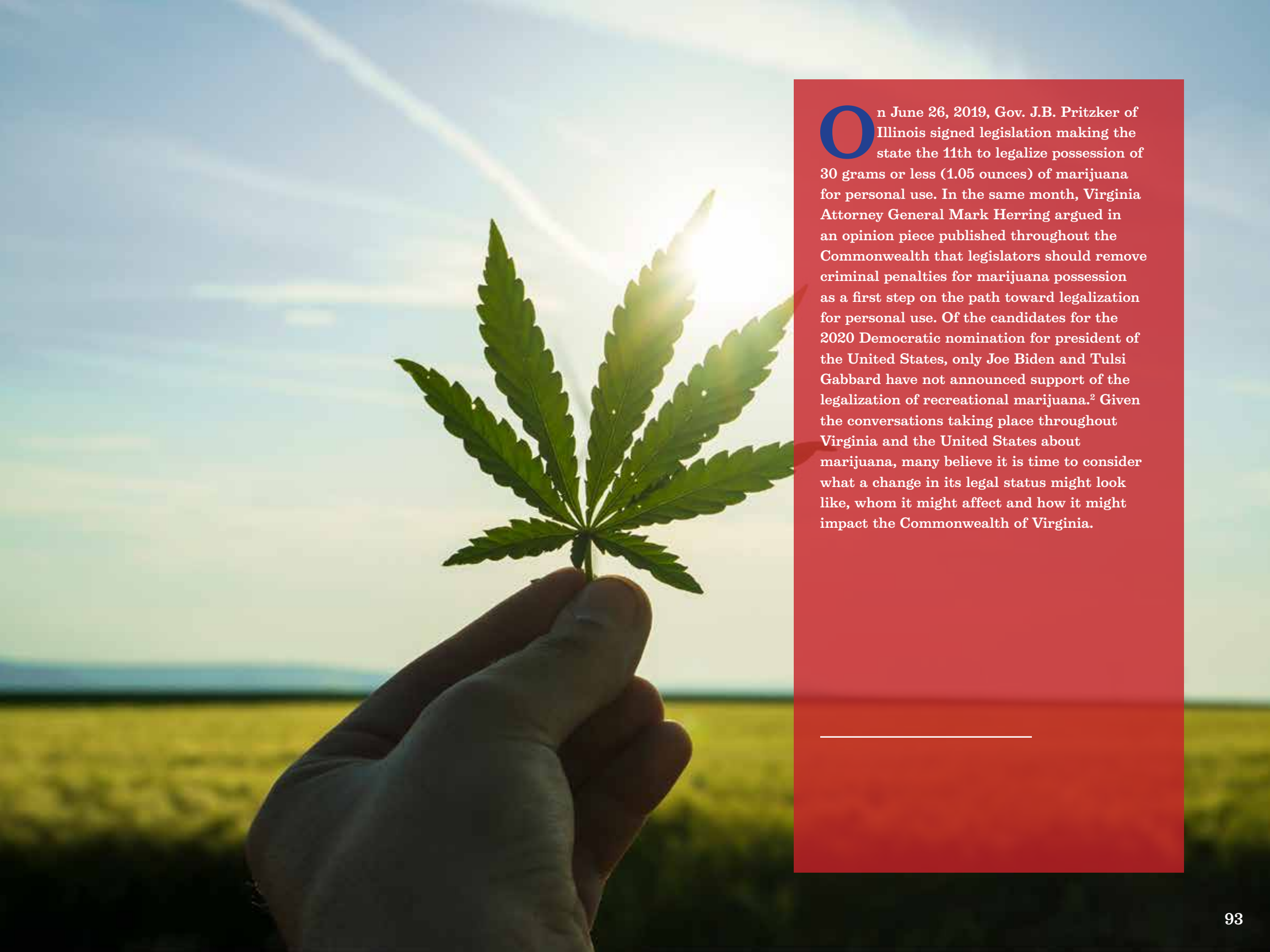


MARIJUANA IN VIRGINIA

Virginia should decriminalize possession of small amounts of marijuana, address past convictions and start moving toward legal and regulated adult use. ... It is time for Virginia to embrace a better, smarter and fairer approach to cannabis.

– Mark R. Herring, Attorney General for
the Commonwealth of Virginia,
June 15, 2019



On June 26, 2019, Gov. J.B. Pritzker of Illinois signed legislation making the state the 11th to legalize possession of 30 grams or less (1.05 ounces) of marijuana for personal use. In the same month, Virginia Attorney General Mark Herring argued in an opinion piece published throughout the Commonwealth that legislators should remove criminal penalties for marijuana possession as a first step on the path toward legalization for personal use. Of the candidates for the 2020 Democratic nomination for president of the United States, only Joe Biden and Tulsi Gabbard have not announced support of the legalization of recreational marijuana.² Given the conversations taking place throughout Virginia and the United States about marijuana, many believe it is time to consider what a change in its legal status might look like, whom it might affect and how it might impact the Commonwealth of Virginia.

Even though a majority of adult Americans have used marijuana in their lifetime and over a third of young adults in Virginia used it in the previous year, marijuana possession is almost always unlawful in the Commonwealth of Virginia.³ Section 18.2-250.1 of the Code of Virginia states: “It is unlawful for any person knowingly or intentionally to possess marijuana unless the substance was obtained directly from, or pursuant to, a valid prescription or order of a practitioner while acting in the course of his professional practice, or except as otherwise authorized by the Drug Control Act.” A conviction of the violation of this section for the first offense can result in confinement of no more than 30 days, a fine of up to \$500, or both. A second or subsequent conviction results in a Class 1 misdemeanor, which could lead to maximum confinement of 12 months, a maximum fine of \$2,500, or both.

Haley Smith is a young resident of Virginia who suffers from Dravet syndrome, a rare form of epilepsy that causes frequent seizures that will continue for the duration of her life. In 2014, Haley suffered more than 1,000 life-threatening seizures. Her mother, Lisa, took up the fight for medical marijuana for her daughter by supporting legislation in Richmond. Lisa Smith, accompanied by fellow parents in the group Parents for Medical Marijuana, advocated for the legalization of marijuana for medical treatments. In a Jan. 28, 2015, story on WTKR-TV, news anchor Barbara Ciara said, “Lisa doesn’t want her daughter’s legacy to be she took her last breath waiting on the slow wheels of legislation to legalize the medicine she needs to live.”⁴ In a similar vein, Stephanie Anderson of Richmond is considering cannabidiol (CBD) oil as an alternative treatment for her son’s ADHD. She wants her son to have safe and legal access to CBD products. “I’ve been hesitant to try CBD from online sources, so the idea of having in-state pharmaceutical processors puts my mind at ease.”⁵

Virginia has a limited qualification for the possession and personal use of marijuana. As a result of HB 1251 (2018) and SB 1B 1557 (2019), doctors, physician assistants and licensed nurse practitioners can issue a

written certification for oils that contain tetrahydrocannabinol (THC) or cannabidiol. These oils can be found in a variety of products, potentially including (but not limited to) creams, baked goods and gummies. Each dispensed dose cannot exceed 10 milligrams of THC. Virginia’s law also only provides for an “affirmative defense.” The certification may not prevent an arrest for marijuana possession and can only be raised during a criminal prosecution.⁶

Marijuana use in Virginia falls below the national average. In the 2014-2016 National Survey of Drug Use and Health, 6.7% of residents 18 and older in Virginia reported using marijuana in the past month, two percentage points lower than the United States (8.7%). Adults in Virginia were also less likely to have used marijuana in the past year (11.5%) than adults nationwide (13.7%). Not surprisingly, marijuana use in Virginia was the highest among adults ages 18 to 25. Almost 20% of young adult Virginians have used marijuana in the past month and nearly a third have used it in the past year.

While more than 50% of Virginians in recent surveys supported legalization of the personal use of small amounts of marijuana, the Code of Virginia is quite clear: possession of marijuana is illegal in almost every circumstance. A first offense for possession can result in an arrest that is resolved by either a court summons or confinement. From 2010 to 2018, there were nearly 200,000 marijuana possession arrests in Virginia. Over 80% of these arrests were for a single offense; that is, no other offense was charged at the time of arrest.

In 2018, there were 219.3 marijuana possession arrests per 100,000 white residents and 771.9 arrests per 100,000 black or African American residents in Virginia.⁷ While some argue that decriminalization could reduce these inequities, evidence from decriminalized states suggests that these disparities may persist.

4 <https://wtkr.com/2015/01/28/virginia-mom-fights-for-cannabis-cure-for-ailing-daughter/>.

5 <http://richmondfreepress.com/news/2019/apr/19/medical-marijuana-dispensaries-open-va/>.

6 <https://www.mpp.org/states/virginia/>.

7 National Survey of Drug Use and Health, 2017 National Estimates. We follow the U.S. Census Bureau’s conventions with regard to race. Individuals choose to self-identify race and may self-identify more than one race. For more information, see: <https://www.census.gov/topics/population/race/about.html>.

Legalization, on the other hand, has dramatically reduced the number of possession arrests in several states but also has resulted in increases in the number of traffic accidents and emergency department visits.

In this chapter, we will look at how perceptions about marijuana have changed over time and who uses marijuana. We'll consider who is arrested for possession, discuss the differences between decriminalization and legalization, and provide an estimate of the financial impact of marijuana legalization in Virginia. If change is coming, it's best to be prepared.

Marijuana And Hemp: A Primer

Marijuana (cannabis) and hemp plants look alike to the untrained eye.⁸ Hemp has many uses, including for clothing, rope and livestock feed. Marijuana, on the other hand, is primarily a recreational substance. Both marijuana and hemp contain tetrahydrocannabinol (THC). It is the main psychoactive agent in marijuana. When ingested, THC stimulates the parts of the brain that respond to pleasure, leading to the release of dopamine.⁹ Hemp, however, must legally have a THC content of less than 0.3%, well below the 18.7% average THC level in marijuana sold for recreational purposes in Colorado.¹⁰

Hemp, unlike marijuana, can be legally produced, processed, distributed and sold throughout the United States as of Jan. 1, 2019.¹¹ The change in hemp's legal status has allowed hemp growers access to banking, water rights and crop insurance, among other institutional rights and protections.¹² Farmers can now grow hemp and sell to processors, which is potentially good news for a sector that has struggled recently in Virginia with the decline in the demand for tobacco products.

While hemp is now legal, marijuana remains a subject of tension between the federal government and many state and local governments. **As of July 2019, 33 states (plus the District of Columbia, Guam, Puerto Rico and the U.S. Virgin Islands) have legalized medical marijuana, 15 states have decriminalized marijuana possession for personal use and 11 states (plus the District of Columbia) have legalized marijuana for recreational purposes. There is not a common legal framework among the states.**¹³

By July 2019, more than 800 hemp growers had registered with the Virginia Department of Agriculture and Consumer Services. Elaine Lidholm, director of communications for VDACS, noted that these farmers expect to plant 8,500 acres of hemp.¹⁴ One of the first to invest in the plant on a large scale is race car driver and cattle farmer, Matt Hagan, from Montgomery County. "They say we're going to be one of the biggest in the state of Virginia and that means we're taking one of the biggest risks in the state of Virginia. Everybody says, 'You're either going to be the biggest dummies on the block or we'll be popping champagne bottles.' I don't know," Hagan laughed. According to Hagan, a single hemp plant can cost the farmer anywhere from \$3 to \$6. To comply with federal and state laws, each plant must be inspected to ensure that the crop does not exceed legal THC limits.¹⁵

8 For the purposes of the chapter, we refer to cannabis as marijuana.

9 <https://www.webmd.com/mental-health/marijuana-use-and-its-effects#1>.

10 <https://www.nbcnews.com/storyline/legal-pot/legal-weed-surprisingly-strong-dirty-tests-find-n327811>.

11 <https://www.agriculture.senate.gov/2018-farm-bill>.

12 <https://www.vox.com/policy-and-politics/2018/12/12/18136408/hemp-marijuana-legalization-trump-congress-farm-bill>.

13 <https://medicalmarijuana.procon.org/view.resource.php?resourceID=000881>.

14 https://www.roanoke.com/news/local/virginia-s-commercial-hemp-rush-launches-after-changes-in-laws/article_8e34b861-8bf6-54d6-a82d-c0475d2774d2.html.

15 <https://www.wdbj7.com/content/news/Christiansburg-farm-becomes-largest-producer-of-hemp-in-Virginia-511285691.html>.

In some states, such as Colorado and California, where recreational marijuana possession is legal for adults, the production and sale are taxed and regulated, and there are medical marijuana laws. In other states, such as New Mexico and North Dakota, possession does not result in confinement and medical marijuana is provided for in the law. In some states, including North Carolina, possessing small amounts of marijuana may result in an arrest or fine. Virginia allows the prescription of cannabis oil products but not medical marijuana. Lastly, in certain states, such as Alabama, possession of marijuana in any form for almost any reason is illegal under state law. All of this, of course, can create confusion, as individuals may purchase marijuana legally in one state and travel to another state only to find they are now in violation of state law as well as federal law.¹⁶

With all this in mind, we must remember that the federal government considers marijuana an illegal substance. The U.S. Drug Enforcement Administration (DEA) classifies marijuana as a Schedule I drug, with no currently accepted medical use and a high potential for abuse.¹⁷ Marijuana is grouped together with heroin, lysergic acid diethylamide (LSD), 3,4-methylenedioxymethamphetamine (ecstasy), methaqualone (Quaaludes) and peyote. Marijuana's classification as a Schedule I drug effectively outlaws most medical research on products with THC. Marijuana producers and dispensaries are also largely shut off from financial networks and, in many cases, must conduct business in cash.

We find marijuana's classification curious, since the Centers for Disease Control and Prevention (CDC) notes that a fatal overdose from marijuana is "unlikely." An overdose, however, can lead to adverse reactions, including confusion, anxiety and paranoia.¹⁸ To place this into context, the CDC reported that there were 70,237 fatal overdoses in 2017 in the United States. Opioids were involved in 47,600 of the overdose deaths that year (67.8% of all drug overdose deaths).¹⁹ Fentanyl, which is a Schedule 2 drug, accounted for 28.8% of the overdose deaths. Heroin (Schedule 1), cocaine (Schedule 2) and methamphetamine (Schedule 2) accounted for

25.1%, 17.8% and 10.6% of deaths, respectively. There were no reported deaths from marijuana overdose in 2017.

We must be careful to note that these observations focus on overdose fatalities. Marijuana use can cause impaired driving, and there is no widely accepted field test for marijuana intoxication. Prolonged substance abuse is also possible with marijuana. Withdrawal symptoms may be exacerbated in individuals with a mental illness;²⁰ however, there continues to be fierce debate as to the impact of marijuana use on anxiety and depression. Many claims and counterclaims remain untested in the United States due to the federal government's classification of marijuana as a Schedule 1 substance.

¹⁶ For more information, see the National Conference of State Legislatures and the Marijuana Policy Project.

¹⁷ U.S. Drug Enforcement Agency. For more information, see <https://www.dea.gov/drug-scheduling>.

¹⁸ For more information, see <https://www.cdc.gov/marijuana/faqs/overdose-bad-reaction.html>.

¹⁹ Centers for Disease Control and Prevention (2018), <https://www.cdc.gov/drugoverdose/data/statedeaths.html>.

²⁰ Randi Melissa Schuster, Madeleine Fontaine, Emily Nip, Haiyue Zhang, Ailish Hanly and A. Eden Evins, "Prolonged cannabis withdrawal in young adults with lifetime psychiatric illness," *Preventive Medicine* 104 (2017).

Cannabidiol (CBD)

Hemp and marijuana contain another active component that, unlike THC, has gained acceptance in recent years. Cannabidiol, or CBD, does not result in a “high” after ingesting or applying to the body. Claims that CBD reduces anxiety and seizures, and provides pain relief, have sparked interest in and usage of CBD products.²¹ CBD often comes in the form of oil but also can be found in creams, or even gummies. With the 2018 Farm Bill’s passage, if CBD products are derived from hemp under the THC guidelines contained in the law, these products can be consumed and are transportable nationwide. Any products derived from hemp or marijuana with THC levels greater than allowable limits remain illegal at the federal level. To say this creates confusion is an understatement. CBD products derived from hemp may have excess THC levels if quality controls are not sufficiently stringent.²² For now, the watchwords for CBD products are “buyer beware.”

In 2018 and prior to the passage of the 2018 Farm Bill, Virginia legalized the production and use of CBD oils and set explicit guidelines for the cultivation and production of CBD-related products. The Commonwealth also created a framework for legal prescriptions, although CBD products (absent of THC) were already widely available without prescription.²³ Virginia has since passed a law conforming state regulation of hemp to federal guidelines regarding oversight and the THC content of hemp. The absence of previous legal oversight of hemp led to large variation in quality and active ingredients for products that may perhaps share the same names or labels.²⁴

Owners and pharmacists at local drugstores in Williamsburg have become conscious of the rising demand for and curiosity surrounding CBD oil. Henry Ranger, a local business owner, learned of CBD oil while working for a larger chain pharmacy that didn’t stock the product. He was unable to begin exploring the growing industry until he opened his own business. Kelly Kale, another small-business owner, advises that consumers should understand the difference between pharmaceutical CBD and that sold by online shops because with the pharmaceuticals “we can guarantee from bottle to bottle and from batch to batch that it is exactly the same product.” While many Virginians have been thankful for remedies from CBD oils, it should be noted that these local business owners are aware of the paucity of research to validate their customers’ claims of effectiveness.²⁵

Even though CBD is legal in Virginia, the production and distribution of CBD products is still in its infancy. The Virginia Board of Pharmacy selected five CBD distributors, one for each of the five health services areas (HSA) in Virginia, illustrated in Figure 1. The five distributors include Pharmacann (HSA I), Dalitso (HSA II), Dharma (HSA III), Green Leaf (HSA IV) and Columbia Care (HSA V).²⁶ Columbia Care, a firm that already operates dispensaries in multiple states, produces products and services for patients who are part of a medical marijuana program.^{27, 28} At the time of this writing, the expectation is that Columbia Care will open its facility in Portsmouth in late 2019 (Table 1).

TABLE 1

MEDICAL MARIJUANA DISPENSARIES, VIRGINIA

HSA	HSA NAME	DISTRIBUTOR	CITY	EXPECTED OPENING DATE
HSA I	Northwest	PharmaCann	Staunton	End of 2019
HSA II	Northern	Dalitso, LLC	Manassas	End of 2019
HSA III	Southwest	Dharma Pharmaceuticals	Bristol	End of 2019
HSA IV	Central	Green Leaf Medical	Richmond	End of 2019
HSA V	Eastern	Columbia Care	Portsmouth	Late 2019

Source: <http://richmondfreepress.com/news/2019/apr/19/medical-marijuana-dispensaries-open-va/>

Portsmouth businessman Johnny Garcia is working to be a part of the expanding CBD industry. He has invested in an industry that plans to plant more than just roots in Portsmouth. As noted previously, another company, Columbia Care, will open a medical marijuana facility in Portsmouth by the end of 2019 where the plants will be cultivated and processed into prescription pills. Garcia co-owns Cativa CBD, which will process and manufacture certain CBD products, including body cream and sublingual tablets. Garcia said the company he co-owns plans to build two facilities in Portsmouth. Construction was set to begin in October.²⁹

From Hippie Culture To Culturally Acceptable

I didn't inhale it, and never tried it again. – Bill Clinton

When I was a kid, I inhaled frequently. That was the point.

– Barack Obama

Graph 1 illustrates how swiftly perceptions about marijuana have changed in the United States. In 1969, only 12% of those surveyed thought marijuana should be legalized. Even at the turn of the current century, only 31% of respondents were in favor of legalization. By 2013, a majority of respondents were in favor. And, in 2018, almost two-thirds of Americans reported they thought marijuana should be legalized. The most recent survey found broad support for legalization among millennials (74%), Gen Xers (63%) and baby boomers (54%).

Recent surveys of Virginians reflect the national data. Polls by Quinnipiac University in 2015 and 2017 found that a majority of Virginians supported adults being able to legally possess small amounts of marijuana. The 2017 Quinnipiac poll also found that an overwhelming 92% of Virginians supported marijuana use for medical purposes with a doctor's prescription.³⁰ A March 2018 Christopher Newport University poll revealed that 76% of Virginians favored decriminalizing possession of small amounts of marijuana.³¹

Public perceptions of marijuana are changing because more Americans have used marijuana. The National Survey of Drug Use and Health (NSDUH) collects data at the national, state and sub-state level on drug use, abuse and mental health. The latest survey illustrates the rise in marijuana's popularity relative to other drugs. The percentage of respondents who reported using marijuana in their lifetime increased from 42.7% in 2002 to 48.2% in 2017 (Graph 2). Across the same time period, reported use of LSD declined while cocaine usage increased slightly. Usage

²⁹ <https://www.pilotonline.com/business/vp-bz-cativa-cbd-portsmouth-20190909-dv6n3byg6fbfpiv5itbs4zq7ja-story.html>.

³⁰ <https://poll.qu.edu/virginia/release-detail?ReleaseID=2451> (2017 VA poll).

³¹ <https://bloximages.newyork1.vip.townnews.com/pilotonline.com/content/tncms/assets/v3/editorial/c/77/c77f8ee9-f7c3-5208-810e-5a45e762a3ee/5a7b20dfb8755.pdf>.

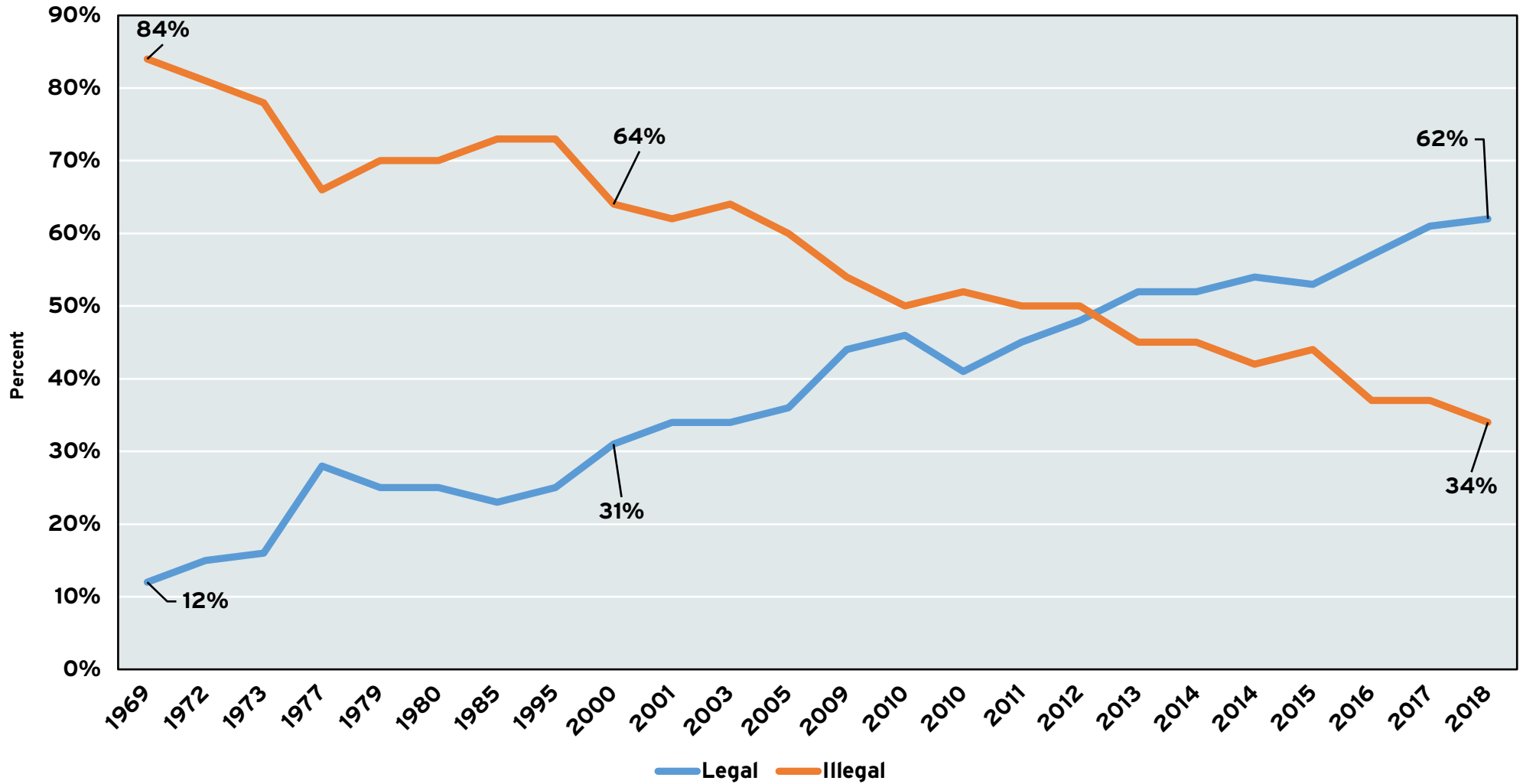
of crack cocaine remained unchanged. It appears that marijuana has reached a tipping point, where a majority of the population has tried it, supports its legalization for personal use and overwhelmingly supports its use for medical purposes.

As marijuana use by adults has increased over time and is now legalized or decriminalized in a number of states, we compare its use in the previous month with two of the most popular legal substances: alcohol and cigarettes (Graph 3). Since 2002, while alcohol usage in the past month by Americans 18 and older has increased only at an average rate of 0.1% a year, cigarette use has declined at an annual rate of 2.3% a year.³² Reported marijuana use grew at a 3.4% annual rate over the period. The increasing acceptance of marijuana coincides with the decline of use of cigarettes and tobacco.



³² We estimate the compound annual growth rate (CAGR) to determine the average annual growth or decline in each substance over the period in question. CAGR is equal to $(\text{End Value}/\text{Start Value})^{(1/\text{Number of Periods})} - 1$.

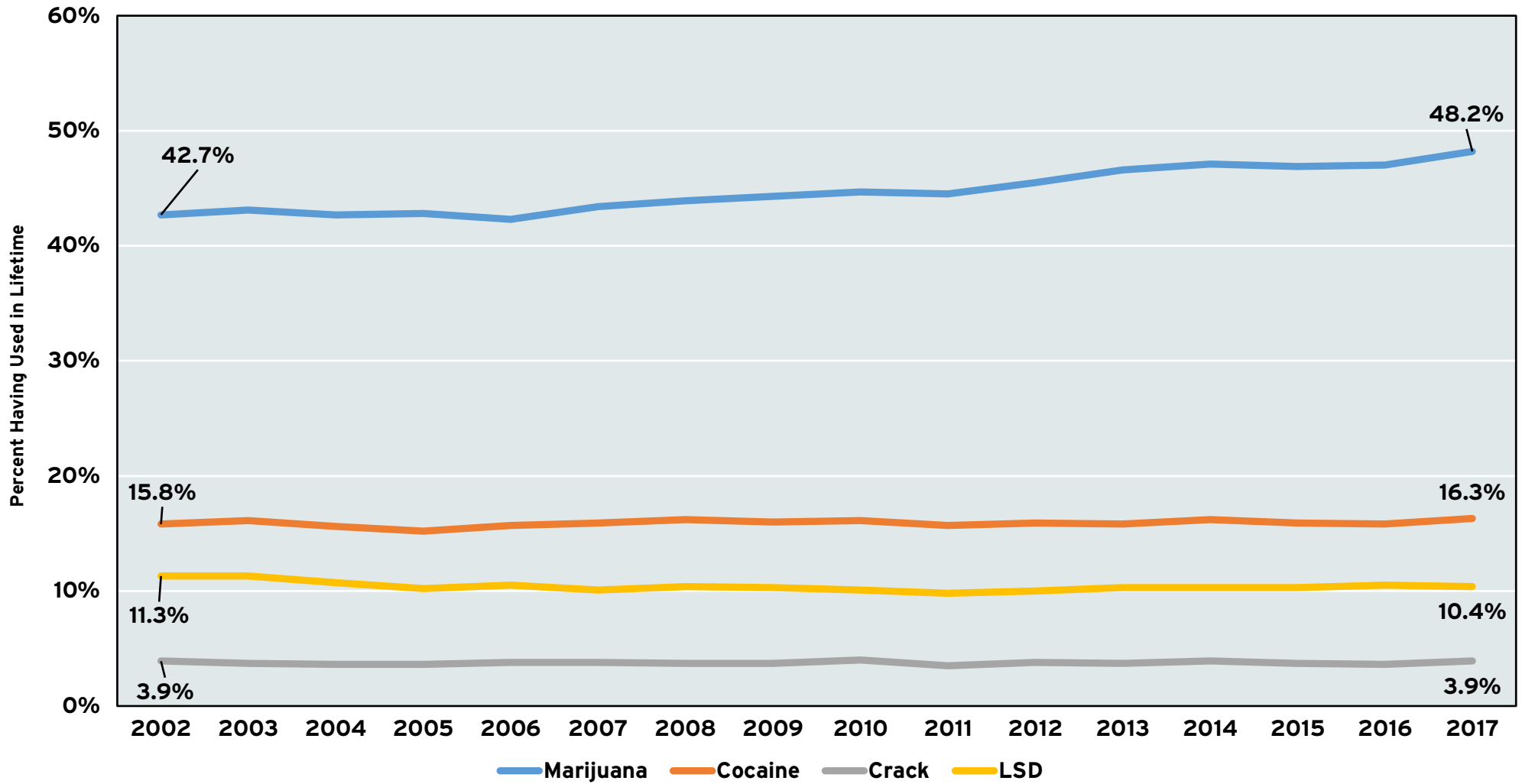
GRAPH 1
PEW RESEARCH POLL ON LEGALIZING MARIJUANA:
UNITED STATES, 1969-2018



Source: Pew Research Center (2018)

GRAPH 2

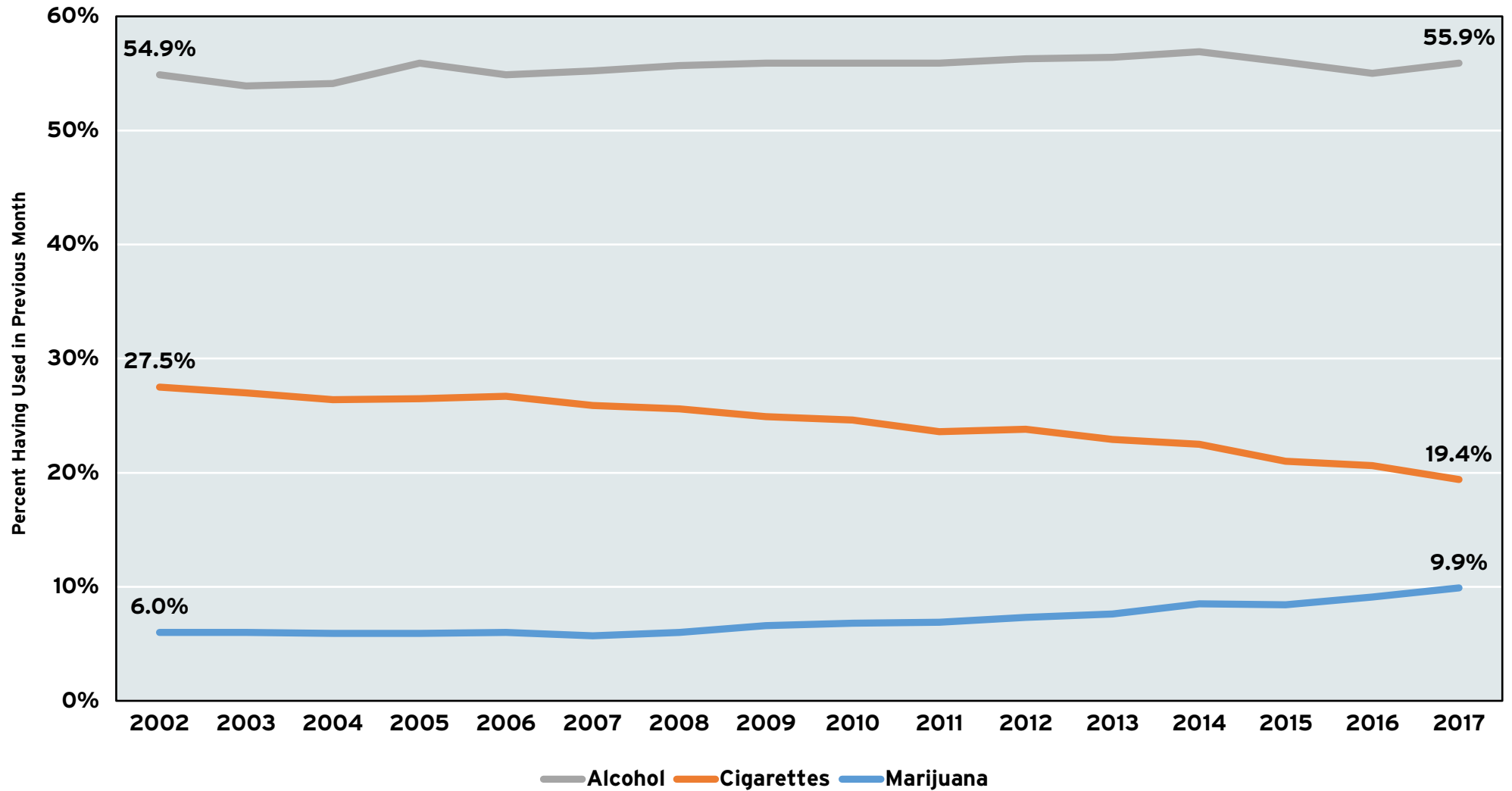
**SELECTED TYPES OF ILLICIT DRUG USE IN LIFETIME AMONG PERSONS AGES 18 OR OLDER:
UNITED STATES, 2002-2017**



Source: Substance Abuse and Mental Health Services Administration, 2017 National Survey of Drug Use and Health, Table 7.7B

GRAPH 3

**USE OF ALCOHOL, CIGARETTES AND MARIJUANA IN THE PREVIOUS MONTH AMONG PERSONS AGES 18 OR OLDER:
UNITED STATES, 2002-2017**



Source: Substance Abuse and Mental Health Services Administration, 2017 National Survey of Drug Use and Health, Tables 7.9B and 7.18B

Diving into the national data, more than 53% of males and almost 44% of females reported having used marijuana at least once, with 18% of males and 12% of females reporting having used it in the past year. Examining respondents by race yields an interesting observation: Whites are more likely than African Americans or Hispanics to have used marijuana in their lifetime (Table 2). On the other hand, African Americans used marijuana in a slightly greater proportion in the past year and month than whites or Hispanics.

TABLE 2
MARIJUANA USE BY RACE, AGES 18 AND OLDER:
UNITED STATES, 2017

	LIFETIME	PAST YEAR	PAST MONTH
White	53.8%	15.8%	10.1%
Black or African American	45.5%	17.9%	12.2%
American Indian	63.8%	24.2%	15.6%
Native Hawaiian	45.9%	11.7%	9.7%
Asian	20.6%	7.2%	3.8%
Two or More Races	59.9%	24.1%	16.7%
Hispanic or Latino	36.0%	13.1%	8.5%

Source: Substance Abuse and Mental Health Services Administration, 2017 National Survey of Drug Use and Health, Tables 1.32B, 1.33B and 1.34B

Marijuana use increases with education and falls with employment (Table 3). While some may believe marijuana is used predominantly by “slackers,” the survey evidence suggests that usage is highest among those who have attended some college. College graduates and those who did not graduate from high school report the same usage over the previous year, although college graduates have the lowest usage rates in the previous month. On the other hand, marijuana usage rates are the highest among the unemployed. **It may be that continued marijuana use lowers employability, which, in turn, leads to increased use. However, 1 out of 10 full-time employed respondents reported using marijuana in the past month.**

TABLE 3
MARIJUANA USE BY EDUCATION AND EMPLOYMENT,
AGES 18 AND OLDER: UNITED STATES, 2017

	LIFETIME	PAST YEAR	PAST MONTH
Less than high school	35.2%	13.3%	9.3%
High school graduate	45.2%	15.2%	10.7%
Some college/ associate degree	54.6%	18.3%	11.9%
College graduate	49.3%	13.3%	7.5%
Full-time employment	54.6%	16.6%	10.4%
Part-time employment	51.1%	19.7%	13.0%
Unemployed	53.3%	27.4%	17.6%
Other	36.7%	10.1%	6.8%

Source: Substance Abuse and Mental Health Services Administration, 2017 National Survey of Drug Use and Health, Tables 1.32B, 1.33B and 1.34B

Is Marijuana A Gateway Drug?

As an increasing number of Americans are using marijuana on a more frequent basis, the debate whether marijuana is a gateway drug continues to boil. A 2015 study examined the responses of 6,624 survey participants who used marijuana prior to any other drug.³³ Almost 45% of individuals who had used marijuana in their lifetimes progressed, at some point, to other illegal substances. Other potential indicators of substance abuse include being male, living in an urban area, never being married, being separated or divorced, having a psychiatric disorder or a family history of substance abuse, and using marijuana at an early age.

These findings echoed previous studies suggesting that a significant (but not dominant) proportion of marijuana users experimented with other illegal drugs at some point in their lives.³⁴ There are several arguments why this progression from marijuana to other drugs may occur. First, marijuana users (in states where it is illegal) are exposed to other illegal drugs because the supply channels overlap. Second, marijuana provides a pleasurable experience that may encourage experimentation with other illegal substances. Marijuana use may also “condition” the brain to be more sensitive to the pleasurable effects of other drugs. Finally, if one is under the influence of marijuana, there is a potential loss of self-control and increased likelihood of experimentation with other drugs.³⁵ However, the National Institute on Drug Abuse also recently noted that the majority of people who use marijuana do not go on to use other substances.³⁶ While there is strong evidence that marijuana may act as a gateway drug for some users, the same also may be said about two legal substances, alcohol and tobacco. Cigarette use, for example, may increase the risk of cocaine addiction.³⁷ A 2012 study of high school students found that alcohol, not marijuana, was the gateway drug. Alcohol use led to tobacco, marijuana and other substance use.³⁸

An alternative to the gateway hypothesis is that people who are more likely to use drugs start with readily available substances (alcohol, marijuana, tobacco). A portion of these individuals then, whether through social interaction or “priming the brain,” then transition to other substances. If marijuana was not available, individuals would start elsewhere, and some would eventually transition to “harder” drugs. From this perspective, marijuana, by itself, is not a gateway drug. Individual characteristics and social conditions determine whether there is a transition path to other substances, not the use of marijuana.

Regardless of whether one accepts or rejects the argument that marijuana is a gateway drug, there is a degree of commonality among these arguments. At some point, some people will use marijuana along the path

toward using other drugs. Whether the starting point is alcohol, tobacco or marijuana, we need to recognize that awareness, intervention and treatment may be more effective earlier rather than later. For the majority of marijuana users, however, the evidence suggests that marijuana (for now) is not a door to harder drugs.

Who Uses Marijuana In Virginia?

Given that the national survey data suggest more than 50% of Americans have used marijuana in their lifetimes and almost 10% in the previous month, how many residents of Virginia use marijuana? Since the 2002-2004 survey, the percentage of those who used marijuana in Virginia in the previous year increased from 9.1% to 12.3% in 2012-2014 before falling to 11.5% in the most recent survey available (Graph 4). Usage in the previous month also increased from 5.4% to 6.7%. The use of marijuana in Virginia, however, is well behind that of Colorado, where nearly 1 in 4 respondents 18 and older used marijuana in the previous year.

We compare marijuana use across the health services areas within Virginia in Graph 5. Eastern Virginia (HSA 5) had the highest proportion of adults 18 and older who used marijuana in the past year and was only slightly behind HSA 4 (Central) in terms of usage in the previous month. Northern Virginia (HSA 2) had the lowest reported usage of marijuana in the Commonwealth.

34 A. Agrawal, M.C. Neale, C.A. Prescott and K.S. Kendler, “A twin study of early cannabis use and subsequent use and abuse/dependence of other illicit drugs,” *Psychological Medicine*, 2004; 34(7):1227-1237. K. Van Gundy and C.J. Rebellon, “A Life-course Perspective on the ‘Gateway Hypothesis,’” *Journal of Health and Social Behavior*, 2010; 51(3):244-259.

35 T.J. Dishion and L.D. Owen, “A longitudinal analysis of friendships and substance use: bidirectional influence from adolescence to adulthood,” *Developmental Psychology*, 2002; 38(4):480-491. M. Ellgren, S.M. Spano and Y.L. Hurd, “Adolescent cannabis exposure alters opiate intake and opioid limbic neuronal populations in adult rats,” *Neuropsychopharmacology*, March 2007; 32(3):607-15.

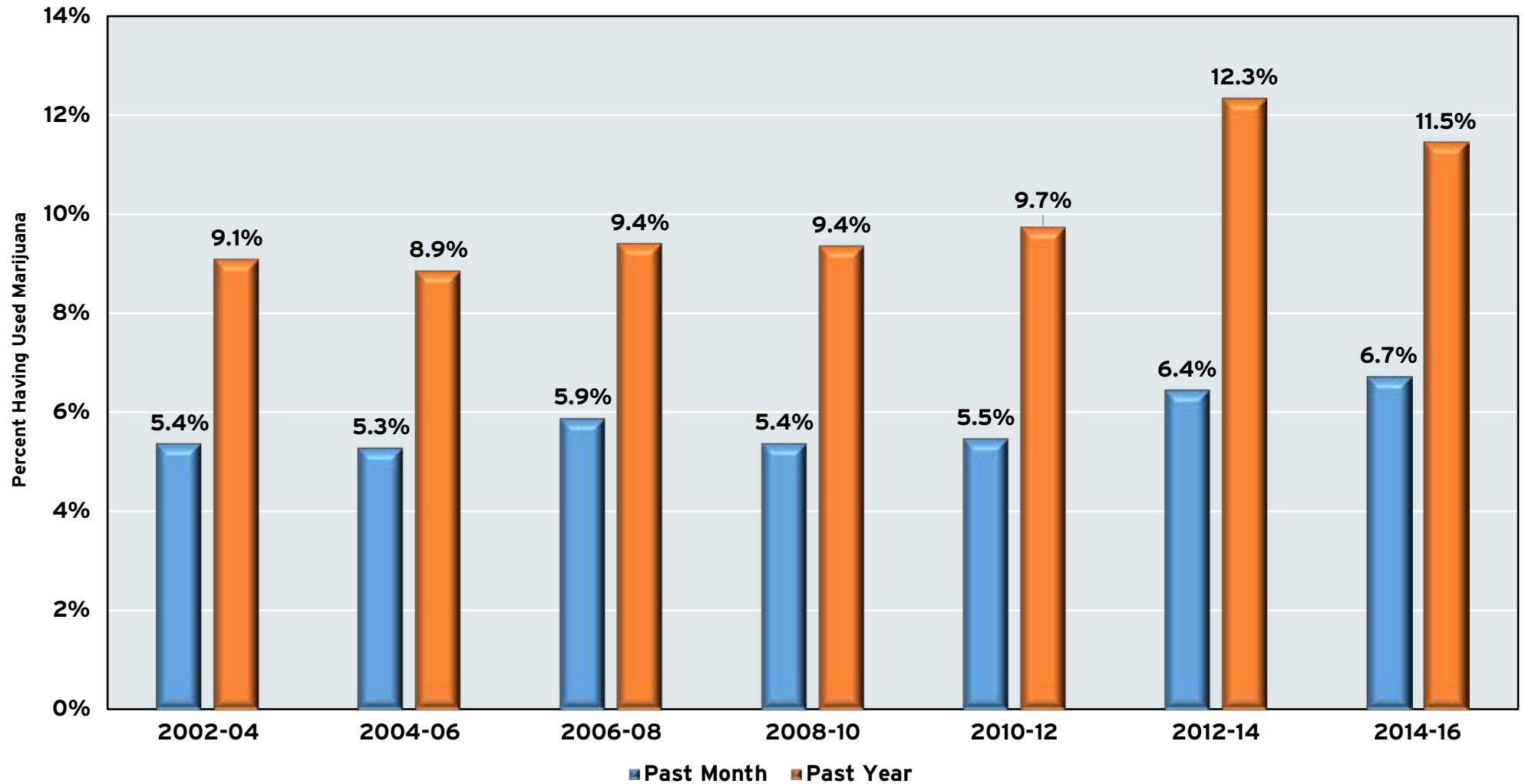
36 <https://www.drugabuse.gov/publications/research-reports/marijuana/marijuana-gateway-drug>.

37 A. Levine, Y. Huang, B. Drisaldi, et al., “Molecular mechanism for a gateway drug: epigenetic changes initiated by nicotine prime gene expression by cocaine,” *Science Translational Medicine*, 2011; 3(107):107ra109. doi:10.1126/scitranslmed.3003062.

38 T. Kirby and A.E. Barry, (2012), “Alcohol as a Gateway Drug: A Study of US 12th Graders,” *Journal of School Health*, 82: 371-379. doi:10.1111/j.1746-1561.2012.00712.

GRAPH 4

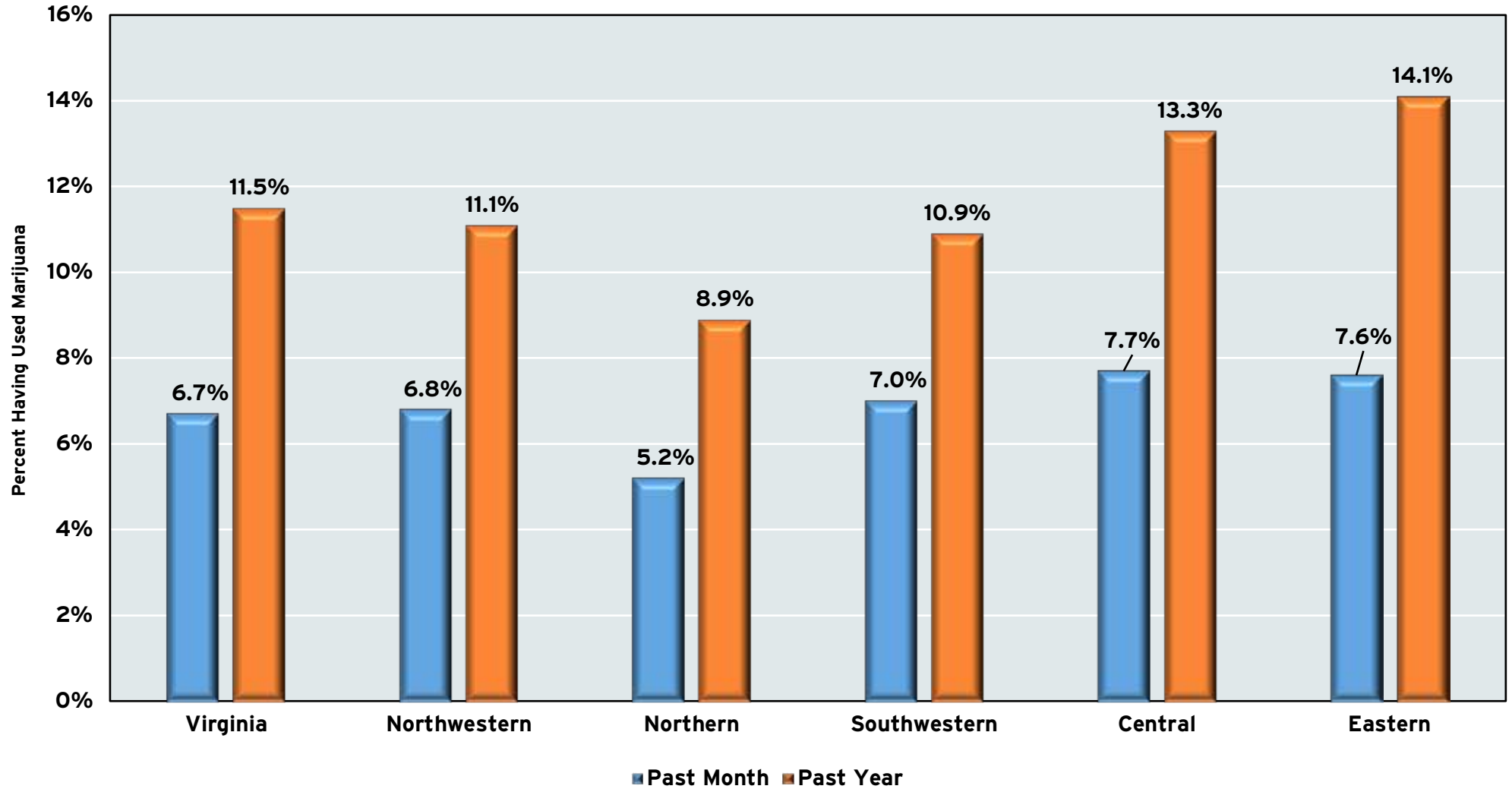
**USAGE OF MARIJUANA IN PREVIOUS YEAR AND PREVIOUS MONTH, AGES 18 OR OLDER:
VIRGINIA, 2002-2016**



Source: National Survey of Drug Use and Health, Substate Surveys, various years, Virginia: <https://pdas.samhsa.gov/saes/substate>

GRAPH 5

**MARIJUANA USE BY VIRGINIA HEALTH SERVICES AREA, 2017:
18 YEARS AND OLDER**



Source: National Survey of Drug Use and Health, 2014-2016 Substate Survey: <https://pdas.samhsa.gov/saes/substate>

Lastly, we examine usage of alcohol, tobacco and marijuana in Virginia by Health Services Area in Table 4. Alcohol is clearly the substance of choice, with 56% of adults replying that they had used alcohol in the previous month. Almost 27% of adults 18 and older replied that they had used some form of tobacco in the previous month. While alcohol and tobacco usage in Virginia mirrors the nation, marijuana usage falls below the national average. Nearly 8% of individuals ages 18 and older replied that they had used marijuana in the previous month in Virginia HSA 4, the highest rate in the state. All HSAs in Virginia have marijuana use percentages below the national average.

TABLE 4

USAGE OF ALCOHOL, TOBACCO AND MARIJUANA IN THE PREVIOUS MONTH: AGE 18 AND OLDER, HSAs IN VIRGINIA, 2016

	ALCOHOL	TOBACCO	MARIJUANA
United States	55.9%	26.1%	8.7%
Virginia	56.0%	26.6%	6.7%
Northwest (HSA I)	56.4%	27.1%	6.8%
Northern (HSA II)	60.6%	16.9%	5.2%
Southwestern (HSA III)	46.5%	37.2%	7.0%
Central (HSA IV)	56.9%	28.7%	7.7%
Eastern (HSA V)	56.4%	28.9%	7.6%

Source: National Survey of Drug Use and Health, 2014-2016 Substate Survey. Available at <https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHsubstateAgeGroupTabs2016/NSDUHsubstateAgeGroupTabs2016.pdf>.

Marijuana Possession And Arrests

Because marijuana possession is illegal in Virginia, the law requires that individuals in possession of marijuana, in almost every circumstance, be subject to a law enforcement action. The Virginia State Police (VSP) collects and makes publicly available crime data from law enforcement agencies within the state. In general, two types of data are captured: incident and arrest data. Since the VSP notes that arrest data are the primary measure of police activity as it relates to crime, we use arrest data in this section.³⁹

This decade, law enforcement officers made almost 390,000 arrests for drug-related crimes in Virginia. Fifty-nine percent of these arrests from 2010 to 2018 were for marijuana-related crimes, and marijuana possession or concealment was the charge in a preponderance of the arrests. Graph 6 illustrates that for each year this decade, more than half of all drug arrests were for marijuana possession or concealment.

A potential critique is that an individual could be arrested for multiple offenses - that is, assault and marijuana possession or theft and marijuana possession. The marijuana offense would be incidental, overshadowed by the more egregious crime. To examine whether this critique is valid, we filtered the data to exclude arrests where the number of offenses was two or more or where the arrest type was not for a drug or narcotics offense. Of the 198,388 arrests for marijuana possession or concealment from 2010 to 2018 in the Commonwealth, 84.3% were for a single drug or narcotics offense. Marijuana possession was the primary driver of total drug arrests in Virginia.

Regardless of one’s opinion about the legal status of marijuana in the Commonwealth, the data clearly illustrate that the majority of drug arrests in Virginia this decade were for the possession or concealment of marijuana. Furthermore, the Virginia State Crime Commission (VSCC) also estimated that 84% of marijuana possession arrests from 2007 to 2016

³⁹ As noted by the Crime in Virginia Report (2018), “Although law enforcement arrest policies vary, particularly with respect to juveniles, agencies are instructed to count one arrest each time an individual is taken into custody for committing one or more offenses. A juvenile arrest is counted when an offense is committed and the circumstances are such that if the juvenile had been an adult, an arrest would have been made.” The Crime in Virginia data are publicly available at: <https://va.beyond2020.com/>.

were first-time arrests.⁴⁰ Even though it is rare for an offender to receive confinement for a first-time offense, the VSCC found that on one day in July 2017, 127 inmates were in jail solely for a marijuana charge. The estimated cost to taxpayers was more than \$10,000 a day to incarcerate these inmates. In a recent opinion piece, Virginia Attorney General Mark Herring stated that marijuana enforcement costs amounted to at least \$81 million a year.⁴¹ This figure does not include the “opportunity costs” of enforcement – that is, the effort and attention that could be redirected to other crimes.

We now turn our attention to arrests in Virginia metropolitan areas. In Graph 7, we present the arrests per 100,000 residents for possession or concealment by racial group in Virginia metro areas. We divide the number of arrests by the population of each racial group to allow a direct comparison. We note that an individual could be arrested multiple times in a year for the same offense, so the arrests closely (but do not perfectly) correspond to the arrest rate for the population of each group.

We first remind the reader that national surveys do not show a stark difference in marijuana usage by race. For the most recent survey in 2017, whites were about seven percentage points more likely than blacks or African Americans to have used marijuana in their lifetime. Blacks or African Americans, on the other hand, were about two percentage points more likely to have used marijuana in the previous year or month. In 2018, there were 219.3 arrests of individuals who identified as white per 100,000 white residents and 771.9 arrests of individuals who identified as black or African American per 100,000 black or African American residents of the Commonwealth. Blacksburg had the largest racial disparity of marijuana arrests in 2018: arrests per 100,000 residents were 241.0 and 1,528.6 for whites and blacks or African Americans, respectively.

The disparity between white and African American arrests per 100,000 residents is apparent for every metropolitan area in the Commonwealth. Even though arrests per 100,000 residents in Charlottesville and Lynchburg were well below the state average in 2018, the disparity between white and African American arrests relative to the population of each group was still prevalent. Relative

to the population of each race in Charlottesville, for example, African American arrests per 100,000 were more than three times higher than white arrests per 100,000. In Hampton Roads, African American arrests per 100,000 were 5.4 times higher than white arrests per 100,000. While the arrest rates may fluctuate from year to year, the disparities between the arrest rates of whites and African Americans are persistent over time.

There are several possible explanations for the disparities in arrests relative to the population of each racial group. First, the arrest data do not capture the residence of the offender. If a significant number of out-of-state offenders were being arrested in Virginia or one of its metro areas, this possibly could bias the arrest data. However, the volume and persistence of the disparities across jurisdictions cast doubt on this argument. Second, explicit racial bias may occur, which would lead to a higher number of encounters for African Americans, and thus a higher number of arrests. However, the increasing prevalence of mobile phones, police body cameras and civil rights monitoring may cast doubt on this hypothesis. Third, unconscious racial bias may result in more frequent “chance” encounters that, in turn, lead to arrests. The argument, for example, that “driving while black” is a form of profiling continues to reverberate throughout popular culture and there is mounting empirical evidence that profiling occurs.⁴² Fourth, policing decisions may lead to the concentration of scarce resources in areas overrepresented with minority populations. More police presence to deter crime creates more contacts with residents, which, in turn, leads to more arrests. Fifth, there is a possibility (however remote) that marijuana usage rates in some of Virginia’s metro areas differ dramatically from the nation and thus the disparities in arrests reflect these differences in use. Finally, it is entirely possible that there is no single reason, and that the disparities are a result of many socioeconomic factors. While these debates are outside the scope of this chapter, we recognize these discussions are worth having to improve the Commonwealth. We must also recognize that these disparities are, in part, driving the discussion of what to do about marijuana in Virginia.

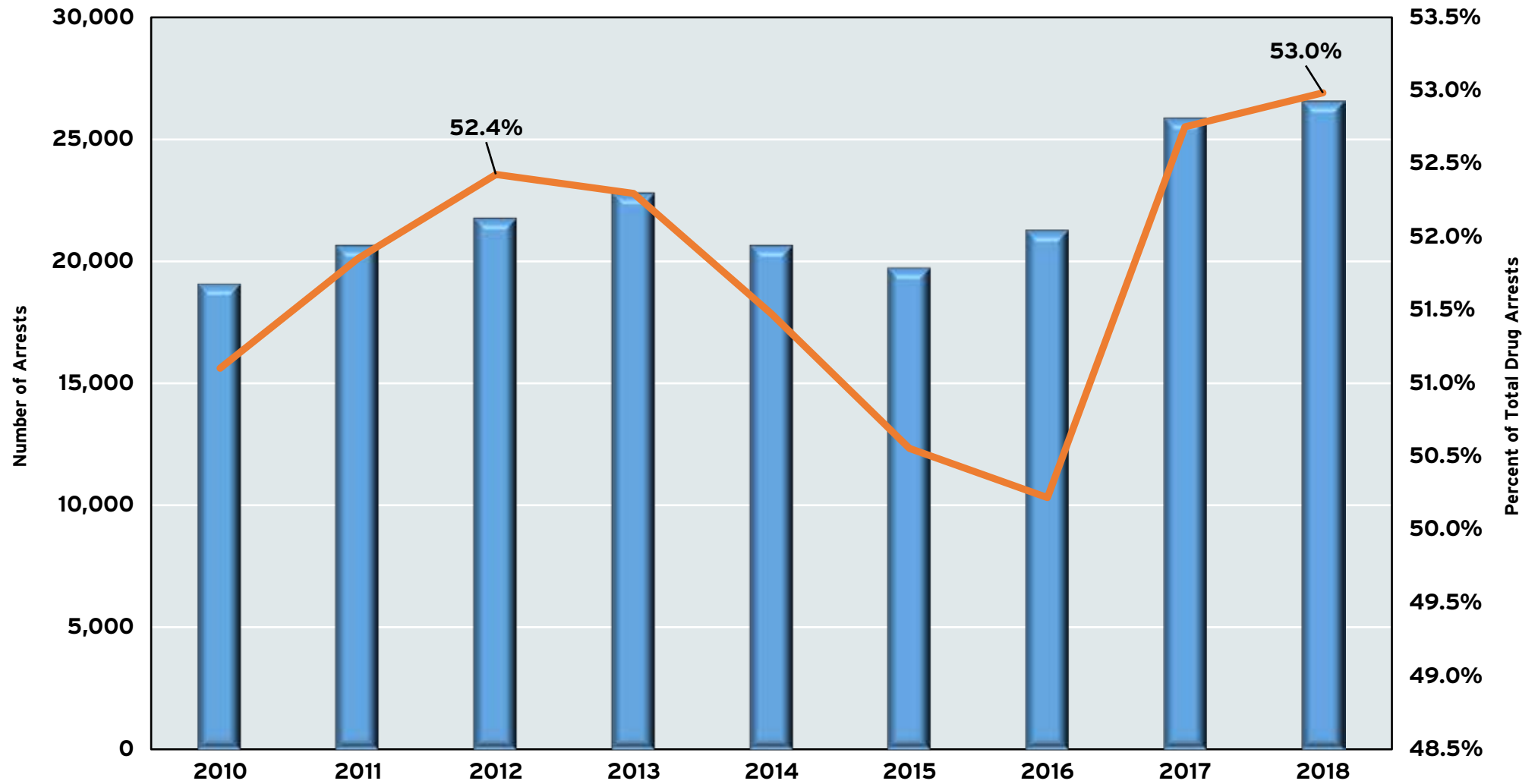
40 Virginia State Crime Commission (2017), <http://vscv.virginia.gov/reports.asp>. The data may overrepresent the percentage of first-time arrests and should be viewed as an upper bound on first-time arrests.

41 <https://www.dailypress.com/news/opinion/local-voices/dp-edt-oped-herring-decriminalize-marijuana-0616-story.html>.

42 <https://www.economist.com/graphic-detail/2019/03/15/black-drivers-in-america-face-discrimination-by-the-police>.

GRAPH 6

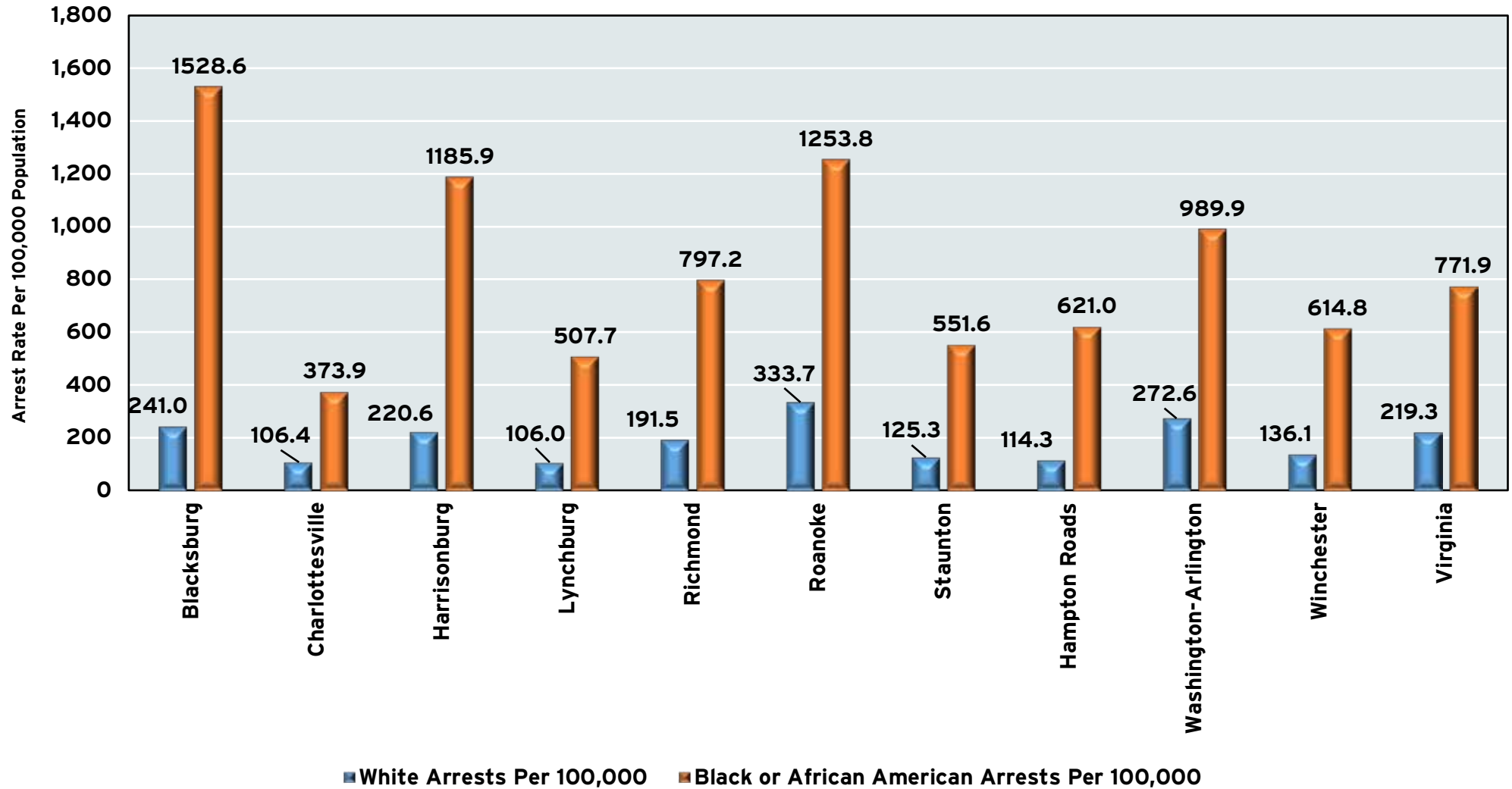
**ARRESTS FOR MARIJUANA POSSESSION OR CONCEALMENT:
TOTALS AND AS A PERCENTAGE OF ALL DRUG ARRESTS IN VIRGINIA, 2010-2018**



Source: Virginia State Police, Virginia Crime Data: Arrest Drug Activity, Various Years; Marijuana Arrests for Possessing/Concealing and Totals for Arrest Drug Type for Records with Drug Identifier

GRAPH 7

**ARRESTS FOR MARIJUANA POSSESSION OR CONCEALMENT PER 100,000 POPULATION:
SELECTED VIRGINIA METROPOLITAN AREAS, 2018**



Sources: Virginia State Police (2019), Crime in Virginia Microdata; U.S. Census Bureau, Population Estimates by Race (2018); and the Dragas Center for Economic Analysis and Policy, Old Dominion University. All possession and concealment arrests are included in the analysis.

Decriminalization Versus Legalization

With a growing number of legislators and government officials calling for action to change the consequences of marijuana possession or the legal status of marijuana possession for personal use in Virginia, we briefly review the differences between the two broad policy actions: decriminalization and legalization.⁴³ There are significant legal and policy differences between legalization and decriminalization, including the amount of marijuana in question, which may vary from an ounce (in most legalized states) or less (in most decriminalized states). Furthermore, either of these actions would occur in an environment where the federal government still classifies marijuana as a Schedule 1 substance.

DECRIMINALIZATION: DIPPING A TOE INTO THE LEGALIZATION POOL

Decriminalization reduces or eliminates the criminal penalties for possessing small amounts of marijuana for personal use. Marijuana possession is typically punished with a civil or criminal fine for the first offense. Subsequent offenses may result in the same fine, an increased fine or an increased fine and confinement. Subsequent offenses may remain civil (noncriminal) or result in a criminal offense. As illustrated in Table 5, the penalties for a first offense of the possession of recreational amounts of marijuana vary from \$50 in New Mexico to \$300 in Minnesota and Nebraska. Of those states that have decriminalized possession of recreational amounts of marijuana, North Carolina's approach is considered among the most punitive, as the offender may be issued a summons or arrested. A recent investigation in Charlotte found that African Americans are more prone than whites to be arrested than cited for possession.⁴⁴

What is common among the states that have decriminalized marijuana is that it remains illegal to consume it in public, to cultivate it for personal use, or to distribute or sell recreational amounts of marijuana. If one is in possession of more marijuana than allowed in the statute, penalties can range from a criminal misdemeanor to a felony. In Delaware, for example, possession of more than one ounce is punishable by up to three months in jail and a \$575 fine. In Connecticut, possession of more than half an ounce is punishable by up to one year in jail and a \$2,000 fine.

One motivation for decriminalization is that it (generally) removes the criminal penalty for first-offense marijuana possession for personal use. Lowering the penalty for possession not only should benefit the individual, but also should lower the number of arrests and thus the expenditure of resources for enforcing marijuana laws. Examining data collected by the Federal Bureau of Investigation (FBI), we compare arrest rates for marijuana possession per 100,000 residents for Virginia and selected decriminalized states for 2010 and 2017 (Graph 8).⁴⁵

Among the states in Graph 8, Connecticut and Maryland recently changed the penalty for the first offense for marijuana possession for personal use. Since 2011, possession of a half-ounce or less in Connecticut is a civil violation. Arrests for possession fell from 8,322 in 2010 to 1,946 in 2017, a decline of 76%. Maryland decriminalized possession of 10 grams or less of marijuana in 2014. Arrests for possession dropped from 23,390 in 2010 to 15,170 in 2017, a decline of 35%. It is worth noting that Maryland's arrest rate per 100,000 residents for marijuana possession in 2017 remains among the highest among decriminalized states. Decriminalization has reduced arrests but not as dramatically as proponents would argue.

⁴³ We do not include a discussion of removing the jail sentence for possession of marijuana. The Virginia State Crime Commission noted in 2017 that jail time is rarely imposed for many possession charges. Furthermore, removing the prospect of jail time would remove the right of indigent defendants to counsel.

⁴⁴ <https://www.charlotteobserver.com/news/local/crime/article60170981.html>.

⁴⁵ As a person may be arrested multiple times a year, the arrest data do not show the number of individuals arrested, but rather the number of times individuals are arrested.

TABLE 5

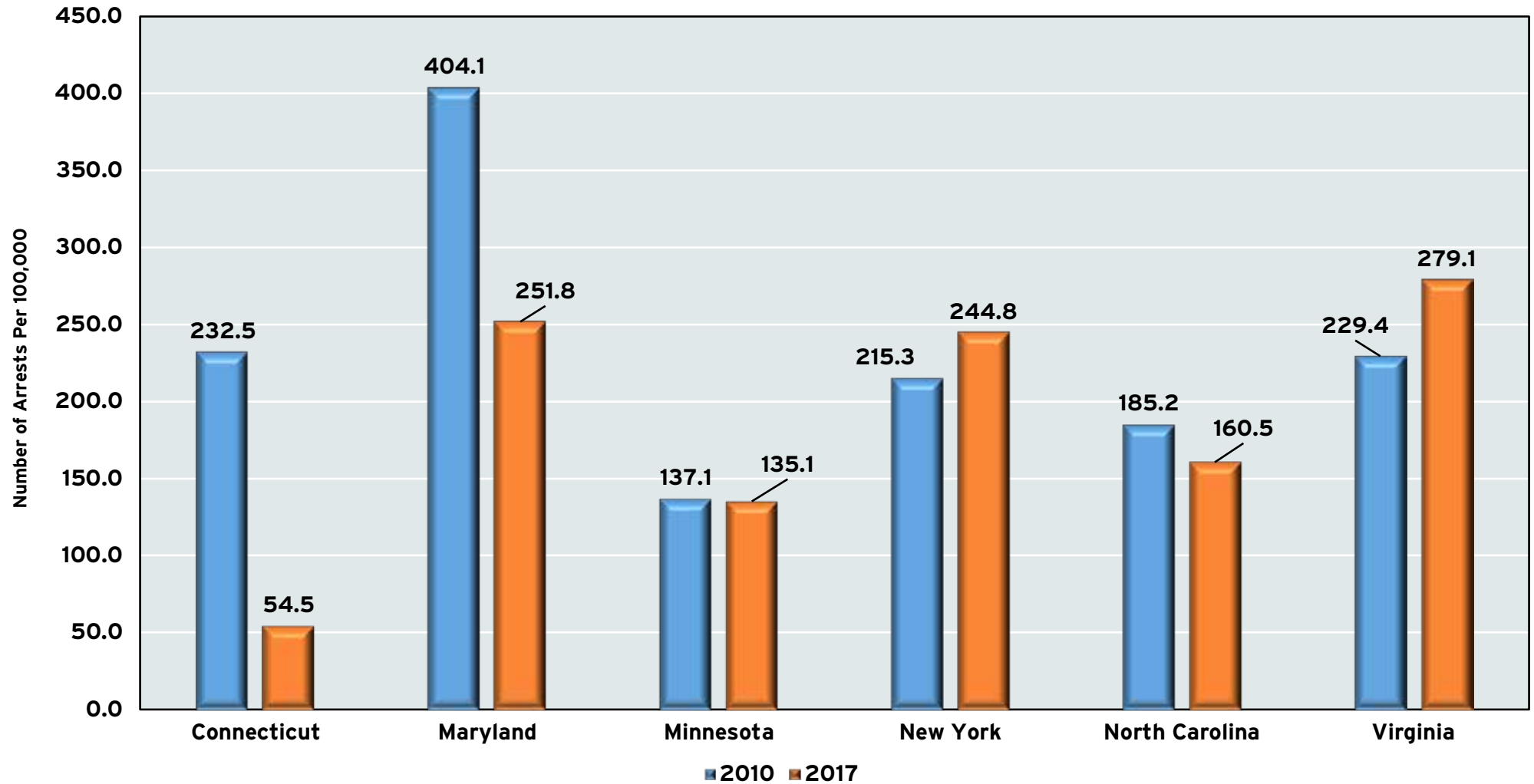
SUMMARY OF STATE DECRIMINALIZATION LAWS AS OF JUNE 2019

STATE	AMOUNT OF MARIJUANA	CIVIL OR CRIMINAL FIRST OFFENSE	FIRST OFFENSE/ CONVICTION	SECOND OFFENSE/CONVICTION
Connecticut	0.5 ounce or less	Civil	\$150 fine	\$200 to \$500 fine
Delaware	One ounce or less	Civil	\$100 civil fine if 18 or older	Same as first offense for 21 and older, \$100 criminal fine for ages 18-20
Hawaii	Up to 3 grams (0.105 oz.)	Civil	Up to \$130 fine	Same as first offense
Maine	2.5 ounces or less Six plants	Civil	No penalty for 21 and older Under 21: \$350 to \$1,000 fine	Same as first offense
Maryland	10 grams (0.35 oz.) or less	Civil	\$100 fine	Second offense: \$250 fine Subsequent: \$500 fine
Minnesota	42.5 grams (1.5 oz.) or less	Criminal misdemeanor	\$300 fine	Same as first offense
Mississippi	30 grams (1.06 oz.) or less	Civil	\$100 to \$250 fine	Within two years - \$250 fine and 5 to 60 days in jail
Missouri	10 grams (0.35 oz.) or less	Criminal misdemeanor	\$250 to \$1,000 fine	Up to one year in jail and a fine up to \$2,000
Nebraska	One ounce or less	Civil	\$300 fine	Second offense: \$400 fine, up to 5 days in jail Third offense: \$500, up to 7 days in jail
New Hampshire	0.75 ounce or less	Civil	Adults: \$100 fine	Second offense: \$100 fine; Third offense: \$300 fine; Fourth offense within 3 years: up to \$1,200 criminal fine
New Mexico	0.5 ounce or less	Civil	\$50 fine	Same as first penalty
New York	One ounce	Civil	\$50 fine	Same as first penalty
North Carolina	0.5 ounce or less	Criminal misdemeanor	Up to \$200 fine, possible suspended sentence	Second to fifth offense: up to \$200 fine, 0-15 days in jail, suspended
Ohio	100 grams (3.5 oz.) or less	Civil	\$50 fine	Same as first penalty
Rhode Island	One ounce or less	Civil	18 or older: \$150 fine	Third conviction within 18 months - misdemeanor punishable by \$200 to \$500 fine and/or six months in jail

Sources: Marijuana Policy Project (2019) and the Virginia State Crime Commission (2017), various state laws (2019). Information current as of June 2019. <https://www.mpp.org/issues/decriminalization/state-laws-with-alternatives-to-incarceration-for-marijuana-possession/>.

GRAPH 8

**NUMBER OF MARIJUANA POSSESSION ARRESTS PER 100,000 RESIDENTS:
SELECTED DECRIMINALIZED STATES AND VIRGINIA, 2010 AND 2017**



Sources: Federal Bureau of Investigation, National Incident-Based Reporting System, Marijuana Possession Arrests, and the U.S. Census Bureau, 2018 Population Estimates

Even if decriminalization reduced arrests by the same proportion as in Connecticut, two problems would remain: the disproportionate burden of the civil penalties relative to income and the lack of public defense for indigent offenders. And, even if the civil fine is relatively low, there are additional court costs to consider (as anyone who has had to appear in court for a traffic ticket can attest). Failure to pay could lead to other fines and even jail time. **As a percentage of income, the civil penalties would be the greatest burden on those with the least means to pay them.**

Another concern is that the shift from criminal to civil penalties removes the obligation for the state to provide counsel to defendants who otherwise could not afford a legal defense. We interviewed Gregory Underwood, commonwealth's attorney for the city of Norfolk, who directed his prosecutors to dismiss all marijuana-possession cases. He noted, "Decriminalizing marijuana possession would strip the poor of the right to be appointed lawyers who could test the constitutional basis for their citations and the sufficiency of the evidence against them. In a decriminalized system, the wealthy could afford to hire lawyers to defend them. The poor would be on their own, and they would face an even higher comparative rate of conviction than they do now."

LEGALIZATION: JUMPING IN WITH BOTH FEET?

Table 6 lists the 11 states (and the District of Columbia) that have legalized the possession of marijuana for personal use. Legalization completely removes the civil and criminal penalties for marijuana possession for personal use in one's private residence. Legalization, however, typically does not entirely remove the penalties for public consumption. Possession of amounts that are greater than the legal limit may result in a fine, arrest, or both. The sale and distribution of marijuana is typically tightly regulated by the state and is only allowed in state-licensed dispensaries. Person-to-person private transactions are, in general, subject to a criminal charge, ranging from a misdemeanor to a felony, depending on the amount being sold.

Proponents of legalization argue that it is more equitable than decriminalization, frees up more law enforcement and judicial resources and brings a shadow economy into the light. Legalization at the state level allows the state to regulate the production and sale of marijuana within its boundaries. Legalization also allows states and local governments to levy taxes on the production and sale of marijuana and marijuana-infused products. The Colorado Department of Revenue, for example, has recorded more than \$6 billion in marijuana sales since January 2014 and has collected over \$1 billion in revenue from taxes, licenses and fees since February 2014.⁴⁶

Unlike decriminalization, where the supply side of the market remains illegal, legalization removes the risk of arrest from legal growers, processors and retailers. Transparency in supply and competition among suppliers increases, enhancing the potency and dropping the price of marijuana. According to the Colorado Department of Revenue, the average retail price of a pound of marijuana fell from \$1,876 in January 2014 to \$850 in July 2019, a decline of nearly 50 percent.⁴⁷ According to Beau Kilmer, director of the RAND Drug Policy Research Center, the fall in prices in Washington and Colorado means that the cost of getting high by using marijuana is less than a couple of dollars, significantly less than the cost of the amount of alcohol to achieve a similar effect.⁴⁸

To provide an equal comparison with the decriminalized states, we examine the change in marijuana possession arrests from 2010 to 2017 for states that have legalized the possession of marijuana for personal use (Graph 9). To say that the declines in arrests have been dramatic might be an understatement. California, which reported 55,911 possession arrests in 2010, had only 3,741 arrests in 2017. Shaun Rundle, deputy director for the California Peace Officers' Association, argued that legalization might factor into police behavior. "If someone is going to be out of jail [in] six months and back on the streets – and six months is even unlikely these days – then the agencies need to divert their time and resources to the most dangerous and violent crime prevention."⁴⁹

46 Colorado Marijuana Sales Data and Marijuana Tax Data (2019), available at: <https://www.colorado.gov/pacific/revenue/colorado-marijuana-tax-data>.

47 https://www.colorado.gov/pacific/sites/default/files/AMR_PriorRates_Oct2018Edit.pdf.

48 <https://www.rand.org/blog/2018/12/navigating-cannabis-legalization-20.html>.

49 <https://www.mercurynews.com/2018/07/11/prop-64-didnt-legalize-every-cannabis-crime-but-arrests-are-falling-fast/>.

TABLE 6

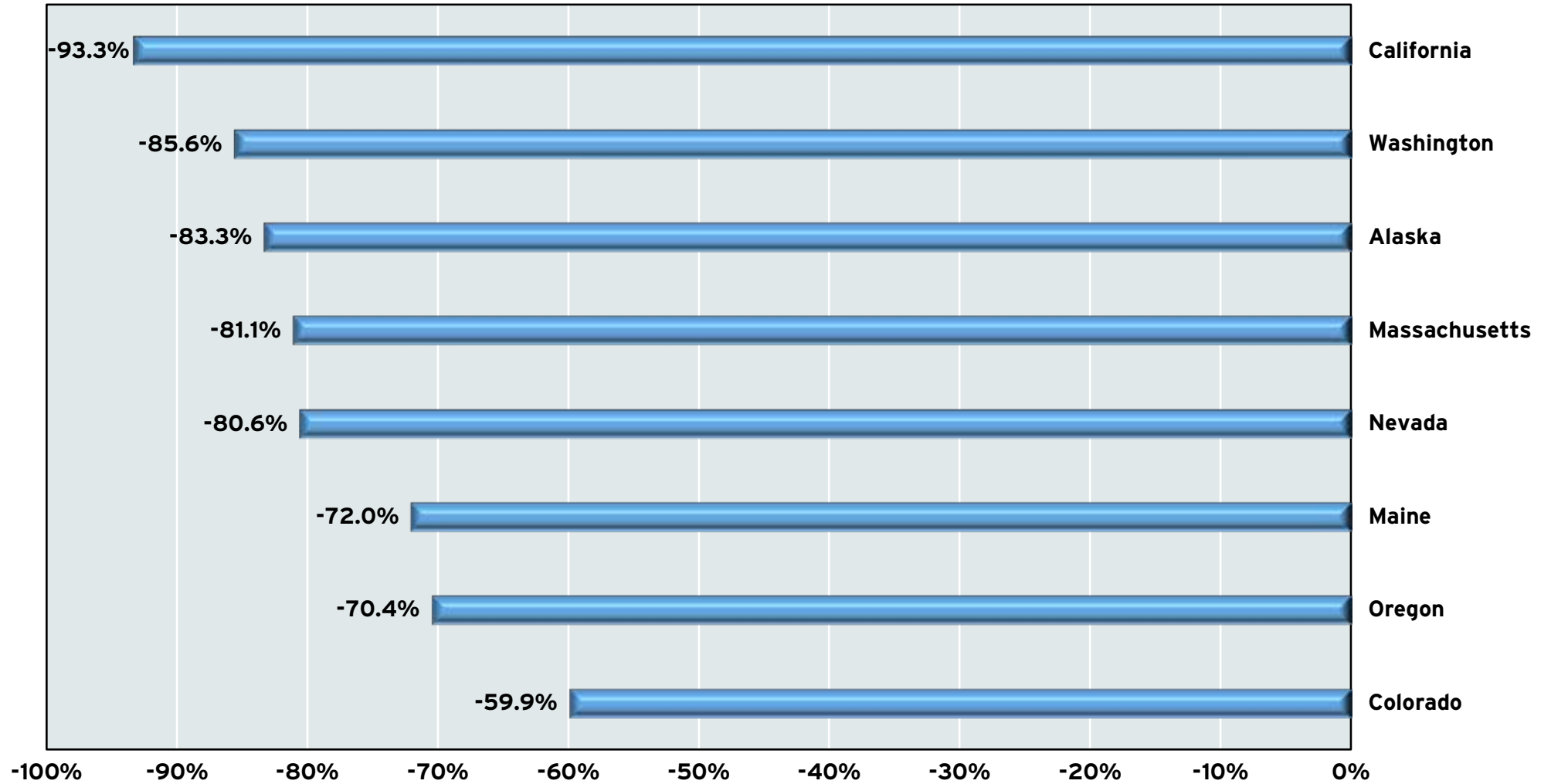
SUMMARY OF STATE LEGALIZATION LAWS AS OF JUNE 2019

STATE	YEAR OF LEGALIZATION	AGE	LEGAL AMOUNT OF MARIJUANA	PUBLIC CONSUMPTION
Alaska	2014	21 years or older	1-4 ounces, six plants in private	Civil violation, \$100 fine
California	2016	21 years or older	Up to 1 ounce, six plants	Criminal misdemeanor to loiter in public with intent to commit marijuana offenses
Colorado	2012	21 years or older	Up to 1 ounce, six plants	Civil violation to display or use more than 2 ounces, \$100 fine
District of Columbia	2014	21 years or older	Up to 2 ounces, six plants	Criminal misdemeanor, citation and release
Illinois	2019	21 years or older	10 grams (0.35 oz.) or less	Civil violation, \$200 fine
Maine	2016	21 years or older	Up to 2.5 ounces, three plants	Civil infraction, \$100 fine
Massachusetts	2016	21 years or older	Up to 10 ounces in private, up to 1 ounce in public, six plants	Civil infraction, \$100 fine
Michigan	2018	21 years or older	Up to 10 ounces in private, up to 2.5 ounces in public, fewer than 12 plants	Civil infraction, \$100 fine
Nevada	2016	21 years or older	Up to 1 ounce, six plants	Criminal misdemeanor, \$600 fine
Oregon	2014	21 years or older	Up to 1 ounce in public, up to 8 ounces in private, four plants	No fine or penalty for up to 1 ounce in public
Vermont	2018	21 years or older	Up to 1 ounce, six plants	Civil violation, \$100 fine
Washington	2012	21 years or older	1 ounce or less for private consumption	Civil penalty, 1 ounce or less, \$100 fine

Sources: National Organization for the Reform of Marijuana Laws (2019), various state laws (2019). Information current as of June 2019, <https://norml.org/legal/legalization>. Vermont Marijuana Laws (2019), <https://statelaws.findlaw.com/vermont-law/vermont-marijuana-laws.html>. National Conference of State Legislatures (2019), Marijuana Overview (2019). Information current as of May 2019, <http://www.ncsl.org/research/civil-and-criminal-justice/marijuana-overview.aspx>. Illinois laws become effective in 2020.

GRAPH 9

**PERCENT DECLINE IN MARIJUANA ARRESTS:
SELECTED LEGALIZATION STATES, 2010-2017**



Source: Federal Bureau of Investigation, National Incident-Based Reporting System, marijuana possession arrests. Michigan and Vermont legalized marijuana in 2018 and data are not yet available regarding the change in arrests.

Would Legalization Be A Revenue Windfall For Virginia Cities And Counties?

If Virginia decided to legalize marijuana for personal use, the state would likely be able to tax its production and sale. Marijuana legalization would also likely reduce the number of arrests for possession; however, we reasonably would expect that law enforcement resources would be reallocated to deal with other crimes. Let's take a quick look at what the revenue impact might be from marijuana legalization.

We assume that adults in Virginia would respond to legalization by consuming more marijuana. The question is: How much? We use the responses of adults in Colorado and Oregon to arrive at our low and high estimates (Table 7). Legalization likely would result in approximately 9% to 11% of the adult population in Virginia using marijuana on a monthly basis.

What might legalization in the Commonwealth look like? Virginia House Bill 2371, introduced earlier in 2019, proposed to legalize recreational marijuana. The proposed excise tax in Virginia would have been 9.7% (combined with the 5.3% normal sales tax levy, it would total 15%) with an additional 5% local excise tax option. Although the bill failed in committee, we use it as a framework to estimate the potential tax revenues for the state.⁵⁰

While we do not have data on how much Virginia residents currently spend on marijuana, we do have survey data on how much marijuana consumers in other states spend. Headset Inc., a Seattle-based cannabis market intelligence firm, recently estimated that the average marijuana consumer spends about \$645 a year, or approximately \$54 a month.⁵¹ After legalization and assuming that residents of Virginia respond like those in Colorado or Oregon, Table 8 estimates that marijuana sales could approach \$360 million to \$450 million a year, resulting in approximately \$55 million to \$67 million in excise tax revenues for the state. Of course,

our estimate does not include jobs that would be created to produce, distribute and sell marijuana for personal use. Our estimates also do not factor in the costs to society, to include the potential for increases in car accidents, hospitalizations and absenteeism. Our estimates suggest that marijuana legalization would generate a modicum of additional tax revenue, but should not be viewed as a means to improve Virginia's financial stability.



⁵⁰ <https://lis.virginia.gov/cgi-bin/legp604.exe?191+sum+HB2371>.

⁵¹ <https://www.headset.io/blog/what-does-the-average-cannabis-consumer-look-like>.

TABLE 7**CHANGE IN MARIJUANA USE IN THE PAST MONTH FOR ADULTS 18 AND OLDER, COLORADO, OREGON AND VIRGINIA**

	COLORADO	OREGON	VIRGINIA	
	LOW RESPONSE	HIGH RESPONSE	LOW RESPONSE	HIGH RESPONSE
Before legalization	12.9%	12.6%	7.6%	7.6%
After legalization	16.6%	20.0%	9.8%	12.1%
Percent change	28.7%	58.7%	28.7%	58.7%

Source: National Survey of Drug Use and Health. Colorado liberalization went into effect in January 2014 and Oregon in July 2015. Comparison is between the last full year with data available prior to change versus the next full year post liberalization. Colorado is 2012-2013 and 2015-2016. Oregon is 2013-2014 and 2016-2017. Virginia usage for preliberalization is from 2014-2016.

TABLE 8**EXCISE TAX REVENUE ESTIMATES FOR THE LEGALIZATION OF MARIJUANA, VIRGINIA**

	LOW ESTIMATE	HIGH ESTIMATE
Estimated Annual Tax Revenue	\$54,963,877	\$66,967,482
Population 18 and Older	6.5 million	6.5 million
Usage in the Previous Month	8.7%	10.6%
Monthly Marijuana Consumers	565,472	688,966
Average Monthly Spending	\$54	\$54
Estimated Monthly Spending	\$30,535,487	\$37,204,157
Estimated Annual Spending	\$366,425,847	\$446,449,882

Source: Dragas Center for Economic Analysis and Policy, Old Dominion University (2019)

Final Thoughts

The decision of whether to maintain the status quo, decriminalize or legalize the personal possession of marijuana will reverberate throughout the state's economy. Maintaining the status quo is a policy choice under increasing pressure at the state and local levels. The attempts of the commonwealth's attorneys of Norfolk and Portsmouth to dismiss some (Portsmouth) or all (Norfolk) misdemeanor possession cases are a sign that the region is moving from conversation toward action on marijuana.

If, as evidenced by the increasing number of states decriminalizing and legalizing the personal use of marijuana, change does come to Virginia, what would it mean? **First, marijuana is not a cure for the ills of the state's budget.** While Colorado has generated \$1 billion in marijuana taxes, fees and licenses, this was over almost five years. It's an additional revenue source, not a replacement for income or other taxes.

Second, many of the claims about marijuana and CBD-infused products are unproven and research will take time to investigate them. CBD-infused products do appear to have some medicinal benefits for pain relief. Whether or not these products have benefits for anxiety, depression, gout, weight loss, weight gain and a host of other physical ailments remains to be seen. The rush of CBD-based products to markets appears to follow similar fads of the past. As for marijuana, the health benefits are also mixed, with some studies showing benefits, others not. Claims that marijuana use reduces opioid overdoses, for example, are promising and intriguing, but require further research to determine whether the relationship exists.

Third, marijuana decriminalization or legalization does not eliminate the black market for marijuana. When marijuana is decriminalized, there are still no legal outlets for consumers to purchase it, so the black market may grow as penalties for consumers decrease. When marijuana is legalized, the legal dispensaries are taxed and regulated, and the quality of marijuana increases relative to what is available on the black market.⁵² Most consumers are willing to pay more, but not too much more,

and some consumers may find legal prices are too high when compared to the black market. Part of the problem is the federal classification of marijuana, which presents significant barriers to the operation of marijuana businesses. Another is that the black market is not taxed like the legal market, so it can offer cheaper (but riskier) prices. If the federal government were to change its position on marijuana, some of these barriers might go away. Increased competition within and among states would lower prices and reduce the size of the black market.

Fourth, the Commonwealth's interdependence with the federal government and the military means that many residents have a job that requires a drug test, security clearance, or both. Even if marijuana were completely legalized for personal use in the U.S., the military and individuals working for or with the federal government in sensitive positions would likely continue to face restrictions on the use of marijuana. Transportation industries, to include airlines, rail and trucking, would undoubtedly have restrictions on marijuana similar to the current restrictions on alcohol consumption. As more than 60% of traffic through the Port of Virginia moves by truck and another 30% by rail, marijuana decriminalization or legalization could potentially have far-ranging impacts on the availability of truck drivers and public safety.

Fifth, while marijuana legalization does not appear to increase the rate of use by minors, there is strong evidence that marijuana potency increases with legalization. Emergency department and urgent care visits by minors for adverse reactions to marijuana increased almost three-fold in Colorado after legalization.⁵³ Even though minors may not legally consume marijuana, a resale market exists, creating the increased likelihood of adverse reactions or prolonged substance abuse. Care must be taken to recognize that sales competition would likely lead to increased THC content. Illinois, which recently signed marijuana legalization into law, has a unique tax structure where the tax rate on marijuana is dependent upon THC content, perhaps attenuating future demand for high-THC marijuana.

Sixth, decriminalization or legalization will create new burdens on law enforcement. A 2018 study by the Insurance Institute for Highway Safety

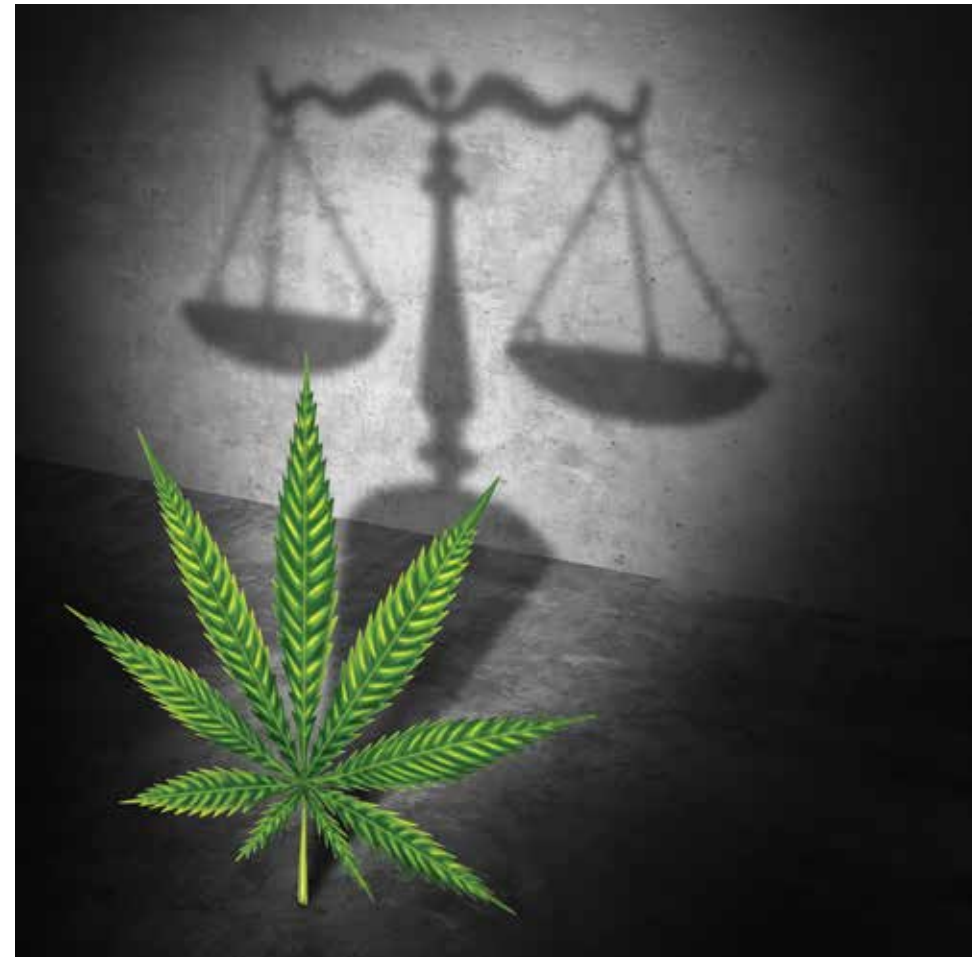
52 Michael Armlung, Derek Reed, Vanessa Morris, Elizabeth Aston, Jane Metrik and James MacKilop (2018), "Price elasticity of illegal versus legal cannabis: a behavioral economic substitutability analysis," *Addiction* 114 (1), 112-118.

53 <https://www.ncbi.nlm.nih.gov/pubmed/29609916>.

and the Highway Loss Data Institute found that car crashes increased by as much as 6% in Colorado, Nevada, Oregon and Washington after these states legalized marijuana for recreational use.⁵⁴ Adults 18 to 20 still can be cited in legalized states and the prevention of sales to minors is an obvious concern. New law enforcement training, procedures and equipment would be needed to adapt to a new normal.

Lastly, marijuana legalization is likely to be more efficient than decriminalization in addressing inequities in enforcement. The racial and socioeconomic disparities in arrests for marijuana possession in Virginia are troubling and worthy of discussion. Evidence from decriminalized states, however, suggests that these disparities persist even after decriminalization. Furthermore, because civil fines do not graduate with income, the burden of civil penalties is higher on those with lower incomes. Decriminalization removes the provision of a legal defense from those least able to afford one, which may increase disparities in judicial outcomes. Decriminalization should not equate “punishable by fine” with “legal for people with means.”

Marijuana is coming (and it’s already here). The exact date is unknown, but the momentum is clear. We should not shy away from discussing what may occur and keep in mind that challenge and opportunity are two sides of the same coin. In the words of Winston Churchill, “To improve is to change; to be perfect is to change often.”



⁵⁴ <https://www.iihs.org/news/detail/crashes-rise-in-first-states-to-begin-legalized-retail-sales-of-recreational-marijuana>.