, Co-Founder AIHealth Outcomes (CannaBot™)



Table of contents

Introduction.....	3
Background.....	5
Methodology.....	6
Findings.....	6-16
Discussion.....	17-18
Conclusion.....	18-19



INTRODUCTION:

On April 17, 2016, Governor Tom Wolf signed Senate Bill 3 to legalize the medical use of cannabis in Pennsylvania. The bill allowed the use of medical marijuana by patients with a physician's approval for treatment of 17 qualifying conditions. It also established a state-licensed system for the distribution of medical marijuana to patients. The Senate Bill 3 passed the House by a 149-46 vote and the Senate 42-7.

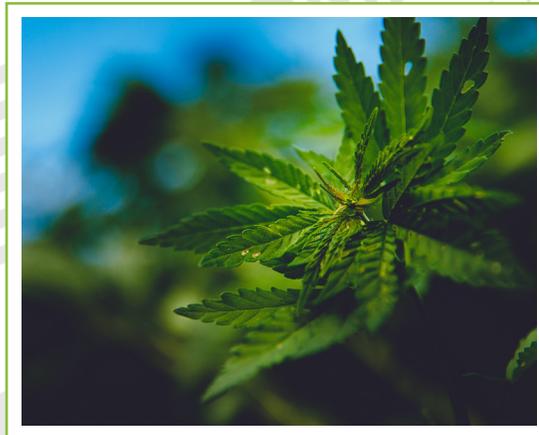
Since the state of Pennsylvania initiation of their medical marijuana program, there have been (approximately) over 225,000 patients registered for

the state program, with close to over 175,000 certifications issued to date, and over 1,000 physician practitioners registered on the state medical marijuana physician registry.

These numbers show the robust and rapid acceptance and growth of the Pennsylvania Medical Marijuana Program, and also point to the need for continued and improved patient-based support services and resources.

The goal of this retrospective data collection analysis is to gather information, from a patient-based perspective, regarding the Pennsylvania State Medical Marijuana program from its inception through late 2019. This information and data, provided directly by the patients the state medical marijuana program is serving, is paramount to the programs continued success and growth.

Since the program has commenced, a systematic survey and analysis from a patient perspective as suggested above has not yet been conducted. In order to meet this need, Compassionate Certifications (CCC), a medical cannabis healthcare system headquartered in Pennsylvania, and Affinity Bio Partners (ABP), a clinical research organization also based in Pennsylvania, have collaborated to develop a patient based survey to measure the patient's feedback regarding their participation in the Pennsylvania Medical Marijuana program utilizing AI Health Outcomes, CannaBot™ electronic patient reported outcomes (ePRO) technology.



Within the following pages we have provided not only the raw data in its most basic and transparent form, but as clinical providers who serve tens of thousands of medical cannabis patients in Pennsylvania, we have also provided our assessment and analysis. All of this information is presented without sponsorship, cost, or

bias, and the information presented from the survey results and data analysis are as was provided by the patients themselves. The purpose of this data collection and analysis is not to point fingers or provide congratulations; rather it is to provide information that can assist with the continued growth and development of the Pennsylvania Medical Marijuana Program, and also provide a platform for further research and data collection, in particular from the patient perspective. We sincerely hope that you find this information informative and useful and we welcome any feedback you may provide.

PA'S 23 QUALIFYING CONDITIONS

- » Amyotrophic lateral sclerosis
- » Anxiety Disorders
- » Autism
- » Cancer, including remission therapy
- » Crohn's Disease
- » Damage to the nervous tissue of the central nervous system (brain-spinal cord) with objective neurological indication of intractable spasticity, and other associated neuropathies.
- » Dyskinetic and spastic movement disorders
- » Epilepsy
- » Glaucoma
- » HIV / AIDS
- » Huntington's Disease
- » Inflammatory Bowel Disease
- » Intractable Seizures
- » Multiple Sclerosis
- » Neurodegenerative Diseases
- » Neuropathies
- » Opioid use disorder for which conventional therapeutic interventions are contraindicated or ineffective, or for which adjunctive therapy is indicated in combination with primary therapeutic interventions
- » Parkinson's Disease
- » Post-traumatic Stress Disorder
- » Severe chronic or intractable pain of neuropathic origin or severe chronic or intractable pain
- » Sickle Cell Anemia
- » Terminal illness
- » Tourette Syndrome

BACKGROUND:

To date, the Pennsylvania Medical Marijuana Program provides access to medical marijuana for patients with specific medical conditions. Currently, Pennsylvania's Medical Marijuana Program has 23 qualifying conditions. See page prior for full listing of qualifying conditions.

Currently, medical marijuana in Pennsylvania is available in the forms/routes of administration as listed below. It is important to note, that as of late 2019, medical cannabis cannot be smoked (must be vaporized or nebulized via inhalation route), and traditional edibles (such as gummies, brownies, etc.) are not approved or available in the Pennsylvania Medical Marijuana Program. Approved medical marijuana preparations in the state of Pennsylvania include:

- » Oral preparations: including pills, oils, tinctures, and concentrates
- » Inhaled preparations: in forms that are medically appropriate for administration by vaporization or nebulization (for example dry leaf or concentrates)
- » Topical preparations: including creams, lotions, gels, and patches.

Concerning the lead investigating agencies, Compassionate Certification Centers is headquartered in Pittsburgh, Pennsylvania and has 10 medical cannabis offices throughout the state of Pennsylvania. CCC operates as a medical cannabis healthcare network, providing not only medical marijuana certifications and patient support services, but also actively participating in medical cannabis related research and having their own line of medical grade CBD products. To date CCC has provided evaluations and continued treatment services to over 20,000 medical cannabis patients in the state of Pennsylvania.

ABP is headquartered in Chester Springs, Pennsylvania with an office in Campbell, California, is a Clinical Research Organization (CRO) that provides best in class services while maintaining a personal approach. ABP works within the traditional biotechnology/pharmaceutical industries as well as Medical Cannabis and CBD industries.

AI Health Outcomes is an artificial intelligence technology company that has developed the first AI Bots; CannaBot™, DrBot™, an AI Patient Recruitment tool to assist with clinical research enrollment and other software offerings.



METHODOLOGY:

This study was designed as a retrospective data collection and analysis with subjects being current (or past) patient participants in the Pennsylvania Medical Marijuana Program. A total of forty-three (43) patient questions were developed by the study team and lead clinicians, with input also provided by actual state registered patients. The questions, by design, provided a wide range of variance, assessing parameters including (but not limited to) demographics, product selection and use, preferred route of administration, cost assessment, and dispensary experience. All questions were designed to provide data points and assessment from a patient perspective.

Accessing an adequate number of active medical marijuana patients in Pennsylvania was accomplished with the help of Compassionate Certification Centers and their network of over 15,000 medical cannabis patients in Pennsylvania. Through this vehicle, only patients with confirmed medical marijuana certifications, as issued through the physicians at Compassionate Certification Centers, were contacted to participate in this study. Those patients who chose to participate were guided to a secure, online, cloud-based system and the survey was provided to all of the study participants through the CannaBot™. The survey was offered to patients for approximately a two (2) month time period in late 2019.

FINDINGS:

As outlined above, the survey was offered directly to approximately 17,000 Pennsylvania Medical Marijuana program participants with a total of 2079 patients responds (approximate 12% response rate). Patient responses to all forty-three (43) survey questions are listed below in their entirety, with discussion points preceding.

Per the data points mentioned below 49% were Females and 42% were Male participants in the survey. The race majority of the patients that answered the survey were Caucasian at 86%. The majority age range captured with these patients were 45-54 years old at 30.5%. The majority education that the patients achieved per the survey was a 2-year college degree at 42%. The majority qualifying condition for the patients that completed the survey was Chronic Pain at 36.53%, with PTSD following at 23.95% patients diagnosed.

Of the patients surveyed, 58.59% utilized medical cannabis prior to the Pennsylvania Medical Marijuana Program. The patients surveyed responded that 45.79% are utilizing oral products while 44.35% of the patients are vaping, 41.46% of the patients surveyed are consuming medical cannabis/CBD 2-5 times per day, 39.92% of the patients utilize the medical cannabis recommended by the Pharmacist at the Dispensary, 63.73% of the patients surveyed have been able to find a strain that is effective for them. 55.03% of the patients surveyed have identified products that contain THC are the most effective for their utilization. 99.62% of the patients surveyed were able to reduce pain, better sleep, less anxiety, less seizures, appetite increase, less vomiting, nausea, addiction withdrawal symptoms, decrease with muscle spasms, improved energy and less seizures. 56.04% of the patients did not have any negative medical cannabis effects.

Dispensary Interaction:

85.24% of the patients felt that they are always treated with courtesy and respect at the dispensary. 76.05% of the patients surveyed felt that they dispensary bud-tender/wellness associate listened carefully to them. 74.22% of the patients surveyed stated that during their visits to the dispensary, the bud-tender/wellness associate explained things in a matter that could be understood. 73.30% of the patients surveyed stated that the dispensary understood the Pennsylvania Medical Marijuana Program. 38.91% of the patients surveyed answered that the budtender/wellness staff are able to make a recommendation of the most effective product to use based on the patient’s symptoms. 20.01% of the patients stated that the products that they need to consume are available at the dispensary for purchase. 87.59% of the patients that were surveyed had to go back to the dispensary 1-5 times to get the proper medical cannabis or CBD that was effective to treat their symptoms.

Medical Cannabis/CBD Products

45.31% of the patients surveyed feel that the medical cannabis and CBD products are expensive. 93.70% of the patients surveyed think that the growers/processors are making quality medicine and 39.36% of the patients surveyed selected Ilera Healthcare as preferred grower over the other growers asked in the survey.

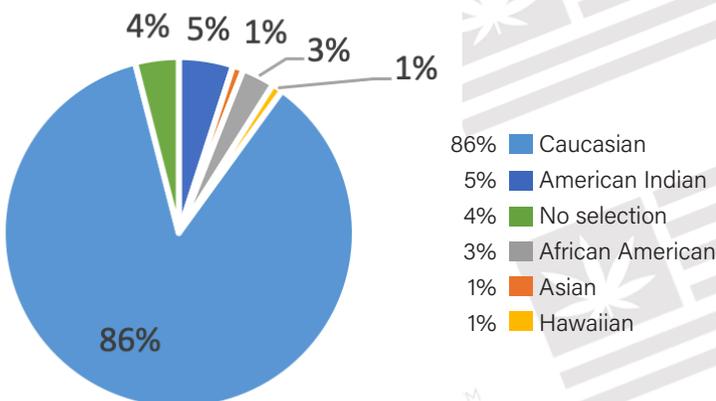
Patient Symptom Management

80.04% of the patients have been using medical marijuana for pain management. 49.54% responded with an 8-10 rating for their ability to be able to reduce/manage their pain using Medical Marijuana. The patients surveyed were able to reduce their pain medications by 75%-100%. 81.02% of the patients made only 1-3 claims on their personal insurance for their diagnosis which shows a decrease in insurance claims and doctor’s visits.

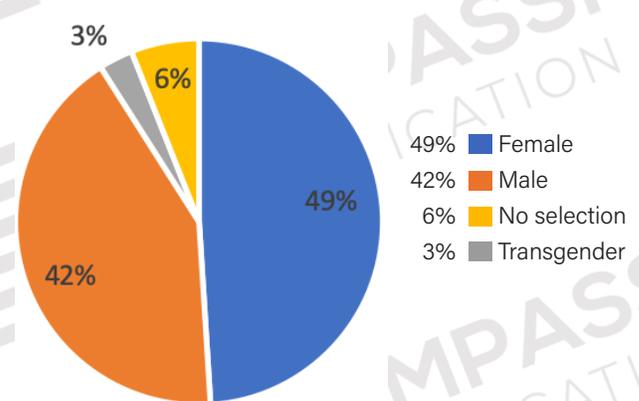
Overall Pennsylvania Medical Marijuana Program feedback

76.33% of the patients provided an overall rating of an 8-10 with respect to the patient experience in the Pennsylvania Medical Marijuana Program. 74.46% of the patients would recommend the program to their friends and family. 76.24% of the patients have had an impact on their lives based upon their participation in the Pennsylvania Medical Marijuana Program. The individual questions with the results are mentioned below.

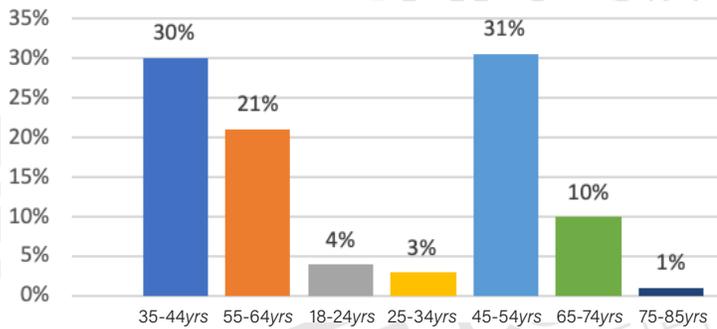
What is your race?



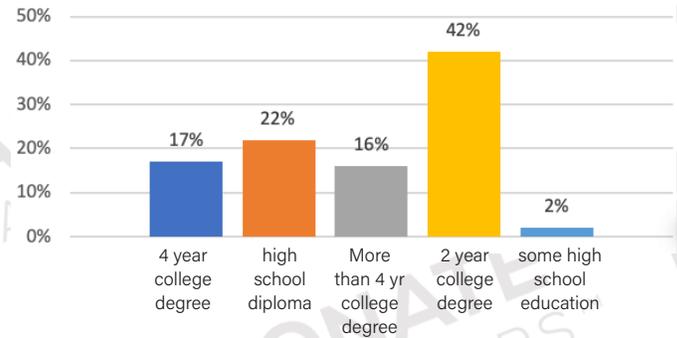
What is your gender?



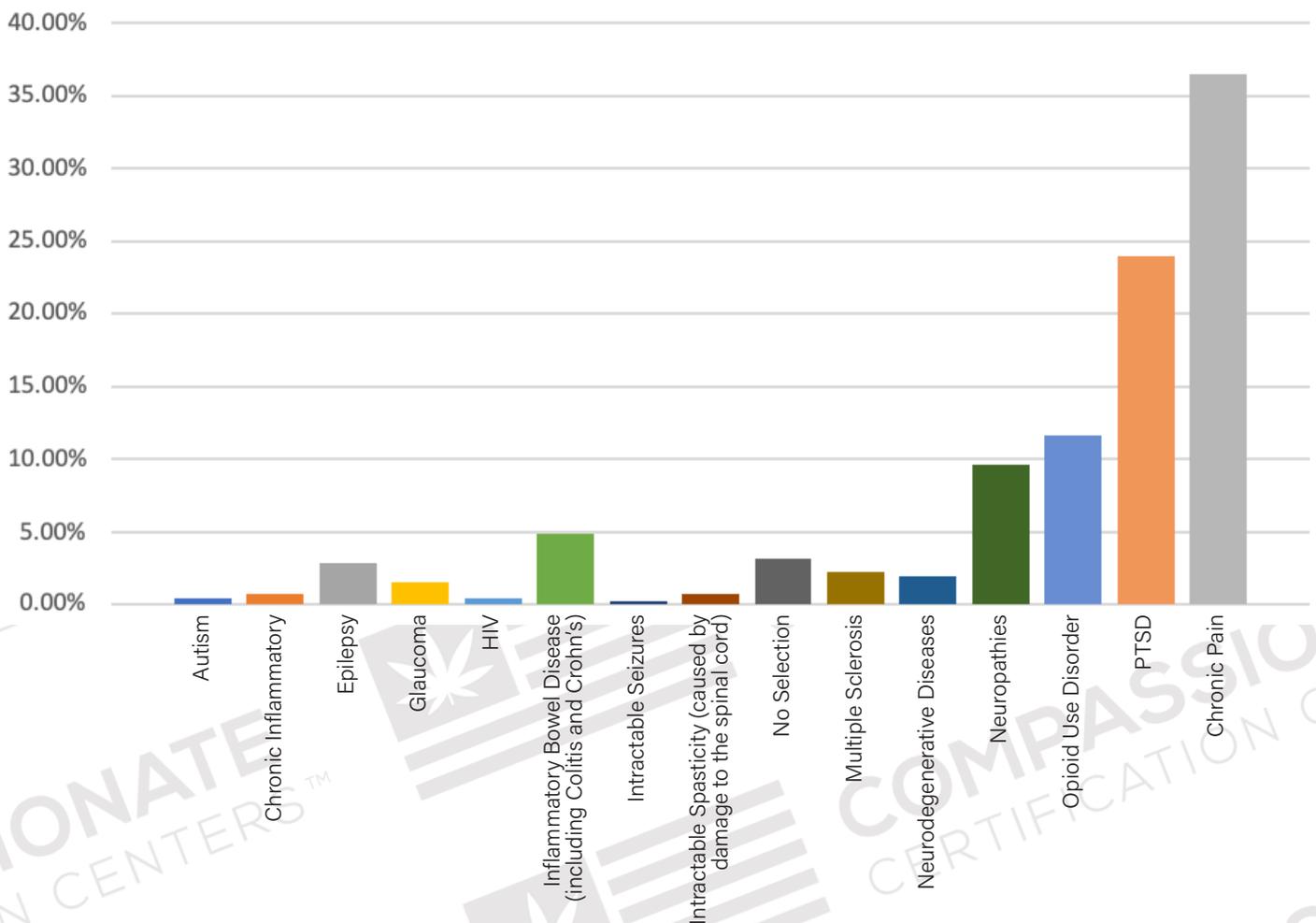
What is your age?



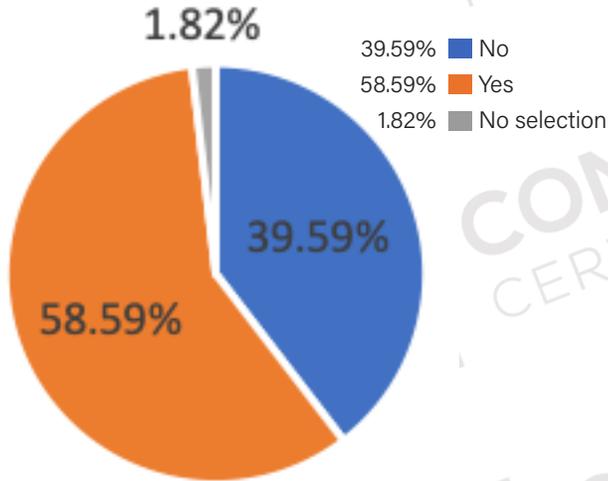
What is the highest grade or level of school that you have completed?



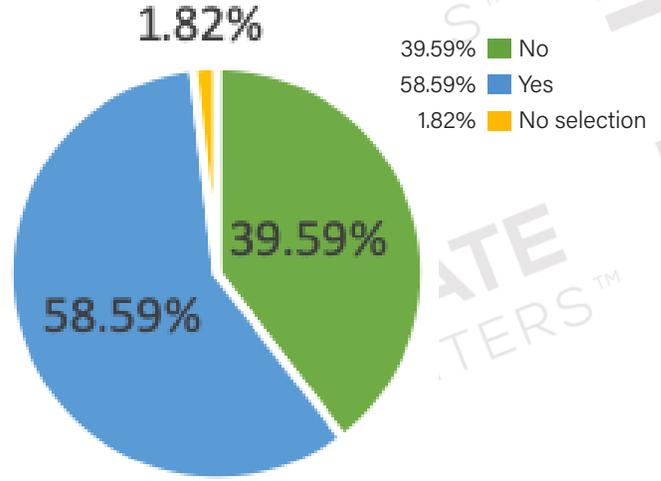
What is your qualifying condition?



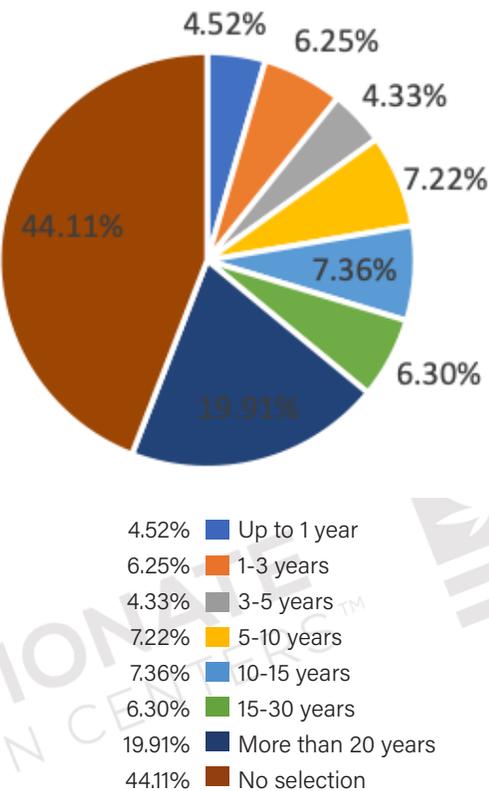
Did you use medical marijuana prior to receiving your Pennsylvania marijuana patient card?



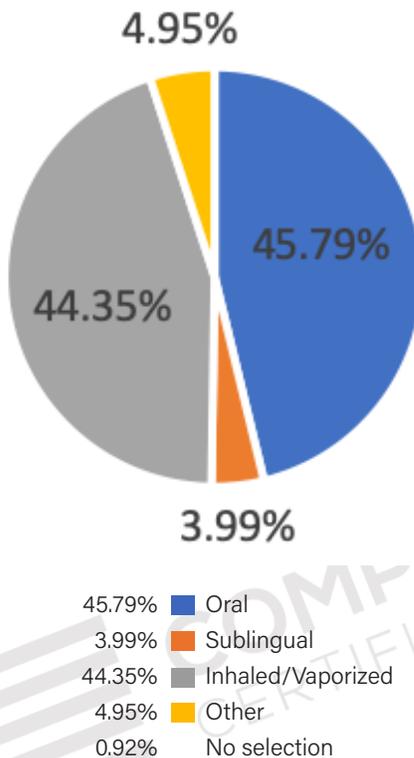
When you used medical marijuana prior to receiving your PA medical marijuana patient card, was it as a patient in another state program or recreation?



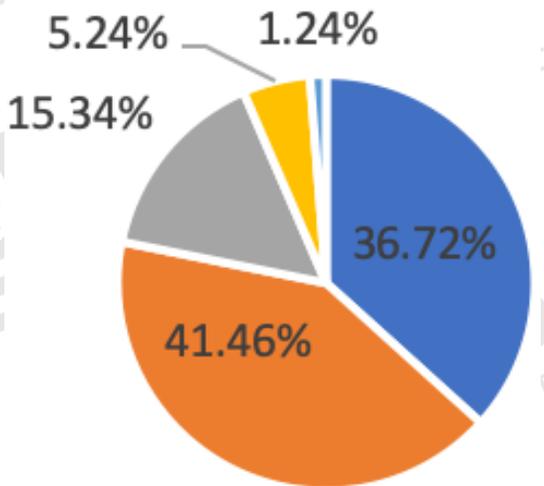
How long have you used cannabis before having your PA medical marijuana patient card?



Which form/route of medication administration do you prefer?

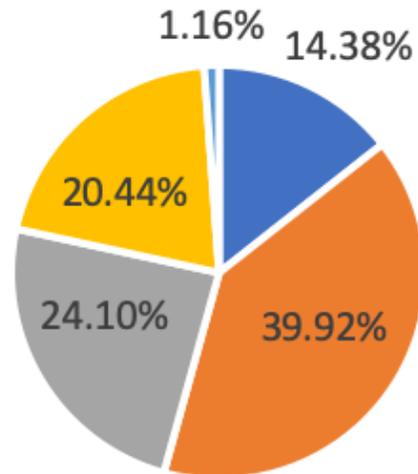


How many times do you use cannabis per day?



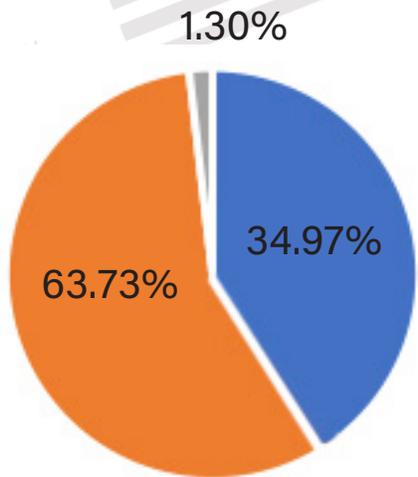
- 36.72% 2 times per day
- 41.46% 2-5 times per day
- 15.34% 5-10 times per day
- 5.24% More than 10 times per day
- 1.24% No Selection

How do you choose which form/type of cannabis to use?



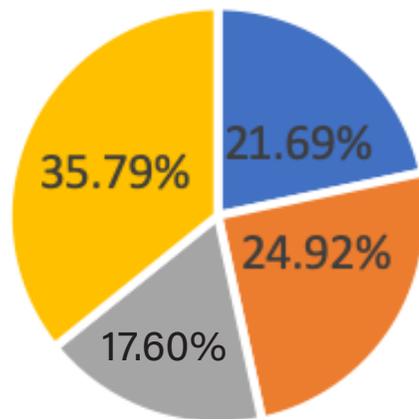
- 14.38% CBD: THC Ratio
- 39.92% Recommendation by the Pharmacist
- 24.10% Strain
- 20.44% Terpenes
- 1.16% No Selection

Do you have a strain you find most effective?



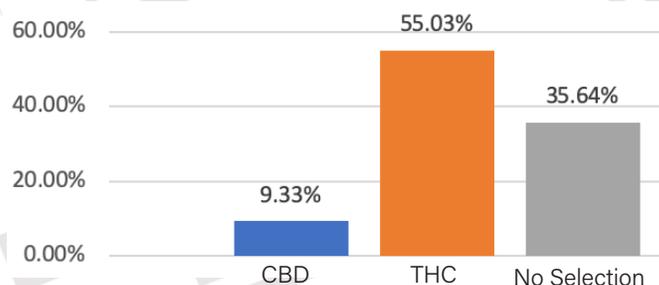
- 34.97% No
- 63.73% Yes
- 1.30% No Selection

Which type of strain do you find most effective?



- 69% Hybrid
- 92% Indica
- 60% Sativa
- 79% No Selection

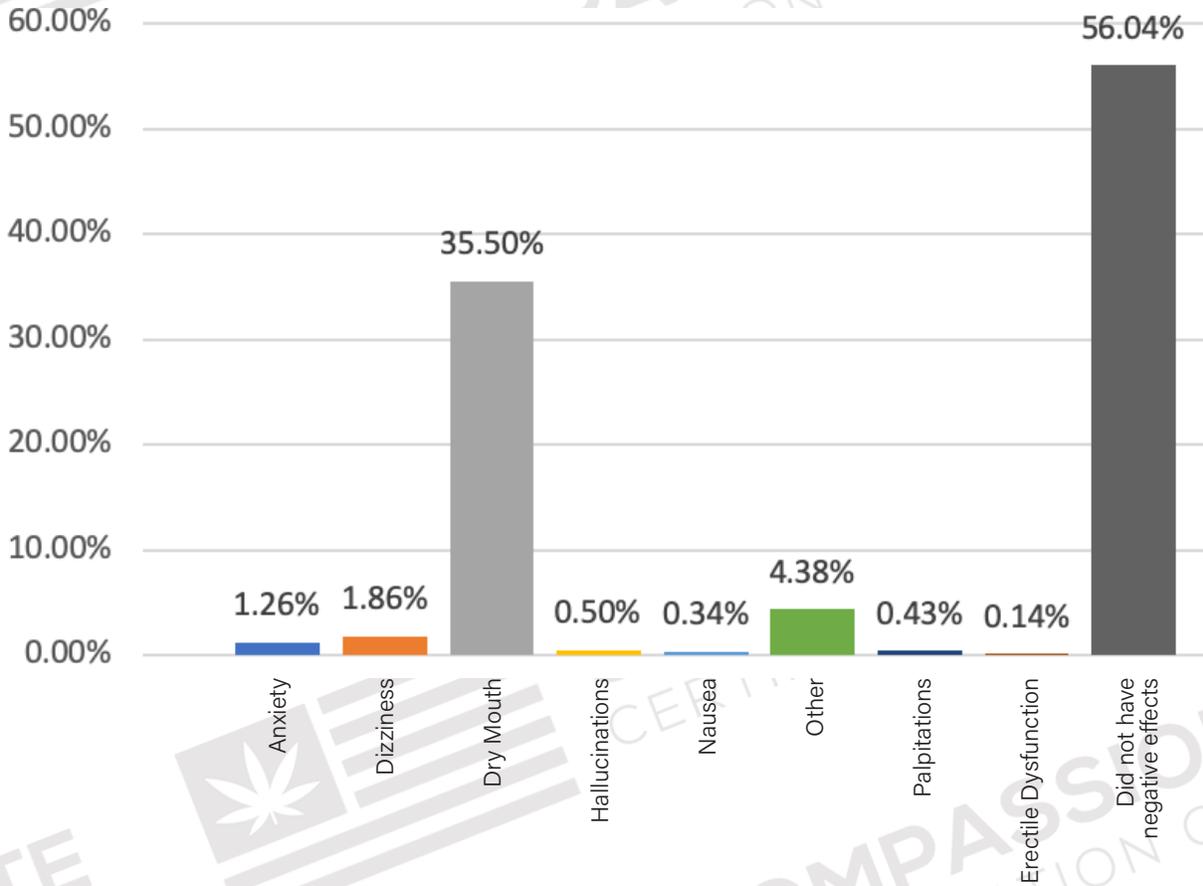
Is this strain more CBD or THC dominant?



Please select your positive effects associated with using this strain.

99.62% were able to reduce pain, better sleep, less anxiety, less seizures, appetite increase, less vomiting, nausea, addiction withdrawal symptoms, decrease with muscle spasms, improved energy and less seizures
.38% No Selection

Please select your negative effects associated with using this strain.



During your visits to a dispensary, how often did the dispensary front office staff treat you with courtesy and respect?

85.24% Always
.82% Never
2.21% Sometimes
10.29% Usually
1.44% No Selection

During your visits to a dispensary, how often did the dispensary bud-tender/wellness associate listen carefully to you?

76.05% Always
.96% Never
3.85% Sometimes
17.65% Usually
1.49% No Selection

During your visits to a dispensary, how often did the dispensary bud-tender/wellness associate explain things in a way you could understand?

- 74.22% Always
- 1.49% Never
- 5.44% Sometimes
- 17.41% Usually
- 1.44% No Selection

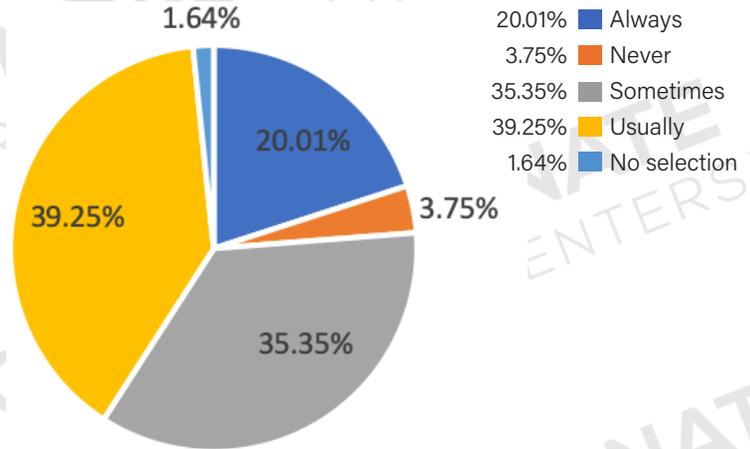
During your visits to a dispensary, how often do you think the staff understands the PA MMJ program?

- 73.30% Always
- 1.06% Never
- 5.82% Sometimes
- 18.61% Usually
- 1.21% No Selection

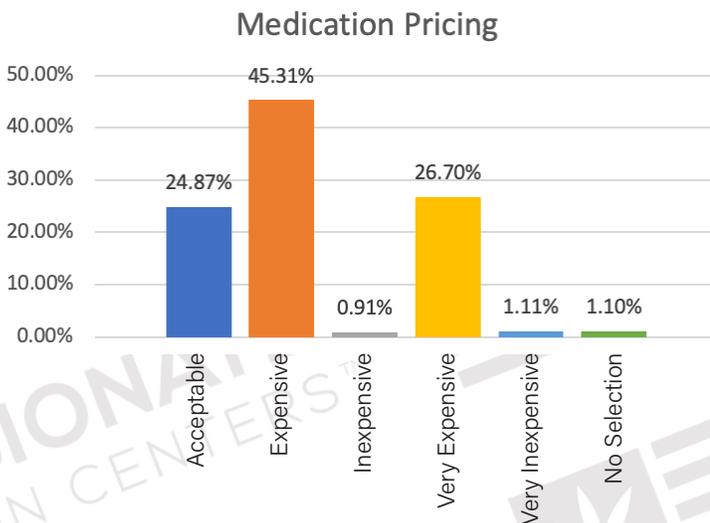
During your visits to a dispensary, how often did the bud-tender/wellness associate make a medicine recommendation based on your symptoms?

- 38.91% Always
- 6.45% Never
- 25.30% Sometimes
- 27.80% Usually
- 1.54% No Selection

During your visits to a dispensary, how often did they have the medicine that you wanted in stock?



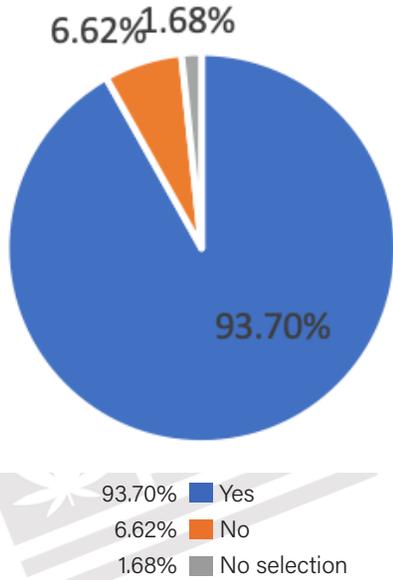
During your visits to a dispensary, what did you think about the pricing of the medicine?



During your visits to a dispensary, how open was the staff to receiving feedback regarding the medicine that they recommended?

- 61.33% Always
- 4.62% Never
- 9.67% Sometimes
- 22.46% Usually
- 1.92% No Selection

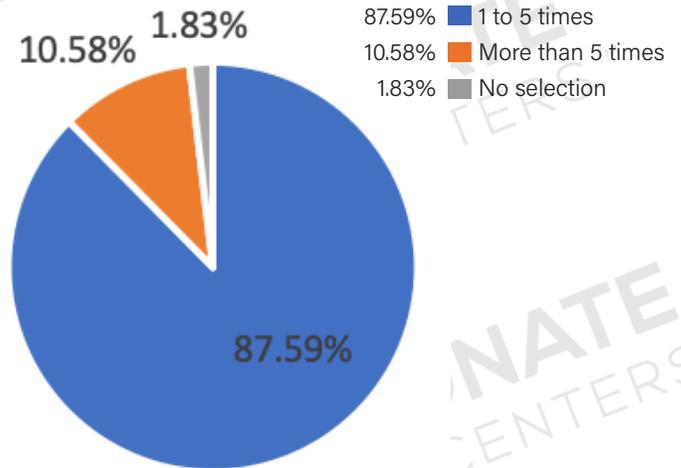
Do you think that the growers/processors are making quality medicine?



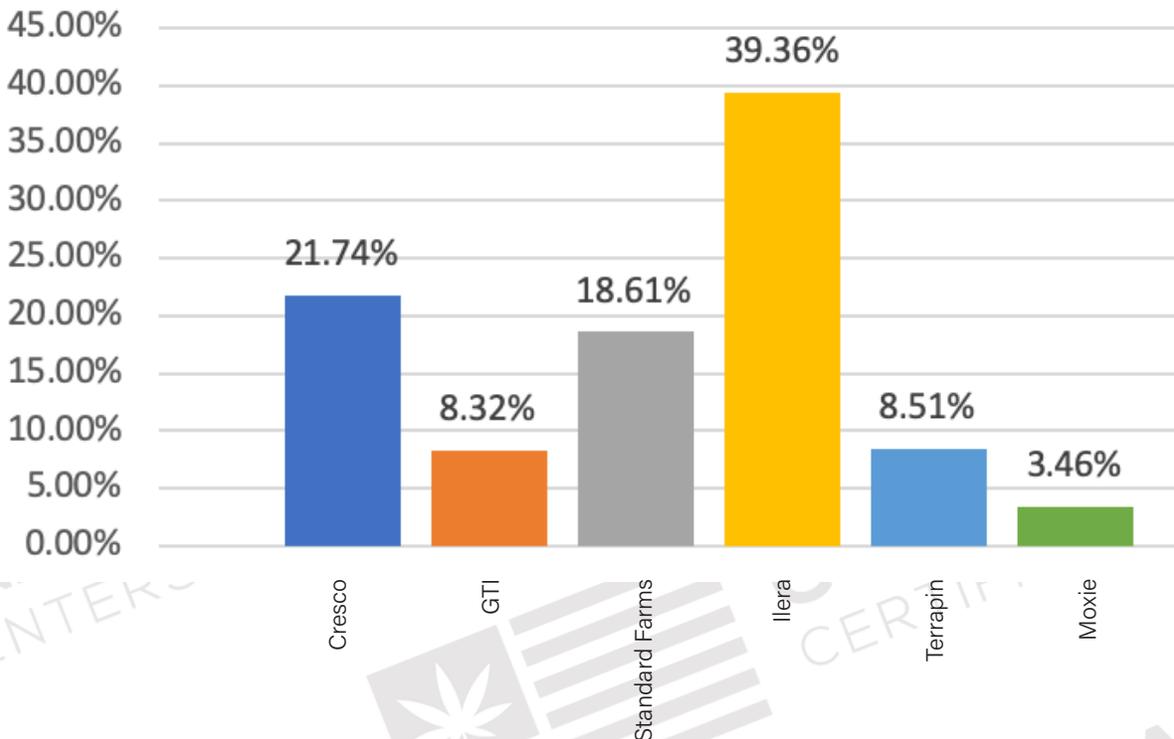
Do you think that the growers/processors use the best packaging and medicine application?

74.27% Yes
23.95% No
1.78% No Selection

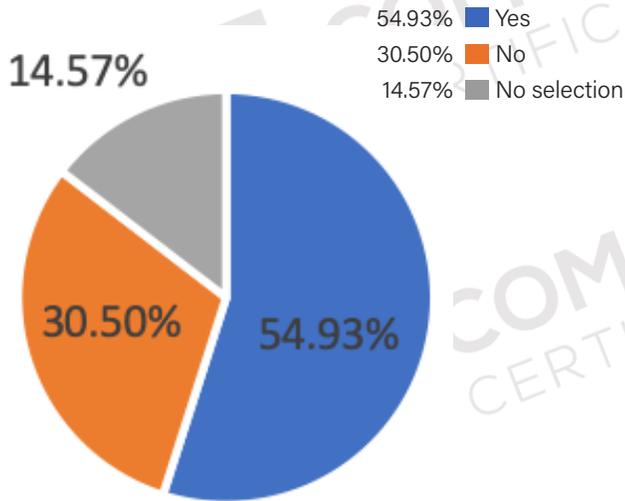
How many times did you receive medicine that did not work for you?



Which grower's product do you like the best?



During your visits to a dispensary, did you speak to one of the Pharmacists?



During your visits to a dispensary, how often did the dispensary pharmacist treat you with courtesy and respect?



During your visits to a dispensary, how often did the dispensary pharmacist listen carefully to you?



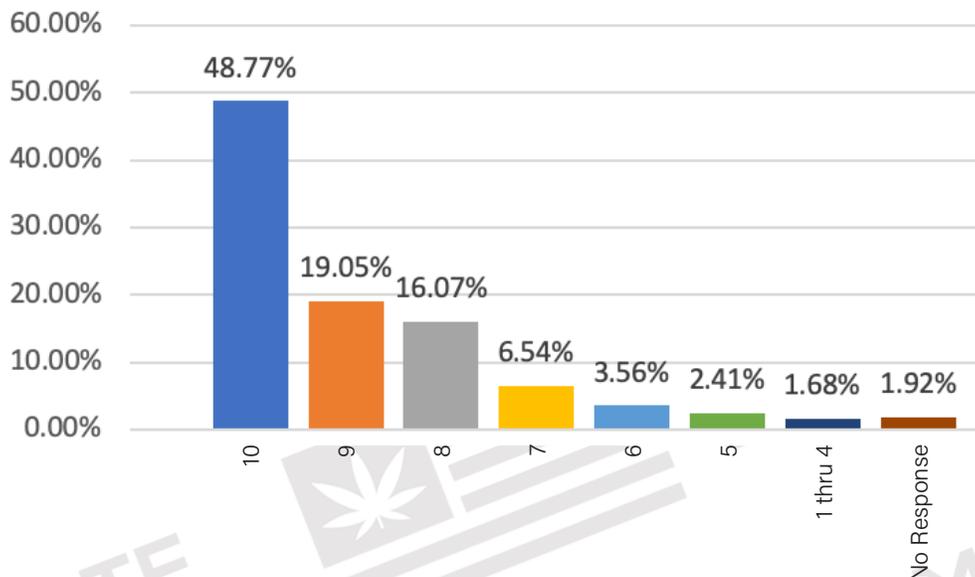
During your visits to a dispensary, how often did the dispensary pharmacist explain things in a way you could understand?



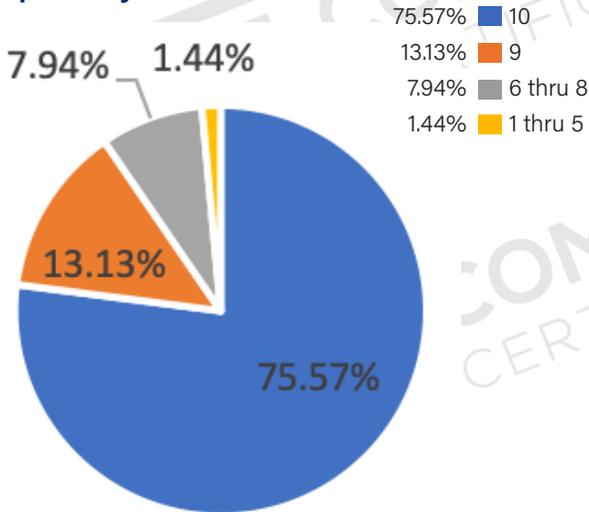
During your visits to a dispensary, how often did the dispensary pharmacist understand the qualifying conditions and associated symptoms?



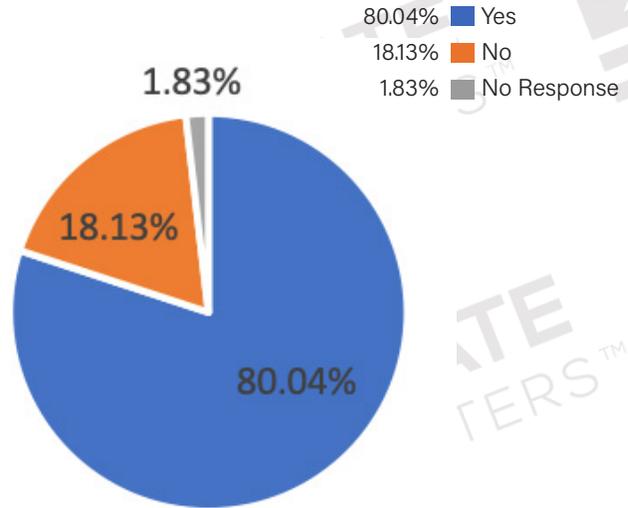
How would you rate the overall knowledge of the staff, at your primary dispensary (1-10)?



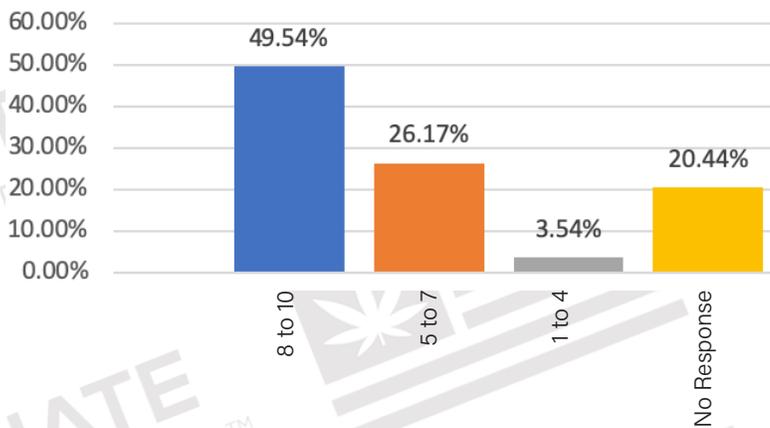
How would you rate the cleanliness/quietness and overall safety of your primary dispensary?



Have you been using medical marijuana for Pain Management?



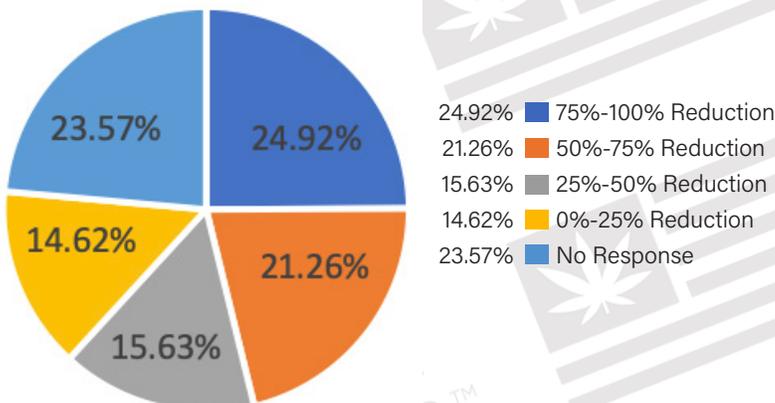
How would you rate how well you have been able to reduce/manage your pain using Medical Marijuana?



List other medications that you may be on for pain (i.e. opioids, NSAIDs, Gabapentinoids)

- .34% Biologics
- 4.52% Gabapentinoids
- 26.60% NSAIDS
- 19.67% Opiates
- 7.84% Acetaminophen (Tylenol), Topical Preparations (Bengay, etc.), Injections (cortisone, trigger points), Physical modality (e-stim, acupuncture, etc.)
- 5.82% Unable to reduce pain medications
- 35.21% No Response

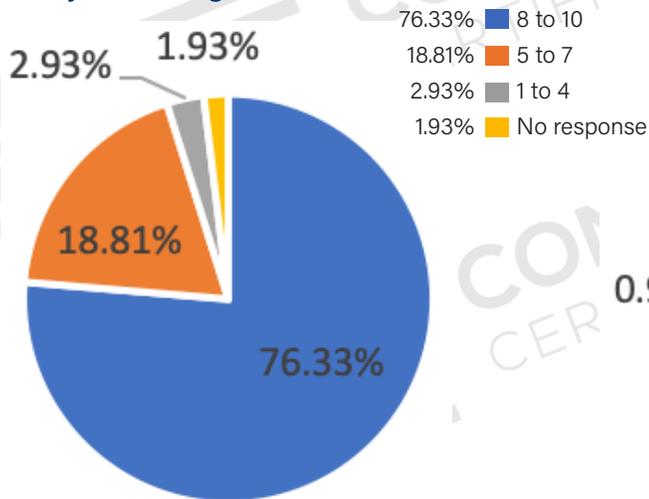
What percentage decrease were able to reduce your pain medications?



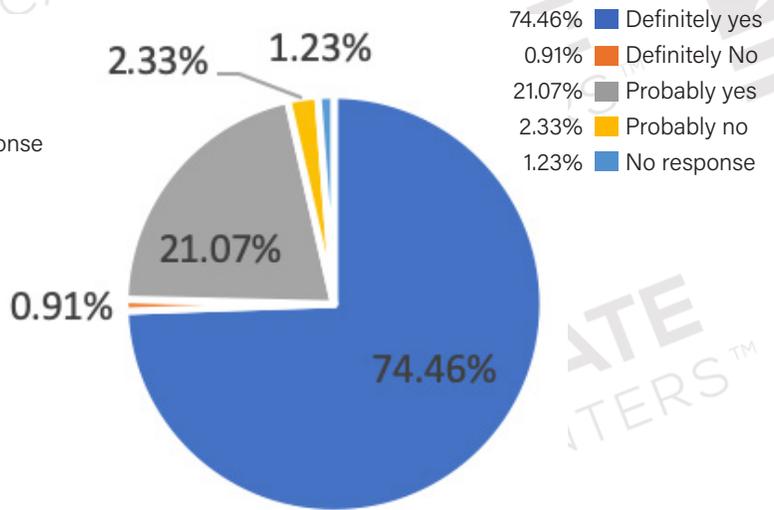
Since you started taking medical marijuana, how many times have you had to make a claim on your insurance?

- 81.02% made claims 1-3 times
- 13.47% made claims 3-6 times
- 5.51% No Response

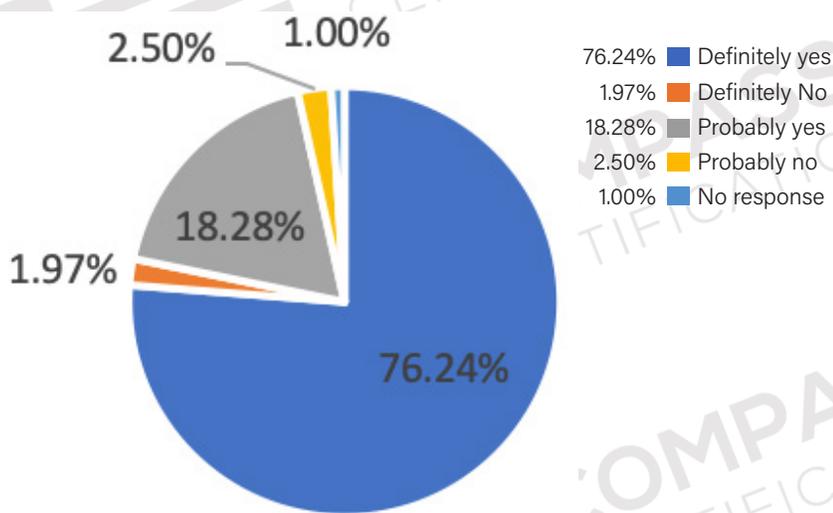
How would you rate your overall patient experience with the Pennsylvania Medical Marijuana Program?



Would you recommend the Pennsylvania Medical Marijuana Program to your friends and family?



Has medical marijuana made an impact on your quality of life?



DISCUSSION:

In close examination of the data points above, the investigators and study writers believe there are numerous prudent points of discussion. For the purposes of time, listed below are some of the points our investigators feel warrant the most immediate discussion and closer examination, and evaluated on a brief by question grouping basis.

From a demographic standpoint, as expected, there was an approximately equal number of male and female participants. However, when examining race, respondents were overwhelmingly Caucasian, accounting for 86% of patient responses. Likewise, when evaluating age range of patients, some outliers were apparent statistically. Specifically, the age ranges of 18-34 (7%) and 75-85 (1%) seemed particularly low with the overwhelming majority of patients (approx. 81%) falling between the ages of 35-65 years of age. As noted within the data collection, this survey did not focus on pediatric medical marijuana patients, but this is obviously an area of great and specific need that should be examined in detail moving forward.

When examining the qualifying conditions there are some notable trends that can be manifested from the data points. As expected, the most common qualifying condition is chronic pain, and if neuropathy is included within the "pain" category as well, this accounts for approximately 47% of patient certifications. The second most common qualifying condition was PTSD at almost 24%. This will be an interesting statistic to continue to follow now that Anxiety has been added as a qualifying condition and if this will affect the number of patients certified for medical marijuana under the PTSD diagnosis. As a final point, as investigators, we did find a few numbers surprisingly lower than expected. In particular, Autism (less than 1%) and Intractable Seizures with Epilepsy (approx. 3% combined) stood out to our investigative team as lower than anticipated.

There appeared to be a relatively equal distribution with respect to patients having prior experience with cannabis in the past. Interestingly, when examining how long patients have used cannabis prior to the PA MMJ program, the by far highest response rate was for those patients who have consumed cannabis for more than 20 years, at almost 20%. However, it should be noted, for this data point in particular, there was a very high no response rate with approximately 44% of respondents with no selection.

Results of the types, frequency, strains, etc. of the medical marijuana products used also show some interesting and useful data points. When including sublingual in the oral route of administration, we can see that it is a relatively even mix between inhaled/vaporized forms (44%) and oral/sublingual routes (49%) being used. This will be another interesting data point to follow moving forward considering the recent negative health consequences that have been associated with vaping.

Patients overwhelmingly (approximately 78%) responded using their medical marijuana medications between 1 to 5 times per day which seems appropriate regarding different routes of administration and their associated onsets and duration of action. The largest group of patients (almost 40%) chose their medications based on pharmacist recommendation with the different strains of cannabis (Indica 24.92%, Sativa 17.60%, Hybrid 21.69%) being relatively close with respect to usage. Most patients responded with a preferred THC dominant component at 55%. Again, the approximately 34 to 36% no selection response on these two survey questions could potentially negatively

affect data accuracy. Of particular note, patient responses regarding positive effects of their preferred strain were overwhelming in nature, with an almost total (99.62%) agreement that they experienced at least one of the positive effects listed. Finally, when examining the most common adverse effects experienced, these appeared to fall in line with historical data, with the most common adverse effect overwhelmingly being Dry Mouth at over 35%. Of particular note, more than half of the respondents (56%) reported no adverse effects at all with the medical marijuana intake.

When examining patients experiences and reports with regard to their dispensary interactions, there appears to be a very positive theme of responses. Responses were essentially in the majority 70-75% range regarding reporting positive interactions with dispensary staff, including pharmacists, as well as pharmacy safety and layout. Likewise, patients overwhelmingly reported that growers/processors are producing quality medications, at almost 94%, with Ilera (39.36%) being the Grower/Processor patients reported liking the best. Conversely, with respect to medication availability and pricing, responses appeared to trend in the expected direction. Product availability responses varied significantly, but patients were in overwhelming agreement regarding the cost of medications, with approximately 76% of patients reporting they felt their medication was Expensive to Very Expensive.

Moving onward, even higher than expected, over 80% of patients reported using medical marijuana for some type of pain management. Very encouraging results were also obtained when noting that almost 50% of patients taking medical marijuana for pain management reported an 8-10 reduction (the highest possible) in their pain symptoms/management. Additionally, as a follow up question, almost 50% of patients reported being able to reduce/eliminate their previous pain medications by 50-100%, which is indeed impressive and dramatic.

Finally, in examining the study itself, as with all research of this type, there are obviously limitations and potential biases that need to be taken into account. A few brief points in addition to what is outlined above. From a geographic standpoint, the overwhelming majority of patients who participated in this survey were from the Western and Central parts of Pennsylvania, with the Eastern part of the state (and largest population density) likely under represented. Additionally, from a demographic standpoint, as pointed out above, 86% of the participants were Caucasian in race, which obviously points to a lack of diversity in subject participation. Based off study design, the survey questions at times have ranges that result in lack of specificity, and full statistical analysis needs to be performed in order to understand study power and significance.

CONCLUSION:

During its first two years since inception, the Pennsylvania Medical Marijuana Program has grown exponentially, now encompassing hundreds of thousands of patients across the state. Patient response and participation in the program has been tremendous thus far, and appears to be poised to continue on this path into the future. However, with this robust participation comes many questions, and problems can and will arise. In order to try and answer these questions and avoid these problems, research will serve an indispensable role. Research can be done in many forms, and the goals of this study were to initiate a large scale, state wide data collection survey which focused on the

patients, and their unique perspectives over the first two years. This data is critically important, as all state medical marijuana programs are designed for the patients, and we all need to better understand these patients' desires and needs. The data collected in this study is not meant to point fingers or dish out blame. Rather, it is for us all to try and get a better understanding of how patients feel about their state's medical marijuana program, and what we as providers, clinicians, advocates, and agencies can do to improve our states medical marijuana program. This data can be shared, analyzed, and even further scrutinized, all in the name of helping to improve the medical marijuana program and making it better for the patients. We encourage everyone to continue to pursue medical marijuana research, whatever shape or form it will take, and we sincerely hope that you find the data in this white paper to be useful and help lead the way for future projects and ideas.



PUBLISHED DECEMBER 2019

PENNSYLVANIA MEDICAL MARIJUANA PROGRAM—

Patient perspectives over the first two years

