

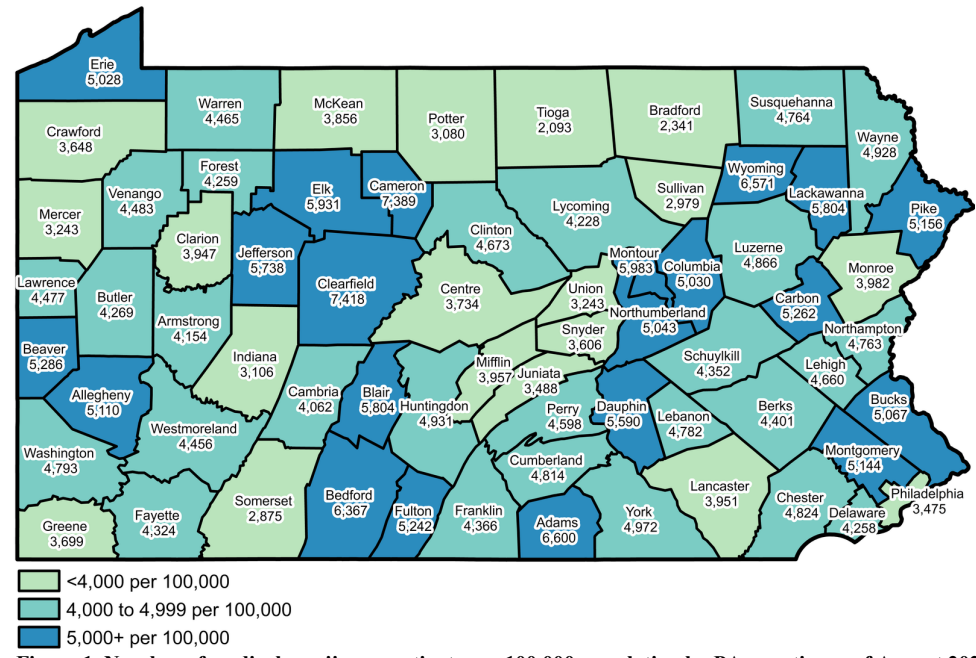
Marijuana in Pennsylvania: Update on access, use, arrests, and perceptions

State Epidemiological Outcomes Workgroup, 2022

Medical Marijuana in Pennsylvania

In 2016, Pennsylvania became the 24th U.S. state to legalize marijuana for medical use.¹ Medical marijuana in Pennsylvania is regulated by the Medical Marijuana Act (Act 16) signed into law on April 17, 2016, which established Pennsylvania's Medical Marijuana Program.² Patient applications became available from November 2017 and the first medical marijuana dispensaries opened in February 2018. Medical marijuana in Pennsylvania is offered in the form of plant/leaf, pill, oil, topical forms (e.g., gel, creams, or ointments), tincture, liquid, or a form medically appropriate for administration by vaporization or nebulization; edibles are not permitted. On June 30, 2021, PA Act 44 amended Act 16 by providing additional benefits for medical marijuana patients and caregivers.³ As of March 2022, 740,757 patients and caregivers have registered with PA Medical Marijuana Program.⁴

Patients, dispensaries, and approved practitioners



As of August 2021, 595,336 people⁵ representing 4.6% of the PA population⁶ were medical marijuana patients. **Figure 1** depicts the county-level density of medical marijuana patients calculated as the number of patients per 100,000 population. About half of PA counties (34 of 67) had a density of patients above the statewide average rate of 4,579 patients per 100,000 population. Clearfield and Cameron had the highest patient density, at 7,418 and 7,389 patients, respectively, per 100,000 population. Bradford and Tioga were two counties with the lowest patient density: 2,341 and 2,093 per 100,000 population, respectively.

Figure 1. Number of medical marijuana patients per 100,000 population by PA counties as of August 2021
Source: Finnerty, J., August 20, 2021⁵

As of August 2021, PA had 131 dispensaries in operation. About 9% (53,293) of patients resided in 29 PA counties without dispensaries, all of them rural,⁵ **Figure 2**. Among 38 PA counties with dispensaries, Washington County had 7 times as many patients per one dispensary as Butler County (10,034 and 1,379 patients respectively). Overall, the Southwest and Southeast regions had a higher concentration of dispensaries than other PA regions. Clearfield and Cameron, two counties in Northwest PA with the highest patient density in the state, had one and zero dispensaries, respectively.

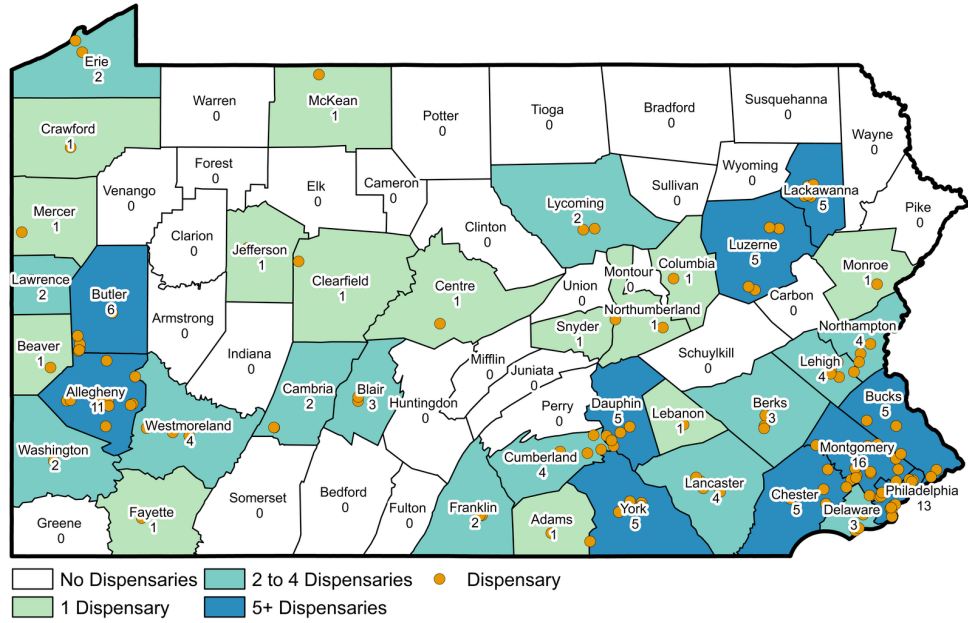


Figure 2. Medical marijuana dispensaries by PA counties as of August 2021
Source: Pennsylvania Department of Health, Pennsylvania Medical Marijuana Program

As of March 2022, 1,779 practitioners⁴ were approved to qualify medical marijuana patients, with offices across 60 PA counties.⁷ In response to the COVID-19 emergency, the requirement of in-person medical consultation to obtain or renew a medical marijuana certification was lifted to allow for remote consultations.³

Between May 2020⁸ and March 2022⁴

32%

The number of practitioners approved to certify patients increased from 1,349 to 1,779

33%

The number of patient certifications issued by approved practitioners increased from 306,291 to 406,454

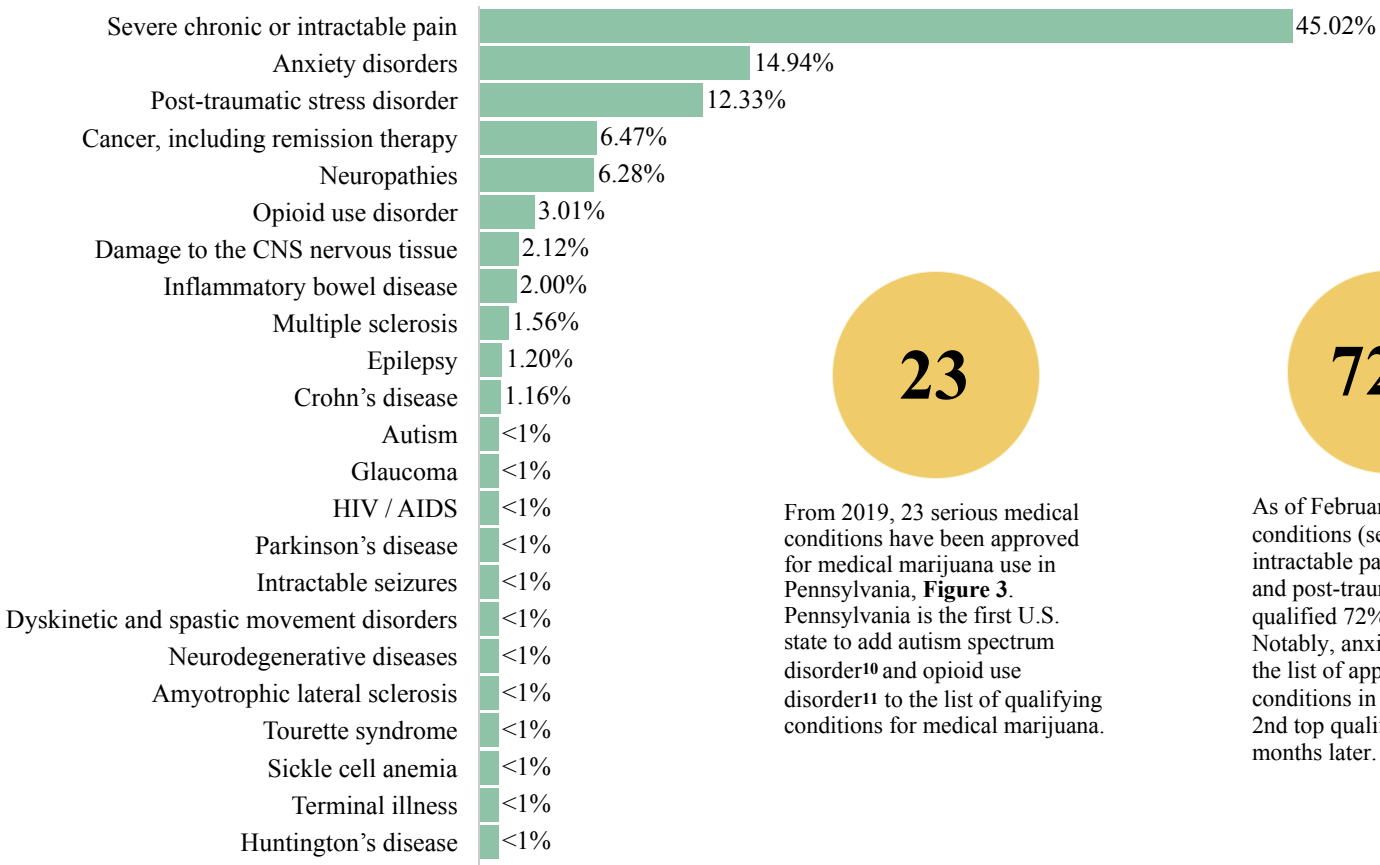
94%

The number of operational dispensaries increased from 80 to 155

Medical Marijuana in Pennsylvania

State Epidemiological Outcomes Workgroup, 2022

Qualifying medical conditions



23

From 2019, 23 serious medical conditions have been approved for medical marijuana use in Pennsylvania, **Figure 3**. Pennsylvania is the first U.S. state to add autism spectrum disorder¹⁰ and opioid use disorder¹¹ to the list of qualifying conditions for medical marijuana.

72%

As of February 2020, three conditions (severe chronic or intractable pain, anxiety disorders, and post-traumatic stress disorder) qualified 72% of patients, **Figure 3**. Notably, anxiety disorders, added to the list of approved serious medical conditions in July 2019, became the 2nd top qualifying condition 7 months later.

Figure 3. Prevalence of serious medical conditions approved for medical marijuana in Pennsylvania as of February 2020

Source: Medical Marijuana Advisory Board Presentation, February 13, 2020⁹

Medical marijuana research

Pennsylvania became the first U.S. state to establish a research program to study the effectiveness of medical marijuana for serious medical conditions.² Under Act 16, the program involves research partnerships between academic clinical research centers (ACRCs) and clinical registrants - entities that hold both a grower/processor and dispensary permit, **Table 1**. In 2018, 8 medical schools were certified as ACRCs; in September 2021, the Geisinger Commonwealth School of Medicine became the 9th ACRC and the 10th ACRC is to be announced.¹²

Across the research partnerships, chronic pain, anxiety, and opioid use disorder are common areas of interest for medical marijuana research.¹³ Other qualified conditions targeted by current or future research include: amyotrophic lateral sclerosis; autism spectrum disorder; cancer and cancer-related pain; HIV; inflammatory bowel disease; pediatric epilepsy; PTSD; and sickle cell disease.¹³

Table 1. Medical marijuana research partnerships as of July 2022

Academic clinical research centers	Clinical registrants
Sidney Kimmel Medical College at Thomas Jefferson University	MLH Explorations
Philadelphia College of Osteopathic Medicine	Organic Remedies
Penn State College of Medicine	PA Options for Wellness
The Perelman School of Medicine at the University of Pennsylvania	Curaleaf PA
Lewis Katz School of Medicine at Temple University	Laurel Harvest Labs
Lake Erie College of Osteopathic Medicine	CannTech PA
Drexel University College of Medicine	Agronomed Biologics
University of Pittsburgh School of Medicine	Goodblend PA
Geisinger Commonwealth School of Medicine	Story of PA

Source: Pennsylvania Department of Health, Pennsylvania Medical Marijuana Program

Medical Marijuana in Pennsylvania

State Epidemiological Outcomes Workgroup, 2022

Marijuana pricing in Pennsylvania compared to select U.S. states with legalized marijuana

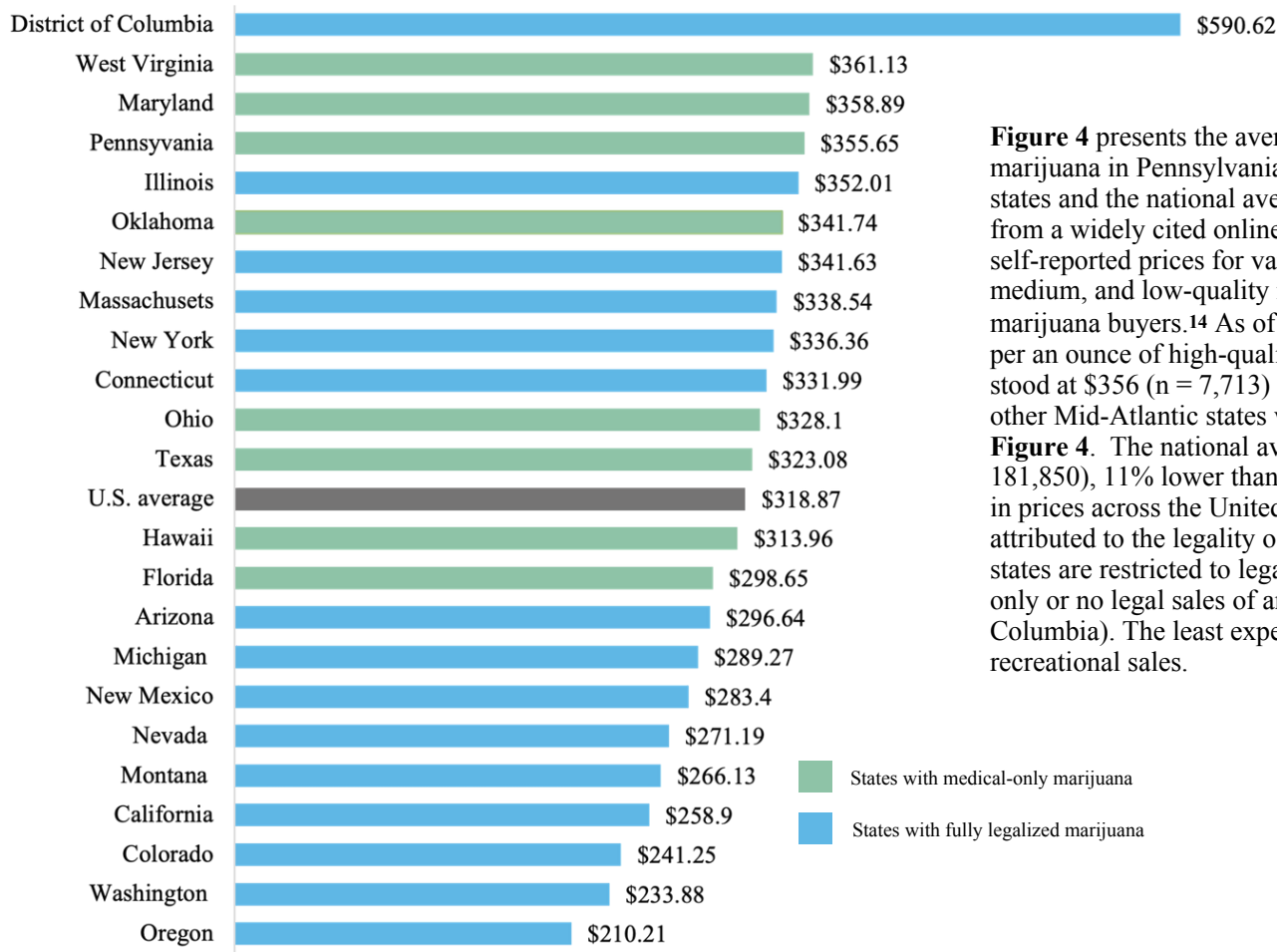


Figure 4 presents the average cost of high-quality marijuana in Pennsylvania compared to other select states and the national average. Data were obtained from a widely cited online platform, which collects self-reported prices for various quantities of high-, medium, and low-quality marijuana from thousands of marijuana buyers.¹⁴ As of April 2022, the average price per an ounce of high-quality marijuana in Pennsylvania stood at \$356 (n = 7,713) which was comparable to other Mid-Atlantic states with legalized marijuana, **Figure 4**. The national average was \$319 (n = 181,850), 11% lower than the PA price. The difference in prices across the United States can be partly attributed to the legality of sales. The most expensive states are restricted to legal sales of medical marijuana only or no legal sales of any marijuana (e.g., District of Columbia). The least expensive states all allow for legal recreational sales.

Figure 4. Average price per ounce of high-quality marijuana in select U.S. states with legalized marijuana as of April 2022

Source: Price of Weed – a Global Price Index for Marijuana¹⁴

Retail price of dry leaf medical marijuana and operational dispensaries in Pennsylvania

From January 2020 - February 2022, retail prices per gram of dry leaf marijuana have dropped 14% (from \$15.67 to \$13.40) in response to a two-fold increase in the number of operational dispensaries (77 to 155),⁴ **Figure 5**.

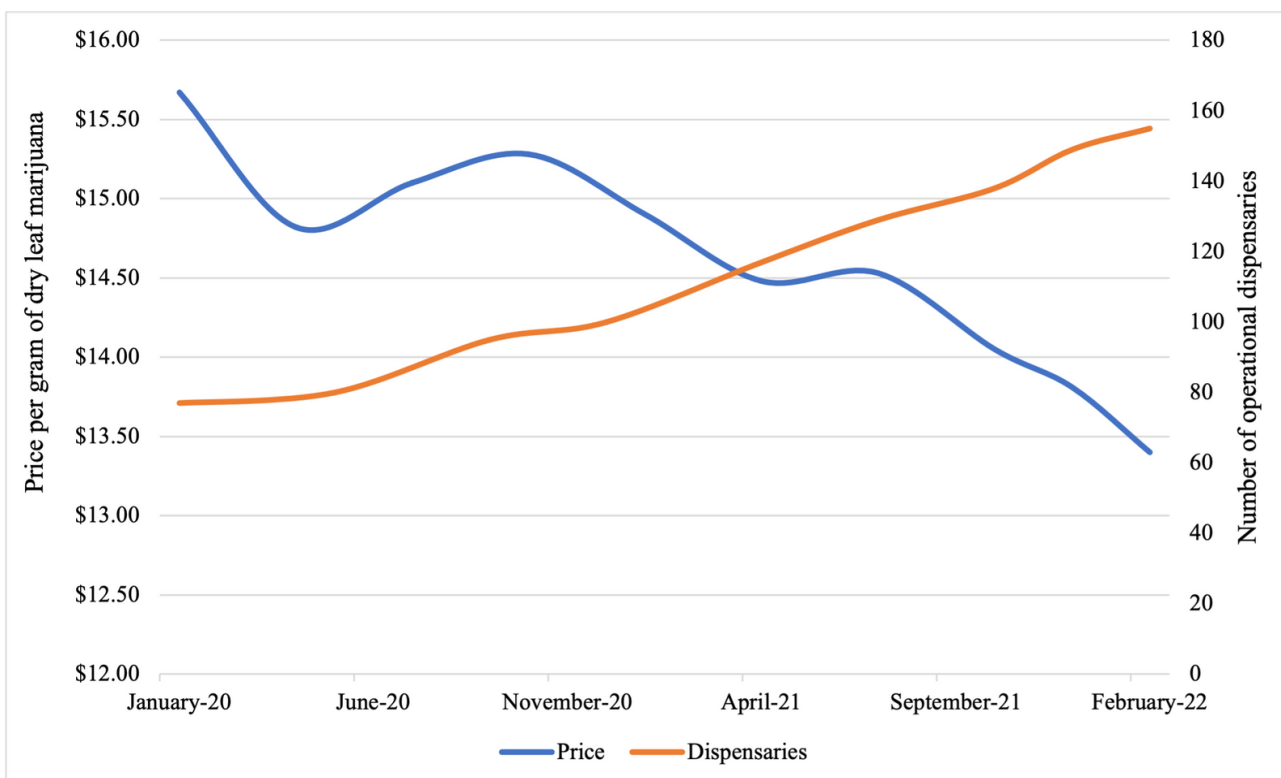


Figure 5. Retail price per gram of dry leaf medical marijuana and operational dispensaries in PA, January 2020 – February 2022

Source: Medical Marijuana Advisory Board Presentation, March 22, 2022⁴

Recent use, willingness to try, perceived risk, and risky behaviors among youth

State Epidemiological Outcomes Workgroup, 2022

Recent marijuana use

Figure 6 examines trends in recent (30-day) marijuana use among adolescents aged 12-17, young adults aged 18-25, and adults aged 26 years and older in Pennsylvania compared to California, Ohio, and the United States on average. California was the first U.S. state to allow medicinal marijuana use (1996) and Ohio legalized medical marijuana the same year as Pennsylvania (2016). During 2013-2019, recent marijuana use remained relatively steady among adolescents across the three states and the U.S on average, but increased in the other age groups. In Pennsylvania, recent marijuana use among adolescents decreased from 6.8% in 2013 to 6.1% in 2019, which is slightly lower than the national average of 7.0% in 2019. Among PA young adults, recent marijuana use increased from 19.0% in 2013 to 19.8% in 2019, though this is lower than the national average of 22.5% in 2019. Similarly, recent marijuana use among Pennsylvania adults aged 26 years and older increased from 4.3% in 2013 to 8.7% in 2019 however this is below the national average of 9.4% in 2019, **Figure 6**.

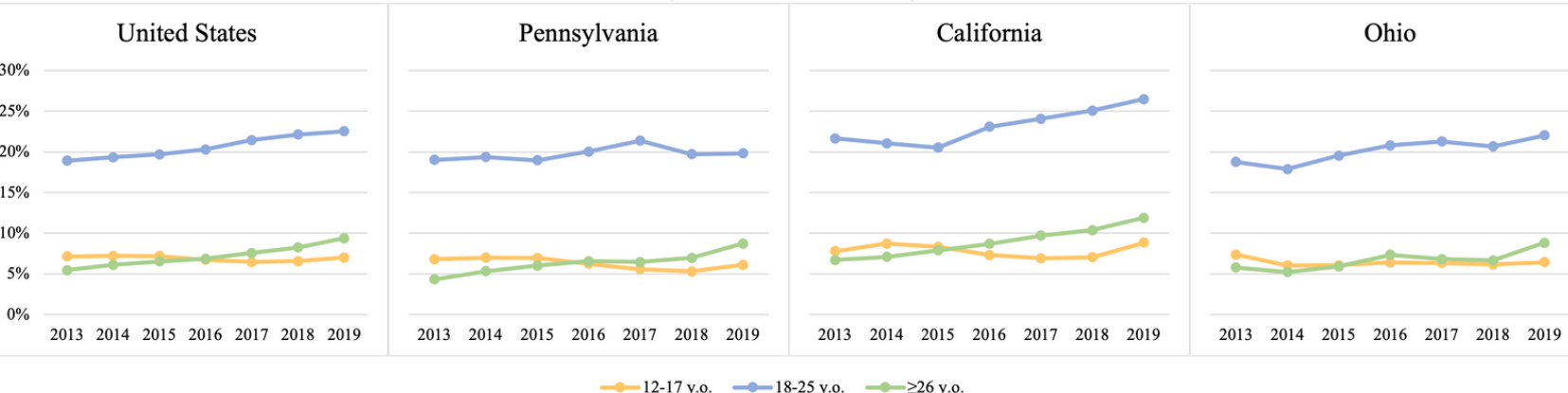
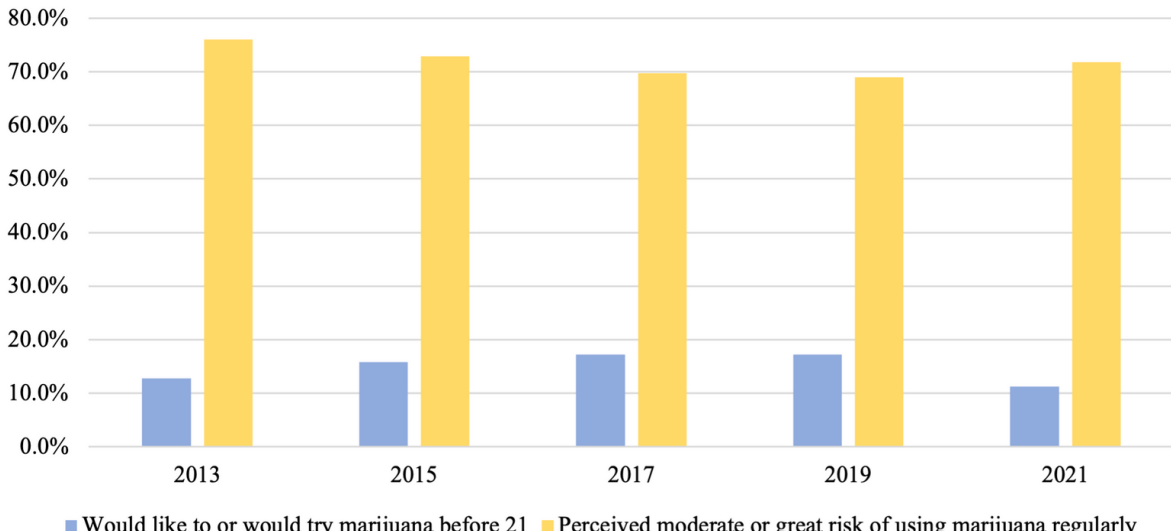


Figure 6. Past 30-day use of marijuana among adolescents aged 12-17, young adults aged 18-25, and adults aged 26 years and older in the United States, Pennsylvania, California, and Ohio
Source: National Survey on Drug Use & Health

Willingness to try and perceived risk



According to the Pennsylvania Youth Survey — a biennial survey of school students in 6th, 8th, 10th, and 12th grades in the Commonwealth — willingness to try marijuana before 21 increased from 12.8% in 2013 to 17.2% in 2019, then dropped to 11.2% in 2021. The perceived risk of harm from using marijuana regularly fell from 76.0% in 2013 to 69.0% in 2019, then rose to 71.8% in 2021, **Figure 7**.

Figure 7. Willingness to try marijuana before 21 and perceived risk of using marijuana regularly among PA youths
Source: Pennsylvania Youth Survey¹⁵

Driving under the influence of marijuana

Table 2. Driving while or shortly after using marijuana among PA grade 12 students

	2013 (%)	2015 (%)	2017 (%)	2019 (%)	2021 (%)
Before, not in the past year	3.0	2.5	2.5	2.1	1.4
Once or twice in the past year	5.0	4.5	4.3	3.6	2.3
Once or twice in the past month	3.1	2.8	2.6	2.2	1.4
Once or twice in the past week	2.0	1.7	1.7	1.6	0.9
Almost every day	2.2	2.3	2.0	1.8	1.3

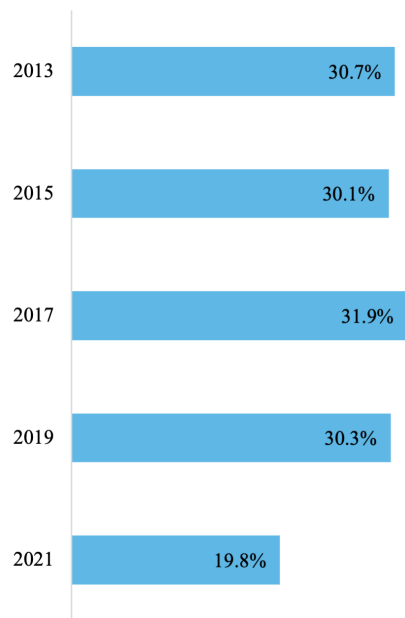
A decline in self-reported driving under the influence of marijuana is observed from 2013 to 2021 among 12th graders in Pennsylvania, **Table 2**.

Source: Pennsylvania Youth Survey¹⁵

Peer use, perceived availability, and norms of marijuana use among youth

State Epidemiological Outcomes Workgroup, 2022

Peer use



Peer use of marijuana remained relatively constant from 2013-2019: About 3 in 10 students reported having at least one best friend who used marijuana in the past 12 months. In 2021 though only about 2 in 10 students reported peer marijuana use, **Figure 8**. During the same period, approving attitudes toward peer marijuana use increased from 9.3% in 2013 to 10.7% in 2019, then dropped to 7.5% in 2021. In the opposite direction, strongly disapproving attitudes fell from 60.7% in 2013 to 52.2% in 2019, then increased to 61.9% in 2021, **Figure 9**.

How do you feel about someone your age using marijuana once a month or more?

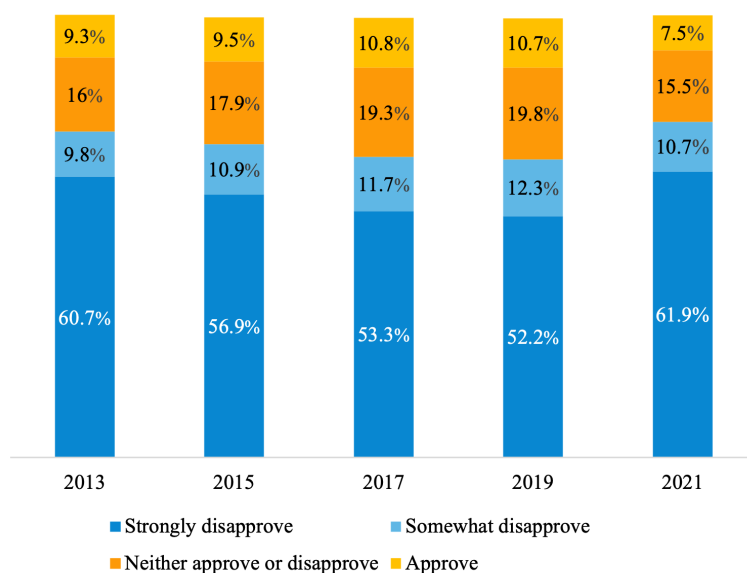
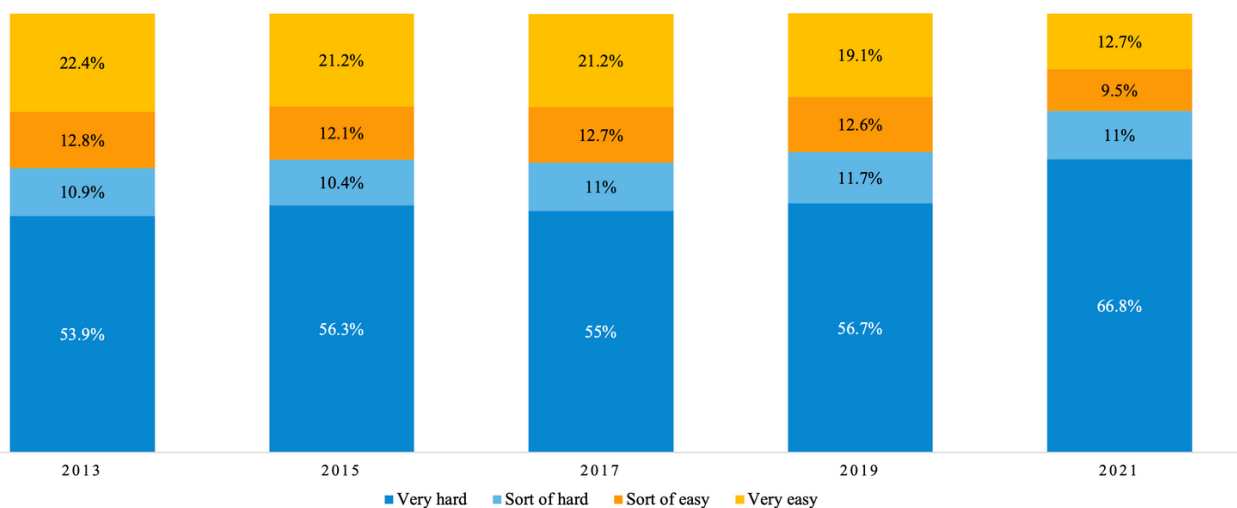


Figure 8. Percent of PA youths with at least one best friend who used marijuana in the past 12 months
Source: Pennsylvania Youth Survey¹⁵

Figure 9. Attitudes toward peer use of marijuana among PA youths
Source: Pennsylvania Youth Survey¹⁵

Perceived availability

How easy would it be for you to get any, if you wanted to get any, marijuana?

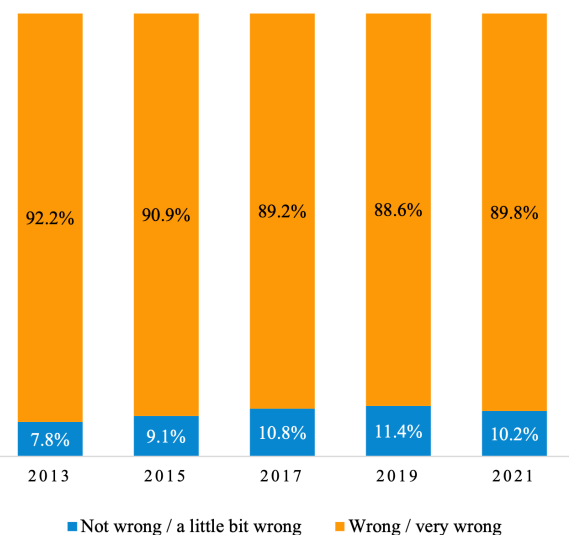


Perceptions about the difficulty of acquiring marijuana (“very hard”) increased from 53.9% in 2013 to 66.8% in 2021 among students. The perceived ease of obtaining marijuana (“very easy”) dropped from 22.4% in 2013 to 12.7% in 2021, **Figure 10**.

Figure 10. Perceived availability of marijuana among PA youths
Source: Pennsylvania Youth Survey¹⁵

Social norms

How wrong do your parents feel it would be for you to use marijuana?



Perceived parental disapproval of use (“wrong” or “very wrong”) initially declined between 2013-2019, then rose in 2021, **Figure 11**. Similarly, perceived community risk associated with availability of marijuana dropped between 2013-2019, then increased in 2021, **Figure 12**.

If a kid smoked marijuana in your neighborhood would he or she be caught by the police?

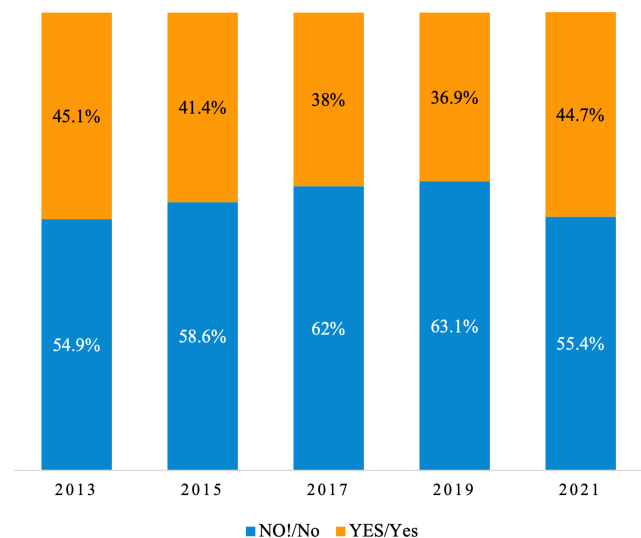


Figure 11. Perception of parental disapproval of marijuana use
Source: Pennsylvania Youth Survey¹⁵

Figure 12. Community risk associated with availability of marijuana
Source: Pennsylvania Youth Survey¹⁵

Marijuana Possession Arrests

State Epidemiological Outcomes Workgroup, 2022

Marijuana laws in Pennsylvania

Under “The Controlled Substances, Drugs, Device, and Cosmetic Act” of Pennsylvania, those found in possession can be imprisoned for up to 30 days or fined up to \$500 for possession of 30 grams of marijuana.¹⁶ Yet, 16 PA municipalities adopted local decriminalization laws, under which the possession of up to 30 grams of marijuana can be fined with \$25-100, while smoking in public carries a fine as low as \$25 to up to \$350 in some areas.¹⁷ Though these areas have locally decriminalized marijuana, it is still up to local law enforcement to follow local or state laws.¹⁷

Racial differences in marijuana possession arrests

From 2013-2021, marijuana possession arrests have declined 40.3% among Black adults and 28.7% among White adults. Among Black adults, the rates initially declined between 2013-2015, then increased through 2018. Among White adults, the rates were rising through 2018. In both groups, the rates dropped between 2018-2021, **Figure 13**.

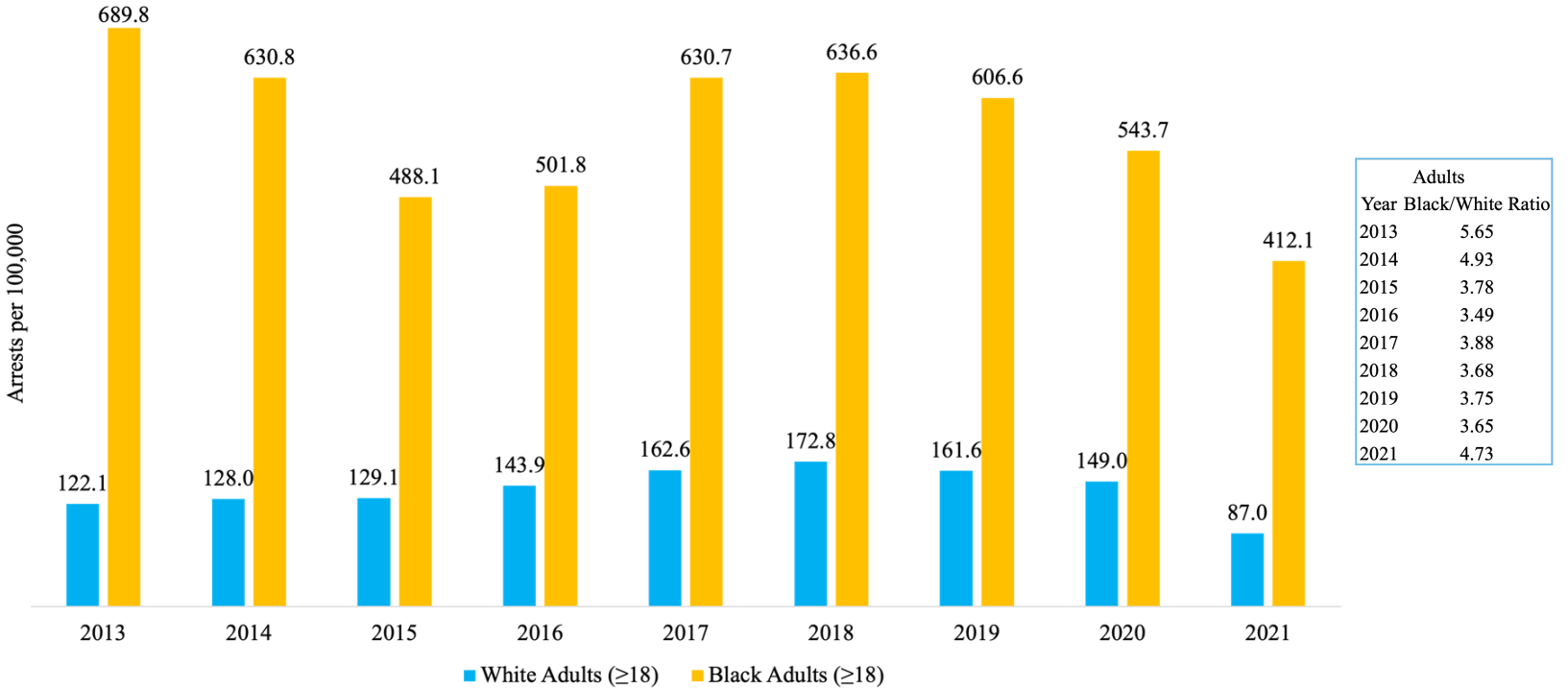


Figure 13. Rates of marijuana possession arrests among Black and White adults, 2013-2021
Sources: Uniform Crime Report, U.S. Census^{18,19}

Between 2013-2021, marijuana possession arrests have decreased 73.4% among Black juveniles and 53.1% among White juveniles. Among Black juveniles, the rates initially dropped through 2016, then rose in 2017. Among White juveniles, the rates were relatively flat through 2017. The both groups exhibited a downward trend in the arrest rates between 2017-2021, **Figure 14**.

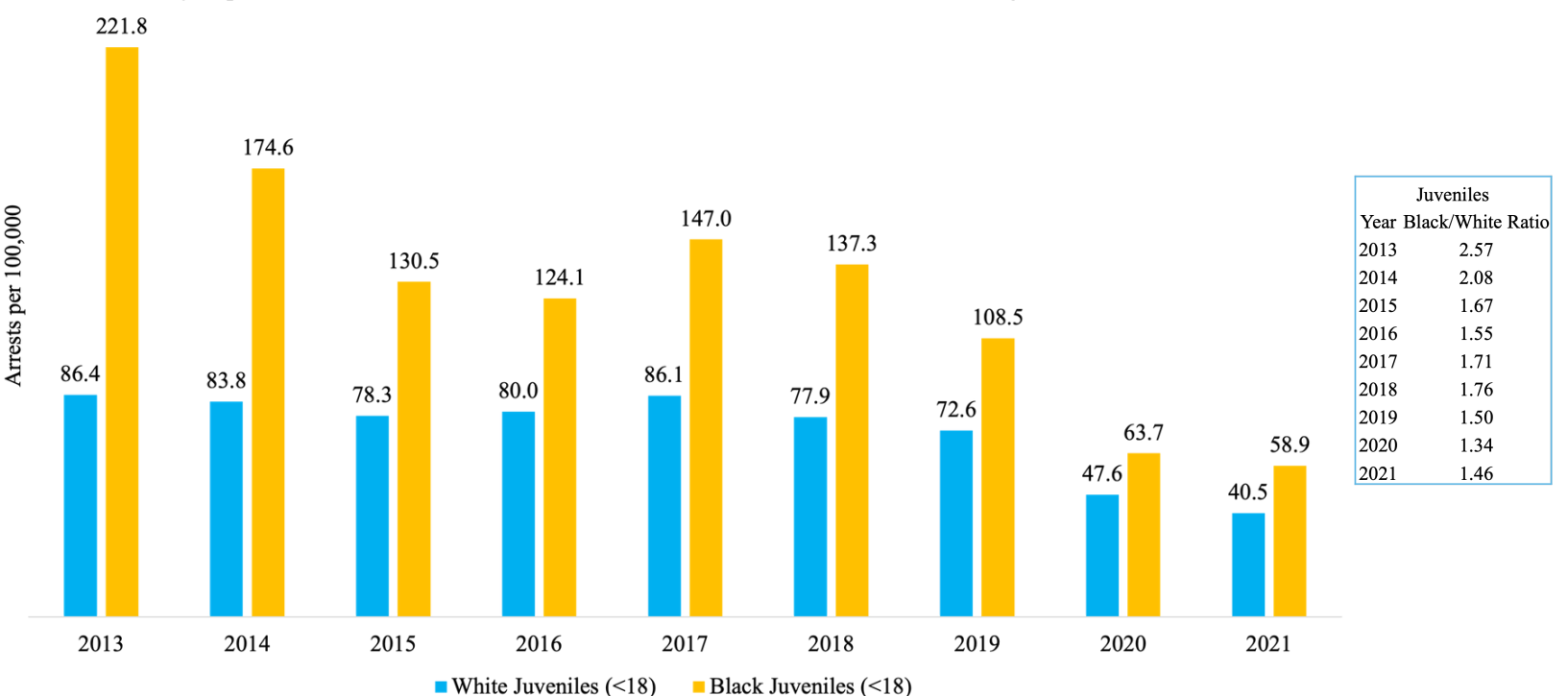


Figure 14. Rates of marijuana possession arrests among Black and White juveniles, 2013-2021
Sources: Uniform Crime Report, U.S. Census^{18,19}

Among both adults and juveniles, Black people were more likely to be arrested than White people, though the Black/White arrest gap has decreased over time.

State Epidemiological Outcomes Workgroup, 2022

Conclusion

This analysis updates the 2018 SEOW brief that examined marijuana access, use, and perceptions shortly after medical marijuana legalization in Pennsylvania.²⁰ This investigation takes into account additional years of post-legalization data, highlighting trends in demand for and access to medical marijuana, the possible effect of legalization on youth, as well as changes in marijuana arrests.

Data indicated that Pennsylvania has experienced a considerable increase in both demand for and access to medical marijuana. Over the past two years, the number of patient certifications has grown in parallel with the number of approved practitioners. The growing demand for medical marijuana treatment can be potentially attributed to the expansion of the list of qualifying health conditions, particularly adding anxiety disorders to the list in 2019. The establishment of the PA medical marijuana research program is promising, given limited evidence that marijuana or cannabinoids are an effective treatment for anxiety, PTSD, and some other health conditions reported by PA patients.²¹ The data also indicated increased access to medical marijuana in Pennsylvania as the number of medical marijuana dispensaries doubled in the past two years, accompanied by a modest drop in medical marijuana retail prices. At the same time, a sizeable proportion of medical marijuana patients have been residents of counties without dispensaries, as of 2021. The data also showed that the average marijuana price in Pennsylvania was higher than the national average, though it did not deviate from prices in the Mid-Atlantic states with legalized marijuana.

The unintended consequences of medical marijuana legalization on youth have been a key focus of this examination. From 2013 through the post-legalization period, recent marijuana use remained relatively flat among Pennsylvania's youths, though increased among younger and older adults. This finding is similar to prior studies, which found U.S. medical marijuana laws did not lead to subsequent increases in the prevalence of adolescent marijuana use.^{22,23} Yet, with the available PA data we are unable to determine if the longer-term decreasing trends in use could have been slowed or influenced by legalization. Notably, fewer youths saw marijuana easily available or reported driving after using marijuana between 2013-2021, including the post-legalization period. At the same time, attitudes toward marijuana use show a more complicated pattern. Data pointed to a trend toward greater acceptance of marijuana use among youth between 2013-2019, including increased willingness to try, greater approval of peer use, as well as decreased perception of marijuana as high-risk. Yet, from 2019 to 2021, permissive attitudes toward marijuana have declined. Ongoing surveillance is needed to determine how the COVID-19 pandemic, changing societal norms toward marijuana use and legalization are impacting youth perceptions and attitudes toward marijuana use.

Pennsylvania, along with some states, did not decriminalize marijuana possession prior to legalizing medical use, therefore racial disparities in marijuana arrests remain an ongoing concern. Between 2013-2021, both Black adults and Black juveniles had greater decline in marijuana arrest rates than White counterparts that narrowed down the Black/White arrest gap. Nevertheless, Black people in the both age groups continue to be arrested in higher rates than White people. In 2021, Black adults and Black juveniles were 4.7 and 1.5 times, respectively, more likely than White counterparts to be arrested for marijuana possession. Data also demonstrated that only Black adults and Black juveniles experienced a downward trend in arrest rates between 2013 and 2015-2016, that coincides with marijuana decriminalization in Philadelphia (2014) and Pittsburgh (2015), two most populous PA cities.¹⁷ Further monitoring is needed to understand how local decriminalization policies adopted by select PA municipalities affect racial disparities in marijuana possession arrests.

Several limitations of this report need to be noted. The examination did not involve the statistical comparison of pre-and post-legalization data that precludes drawing definitive conclusions about any effects of medical marijuana legalization in the state. Access to medical marijuana can vary by patient demographics which was not examined in the present report. The reliability of marijuana price data based on consumer reports may be limited. Finally, marijuana use and risky behavior data are based on self-reports, which could be affected by desirability bias. Nevertheless, this brief provides a useful summary of observed trends, portraying a complex picture of increased access to medical marijuana in Pennsylvania, the steady rates of youth use, fluctuations in approving youth attitudes toward use, as well as continuing racial disparities in marijuana possession arrests.

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Pennsylvania SEOW
The State Epidemiological Outcomes Workgroup (SEOW) is supported by the Pennsylvania Department of Drug and Alcohol Programs. SEOW members represent both governmental and non-governmental agencies from across Pennsylvania. The goal of the SEOW is to inform and enhance state and community decisions regarding substance misuse prevention and mental health promotion programs, practices, and policies.

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