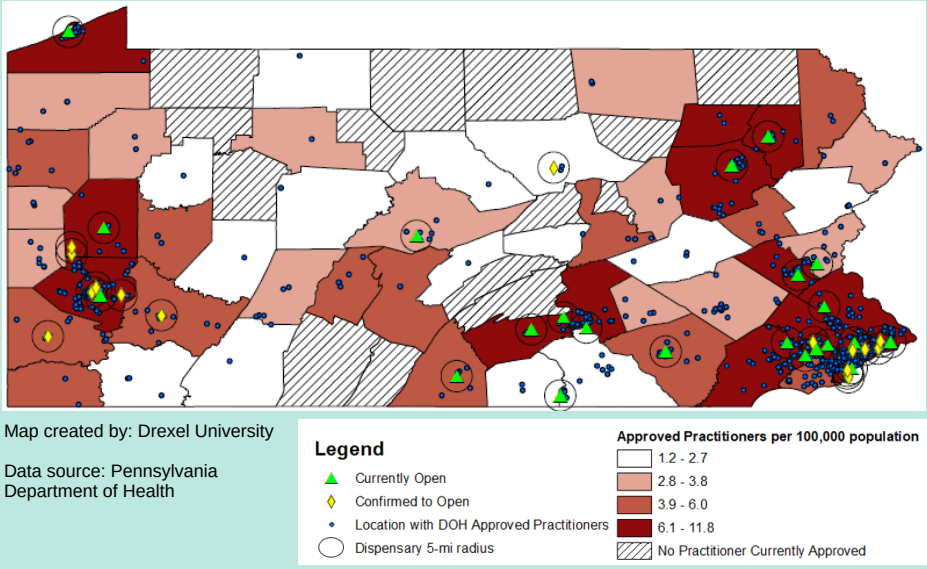
The changing landscape of marijuana in Pennsylvania: examining access, use, and perceptions

State Epidemiological Outcomes Workgroup, 2018

MEDICAL MARIJUANA IN PENNSYLVANIA: ACCESS

Pennsylvania's Medical Marijuana Program (MMP), Act 16, was signed into law on April 17, 2016. Under Act 16, the term "medical marijuana" refers to marijuana obtained for certified medical use by a Pennsylvania resident with a serious medical condition and is limited at the statute in Pennsylvania to the following forms: 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. Qualifying patients are able to obtain medical marijuana from approved dispensary locations throughout Pennsylvania.

Currently, there are two identified roll-out phases for the MMP. Phase 1 resulted in 283 dispensary business applications, and as of June 15, 2018, there were 22 open Phase 1 dispensary locations with another 16 locations confirmed to open, **Figure 1** [1]. Additionally, as of June 2018, there were 761 Phase 1 physicians approved to certify patients to participate in Pennsylvania's Medical Marijuana Program, at 658 locations, spanning across 53 counties. Also in neighboring states, there are 11 out-of-state practitioners approved to certify patients. A large percentage (~ 30%) of physicians are located in counties with large urban centers (i.e., Philadelphia and Allegheny), **Figure 1** [1]. **Table 1** shows the distribution of these providers at the county level.



Map created by: Drexel University

Data source: Pennsylvania Department of Health

Figure 1. Distribution of currently open (n 22) and confirmed to open (n 16) medical marijuana dispensaries and healthcare practitioners located in Pennsylvania approved to certify patients to participate in Pennsylvania s Medical Marijuana Program (n 761) as of June 15, 2018.

Table 1. Healthcare practitioners located in Pennsylvania who are currently approved to certify patients to participate in Pennsylvania s Medical Marijuana Program (n 761) by county as of June 15, 2018.

County	n	per 100,000	County	n	per 100,000
Philadelphia	128	8.1	Northumberland	4	4.3
Allegheny	96	7.8	Carbon	3	4.7
Montgomery	82	10.0	Crawford	3	3.5
Bucks	74	11.8	Fayette	3	2.3
Chester	40	7.7	Lawrence	3	3.4
Delaware	26	4.6	Monroe	3	1.8
Lehigh	25	6.9	Schuylkill	3	2.1
Lancaster	24	4.5	Wayne	3	5.9
Dauphin	23	8.4	Adams	2	2.0
Luzerne	22	6.9	Bradford	2	3.3
Erie	18	6.5	Clearfield	2	2.5
Cumberland	17	6.9	Columbia	2	3.0
Berks	16	3.8	Greene	2	5.4
Westmoreland	16	4.5	Huntingdon	2	4.4
Lackawanna	14	6.6	Lycoming	2	1.7
Butler	13	7.0	Pike	2	3.6
York	12	2.7	Somerset	2	2.7
Northampton	10	3.3	Venango	2	3.8
Washington	9	4.3	Wyoming	2	7.3
Franklin	7	4.6	Clarion	1	2.6
Beaver	6	3.6	Clinton	1	2.6
Center	6	3.7	Elk	1	3.3
Blair	5	4.0	Indiana	1	1.2
Cambria	5	3.7	McKean	1	2.4
Mercer	5	4.4	Mifflin	1	2.2
Armstrong	4	6.0	Snyder	1	2.5
Lebanon	4	2.9			

Data source: Pennsylvania Department of Health

Qualifying Medical Conditions

To qualify for participation in the Medical Marijuana Program, patients must be diagnosed with at least 1 of 21 serious medical conditions detailed in **Table 2**. These qualifying medical conditions are consistent with other states with currently legalized medical marijuana [1].

Table 2. Serious medical conditions approved for medical marijuana in Pennsylvania, as of June 2018.

Addiction substitute therapy - opioid reduction	Inflammatory Bowel Disease
Amyotrophic Lateral Sclerosis	Intractable Seizures
Autism	Multiple Sclerosis
Cancer; including remission therapy	Neurodegenerative Diseases
Crohn's Disease	Neuropathies
Damage to nervous tissue of the CNS (brain-spinal cord) with objective neurological indication of intractable spasticity & other associated neuropathies	Parkinson's Disease
Dyskinetic and Spastic Movement Disorders	Post-traumatic Stress Disorder
Epilepsy	Severe chronic or intractable pain
Glaucoma	Sickle Cell Anemia
HIV/AIDS	Terminally Ill
Huntington's Disease	

Data source: Pennsylvania Medical Marijuana Program

As of October 2017, only Delaware and Pennsylvania have included Autism as one of the qualifying medical conditions, though Delaware requires Autism with self-injurious aggressive behavior [2]. Also Pennsylvania is the first state to add opioid-use disorder separately as an approved condition for medical marijuana patients [3].

MARIJUANA: YOUTH ATTITUDES, NORMS, AND PERCEPTIONS

The following data describe attitudes, social norms, and perceptions related to marijuana use among Pennsylvania youth. Data from 2013, 2015, and 2017 from the Pennsylvania Youth Survey (PAYS) are provided to describe trends over time. These youth-reported data are not specific to medical marijuana, but rather provide information related to marijuana overall.

Attitudes

Table 3. Attitudes of marijuana use among youths (aged 12 17) in Pennsylvania, 2013, 2015, 2017.

	2013 (n 154,054) (%)	2015 (n 165,590) (%)	2017 (n 191,705) (%)
How do you feel about someone your age using marijuana once a month or more?			
Strongly disapprove	60.7	56.9	53.3
Somewhat disapprove	9.8	10.9	11.7
Neither approve or disapprove	16.0	17.9	19.3
Approve	9.3	9.5	10.8

Data source: Pennsylvania Youth Survey

Table 3 shows that strongly disapproving attitudes towards marijuana use have decreased from 2013 to 2017 among Pennsylvania youth.

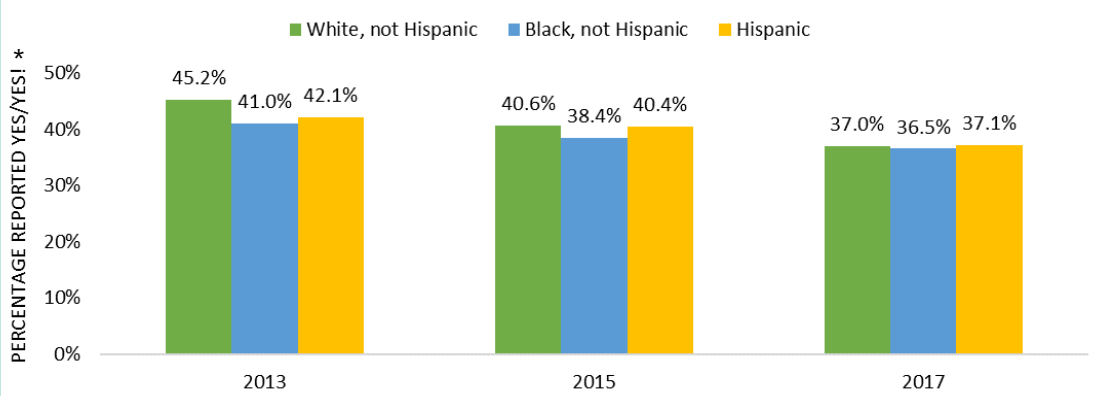
Social Norms

Table 4. Attitudes of marijuana use among youths (aged 12 17) in Pennsylvania, 2013, 2015, 2017.

	2013 (n 154,054) (%)	2015 (n 165,590) (%)	2017 (n 191,705) (%)
How many of your best friends have use marijuana in the past 12 months? (peer use)			
0	69.3	69.9	68.1
≥ 1	30.7	30.1	31.9
How wrong do your parents feel it would be for you to use marijuana? (parental perception)			
Not at all wrong	3.3	4.0	4.7
A little bit wrong	4.5	5.1	6.1
Wrong	11.0	12.6	13.8
Very wrong	81.2	78.3	75.4
If a kid smoked marijuana in your neighborhood would he or she be caught by the police? (perceived law enforcement)			
NO!	16.6	17.5	19.0
No	38.3	41.1	43.0
Yes	28.0	25.4	23.9
YES!	17.1	16.0	14.1

Data source: Pennsylvania Youth Survey

While self reported peer use of marijuana has remained relatively constant from 2013 to 2017, self reported perceptions related to parents and law enforcement have shown slight shifts towards becoming more accepting of marijuana, **Table 4**.



Data source: Pennsylvania Youth Survey

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

Figure 2. Youth perception of law enforcement in Pennsylvania, 2013, 2015, 2017, by race/ethnicity.

Perceptions of law enforcement in youth's neighborhoods have trended towards becoming more accepting of marijuana across all racial/ethnic groups, **Figure 2**. All 3 racial/ethnic groups showed a decrease of perceived law enforcement with White youth reporting the greatest percent decrease from 2013 to 2017.

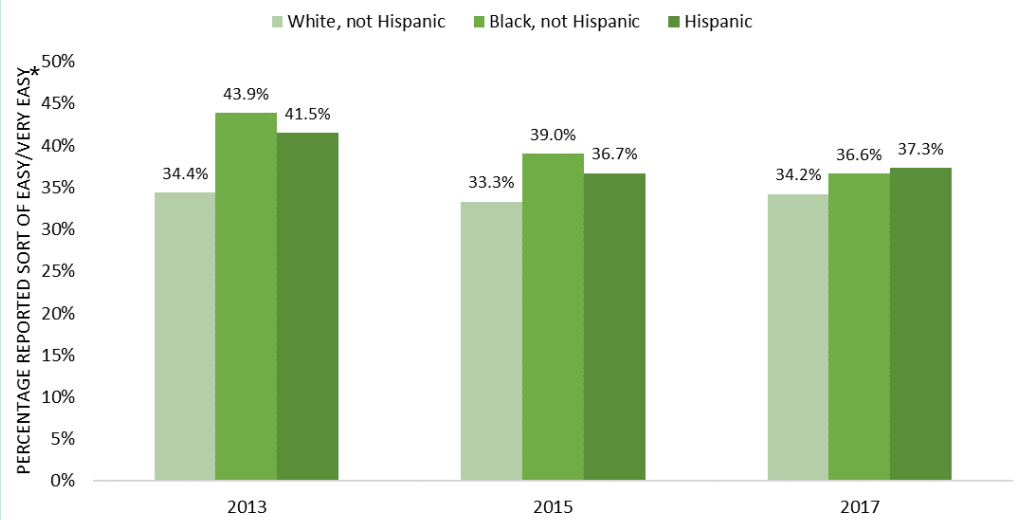
Perceived Access

Table 5. Perceived access of marijuana use among youths (aged 12 17) in Pennsylvania, 2013, 2015, 2017.

	2013 (n 154,054) (%)	2015 (n 165,590) (%)	2017 (n 191,705) (%)
How easy would it be for you to get any, if you wanted to get any marijuana?			
Very hard	53.9	56.3	55.0
Sort of hard	10.9	10.4	11.0
Sort of easy	12.8	12.1	12.7
Very easy	22.4	21.2	21.2

Data source: Pennsylvania Youth Survey

Perceived ease of acquiring marijuana has remained relatively constant from 2013 to 2017, **Table 5**.



Data source: Pennsylvania Youth Survey

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

From 2013 to 2017, perception of access to marijuana has decreased among Black and Hispanic youth, but has remained relatively constant across years for White youth, **Figure 3**.

Figure 3. Youth perception of access to marijuana in Pennsylvania, 2013, 2015, 2017, by race/ethnicity.

Willingness to Try Marijuana

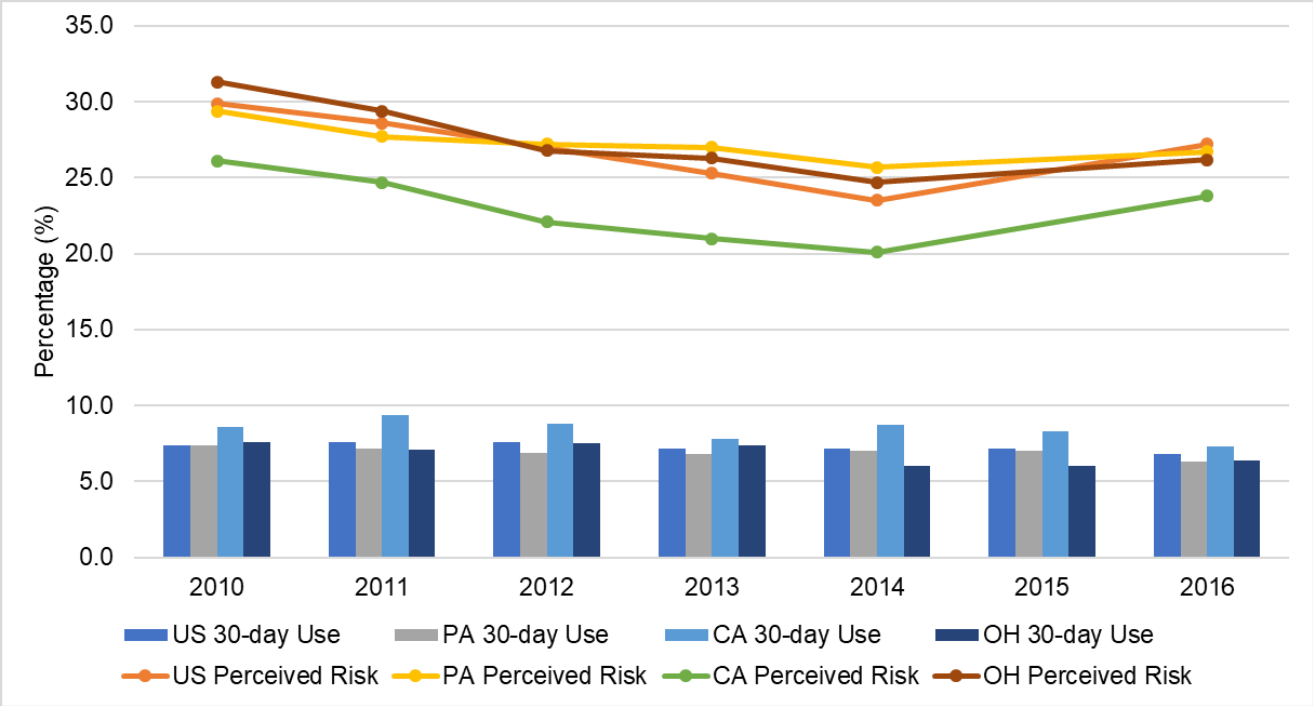
Table 6. Willingness to try marijuana among youths (aged 12 17) in Pennsylvania, 2013, 2015, 2017.

	2013 (n 154,054) (%)	2015 (n 165,590) (%)	2017 (n 191,705) (%)
How willing are you to try marijuana before you are 21?			
I would never try it	71.0	65.1	62.2
I probably wouldn't try it	9.4	9.7	10.3
I'm not sure whether or not I would try it	6.7	9.5	10.3
I would like to try it	6.8	8.3	9.3
I would try it any chance I got	6.0	7.5	7.9

Data source: Pennsylvania Youth Survey

From 2013 to 2017, willingness to try marijuana has gradually shifted among youth with respect to time. Table 6 shows a 9 percentage point decrease of youths reporting, I would never try it, from 2013 to 2017. The opposite trend is observed for willingness to try, with a greater percentage indicating willingness to try in 2017 compared to 2013.

30-day Marijuana Use and Perceived Risk



Data source: National Survey on Drug Use & Health

*Ohio represents a state that has a similar timeline to Pennsylvania of the adoption of medical marijuana policies; California represents a state with earlier adoption of medical marijuana. Both serve as comparison states to demonstrate the relative trend in marijuana use and perceived risk over time.

Figure 4. Percentage of 30 day marijuana use and perceived risk of 30 day use among youths (aged 12 17) in the United States, Pennsylvania, California and Ohio, 2010 2016*.

Percentage of perceived risk associated with marijuana use among youths (aged 12-17) slightly decreased or remained the same across all three states and nationally between 2010 and 2014, **Figure 4**. However, the percentage of perceived risk increased from 2014 to 2016 at both the national and state levels. From 2010 to 2016, perceived risk among Pennsylvania youth has fluctuated above and below the national level.

Percentage of 30-day marijuana use among youths (aged 12-17) varies across states; however, values have remained relatively consistent, ranging from 6.0% (in Ohio) to 9.4% (in California) from 2010 to 2016.

Driving Under the Influence of Marijuana

Table 7. Driving under the influence of marijuana among 12th graders in Pennsylvania, 2013, 2015, 2017.

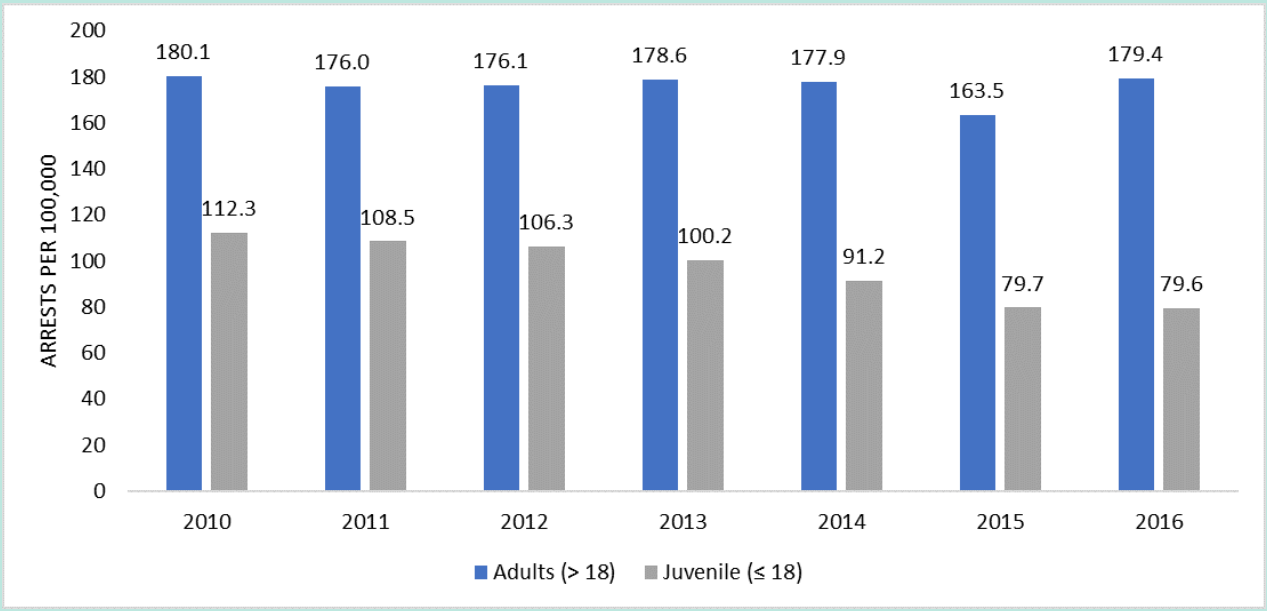
	2013 (n 43,469) (%)	2015 (n 46,192) (%)	2017 (n 55,217) (%)
How many times have you driven a vehicle while or shortly after using marijuana?			
I don't drive	20.0	23.3	24.3
Never	64.6	62.9	62.5
Before, but not in the past year	3.0	2.5	2.5
About once or twice in the past year	5.0	4.5	4.3
About once or twice in the past month	3.1	2.8	2.6
About once or twice in the past week	2.0	1.7	1.7
Almost everyday	2.2	2.3	2.0

Data source: Pennsylvania Youth Survey

Minimal to no change in self-reported driving after using marijuana is observed across all three years among 12th graders in Pennsylvania, **Table 7**.

LAW ENFORCEMENT DATA ASSOCIATED WITH MARIJUANA IN PENNSYLVANIA

Arrests



Data source: Uniform Crime Reporting System

Figure 5. Arrest for marijuana possession among adults (aged >18) and juveniles (aged ≤18) in Pennsylvania, 2010 2016.

Arrests for marijuana possession have remained relatively consistent from 2010 to 2016 among adults (aged >18) and have gradually declined among juveniles (aged ≤18) in Pennsylvania, **Figure 5**.

Table 8. Arrests for marijuana possession broken down by race among adults (aged >18) and juveniles (aged ≤18) in Pennsylvania, 2010 2016.

	White Adults		Black Adults		Black/White Prevalence Ratio*	95% Confidence Interval
	n	per, 100,000	n	per 100,000		
2010	10,206	119.2	7,557	700.9	5.88	5.71, 6.06
2011	10,370	121.1	7,073	656.0	5.42	5.26, 5.58
2012	10,578	123.5	6,964	645.9	5.23	5.07, 5.39
2013	10,418	121.7	7,419	688.1	5.66	5.49, 5.83
2014	10,916	127.5	6,852	635.5	4.99	4.84, 5.14
2015	10,992	128.4	5,347	495.9	3.86	3.74, 3.99
2016	12,224	142.7	5,727	531.2	3.72	3.61, 3.84
	White Juveniles		**Black Juveniles**		**Black/White Prevalence Ratio***	**95% Confidence Interval**
	n	**per, 100,000**	**n**	**per 100,000**		
2010	2,038	89.4	1,072	222.9	2.49	2.32, 2.68
2011	2,037	89.3	927	192.7	2.16	1.99, 2.33
2012	1,995	87.5	888	184.5	2.11	1.95, 2.28
2013	1,804	79.1	893	185.9	2.35	2.17, 2.54
2014	1,731	75.9	704	146.3	1.93	1.77, 2.10
2015	1,600	70.2	525	109.1	1.55	1.41, 1.72
2016	1,619	71.0	496	103.1	1.45	1.31, 1.61

Data source: Uniform Crime Reporting System

Black adults and juveniles have been consistently arrested at higher rates than their white counterparts since 2010, but this disparity began to narrow in 2014, which coincides with the decriminalization of marijuana in Philadelphia (2014) and Pittsburgh (2016).

*Prevalence ratio in this instance refers to the increased likelihood of being arrested for marijuana possession if you are Black compared to if you are White in Pennsylvania. For example, in 2016 Black adults were 3.72 times as likely as White adults to be arrested for marijuana possession.

Further analyses demonstrated that arrests for marijuana possession among adult women have gradually increased from 49.4 per 100,000 to 69.1 per 100,000 between 2010-2016, respectively, with the greatest burden placed among Black women (vs. White women; 2016 prevalence ratio: 2.35; 95% CI: 2.18, 2.54).

MEDICAL MARIJUANA ACROSS THE UNITED STATES

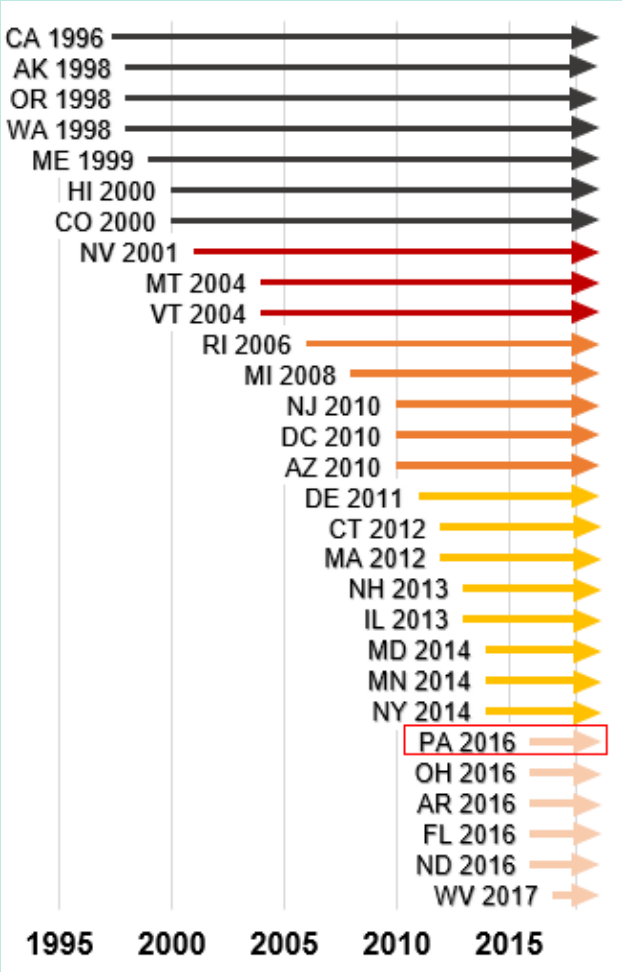
Medical marijuana was first introduced in the United States by the state of California on November 5, 1996, when Proposition 215 was enacted [4]. As of December 2017, there were 28 states and the District of Columbia (DC) that have legalized medical use of marijuana, **Figure 6**.

Figure 6 displays the states with laws legalizing medical marijuana, further broken down into five categories based on a 5-year interval in which medical marijuana use was legalized: 24% were 1st stage adopters (1996 to 2000), 10% were 2nd stage adopters (2001 to 2005), 17% were 3rd stage adopters (2006 to 2010), 28% were 4th stage adopters (2011-2015), and 21% were 5th stage adopters (2016-present). Legalization of medical marijuana in Pennsylvania follows current state trends throughout the United States.

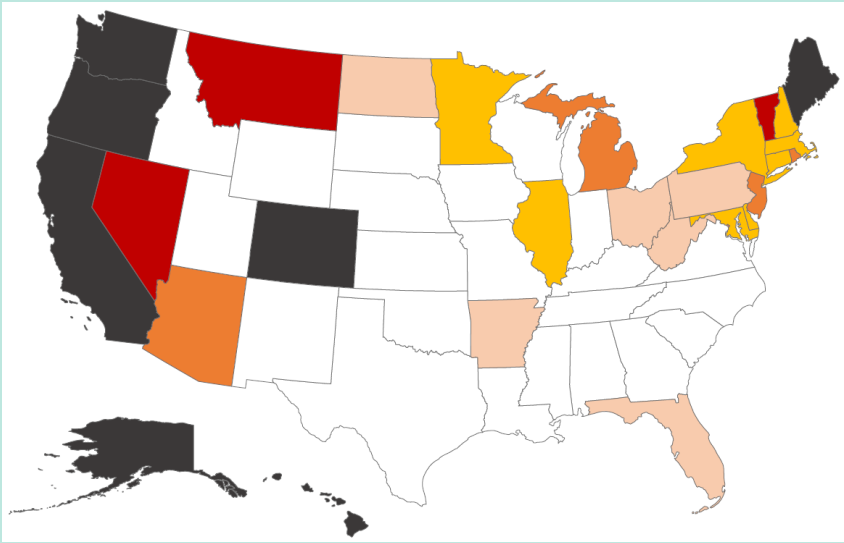
Additionally, there are 3 states with potential medical marijuana policies that may appear on the ballot in 2018: Missouri, Utah, and Virginia [5].

Recreational Marijuana

Among the 28 states and DC with legalized medical marijuana, 31% (n=9) have legalized the recreational use of marijuana. These include: Alaska, California, Colorado, District of Columbia, Maine, Massachusetts, Nevada, Oregon, and Washington.



Data source: Marijuana Policy Project



Data source: Marijuana Policy Project

Figure 6. States with legalized medical marijuana, (right, top) December 2017; Medical marijuana law enactment timeline in the United States (left), 1996 2017.

CONCLUSION

This brief presents empirical data related to the Medical Marijuana Program (MMP) in Pennsylvania [1]. While the dispensary locations, the number of health care providers who are able to certify program participants, and qualifying conditions may change as the MMP continues to roll out and evolve, this brief provides important preliminary data on these points of access. Of note, as of June 2018, 167 Phase II dispensary business applications have been received by the PA Department of Health, and access will likely expand as many of these applications may result in additional dispensary locations, statewide.

In addition to data specifically related to the MMP, this brief provides information on trends among youth in PA concerning attitudes, social norms, and perceptions related to marijuana. These data show that over the past five years, self-reported use and perceived risk have remained relatively stable while attitudes and social norms have trended towards more acceptance of marijuana [6]. It will be important to continue tracking changes in access to, attitudes toward, and use of marijuana among youth to inform policy decisions as well as substance use prevention efforts.

As medical marijuana became legalized in Pennsylvania and decriminalized in its two largest cities, we also chose to examine the history of arrest data related to marijuana possession, to highlight differences among adults and juveniles, as well as racial differences. When examining differences between White and Black individuals, our data show disproportionately higher arrest rates for possession of marijuana among Black individuals, for both adult and juvenile populations. These data provide important context to highlight how different communities have been impacted by arrests related to marijuana. While Act 16 does not legalize the recreational use of marijuana, examining trends in arrests will be important moving forward as Act 16 legalizes the medicinal use of marijuana for certain qualifying conditions.

Finally, we highlight the history and timeline of medical marijuana policy and laws in the United States that first began in 1996, to provide a broader backdrop and context for the passing of Act 16 in Pennsylvania. In 2016, 20 years after the first law was passed in California, Pennsylvania has joined the majority of states that have legalized medical marijuana.

LIMITATIONS/FUTURE DIRECTIONS

Our analyses are descriptive in nature and do not account for potential changes or variations due to historical events. For example, we are unable to determine if trends or variations are a direct result of changes in marijuana-related policy, shifts in enforcement, differences in decriminalization policies across counties, or some other external factor. Further, Pennsylvania Youth Survey (PAYS) and National Survey on Drug Use and Health (NSDUH) data are self-reported and thus are limited by respondent bias [5,6].

Finally, the medical marijuana landscape in Pennsylvania continues to change and evolve since the passing of Act 16 in 2016. Information from the PA Department of Health website was used for Phase 1 dispensary and physician data. However, to provide up-to-date information as of June 15, 2018, we confirmed addresses, opening dates, and secondary/tertiary locations by directly contacting dispensaries. Additionally, during the creation of this report, the Medical Marijuana Advisory Board suggested the implementation of several new recommendations for the Medical Marijuana Program, including the expansion of medical conditions from 16 to 21. This new recommendation is captured in the report, and also serves to highlight the changing medical marijuana landscape in Pennsylvania.

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PENNSYLVANIA SEOW

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