

# **EXECUTIVE SUMMARY**

## **Assessment of the Potential Impact of Regulated Marijuana in New York State**

**July 2018**

# ASSESSMENT OF THE POTENTIAL IMPACT OF REGULATED MARIJUANA IN NEW YORK STATE

## Executive Summary

### Charge

In his January 2018 budget address, Governor Andrew M. Cuomo called for an assessment of the possible impact of regulating marijuana in New York State (NYS). The Governor directed NYS agencies to evaluate the health, public safety, and economic impact of legalizing marijuana. The experience of legalized marijuana in surrounding states was identified as an important issue to consider in the impact assessment.

### Review Process

Pursuant to the Governor's charge, a thorough review was conducted of the health, criminal justice and public safety, economic, and educational impacts of a regulated marijuana program in NYS. The assessment included an examination of the implications of marijuana legalization that has recently occurred in surrounding jurisdictions. This is particularly important because the status quo in NYS is changing as the State shares borders with some jurisdictions that have legalized marijuana and some that are likely to legalize soon.

This impact assessment involved a public health approach to examining the benefits and risks associated with legalizing marijuana in NYS as compared to maintaining the status quo. In developing the impact assessment, an extensive analysis of peer-reviewed literature was conducted

and information was obtained from jurisdictions that have legalized marijuana. In addition, NYS agencies and subject matter experts in the fields of public health, mental health, substance use disorders, public safety, transportation and economics contributed to this assessment.

Notably, some issues associated with regulating marijuana have been studied more thoroughly than others. In addition, relevant stakeholders with differing viewpoints have weighed in on the potential impact of legalizing marijuana. To ensure a comprehensive assessment, data from a variety of sources were acquired. Given the variety of sources utilized and the breadth of information contained in this report, some areas of potential impact contain discordant findings or viewpoints.

### Introduction

Marijuana can be consumed by inhalation (smoking and vaporizing<sup>i</sup>), oral consumption and topicals. It contains a mix of THC<sup>ii</sup>, cannabidiol (CBD)<sup>iii</sup>, terpenes,<sup>iv</sup> and other compounds.

Marijuana is easily accessible in the unregulated market. A 2017 Marist Poll showed that 52 percent of Americans 18 years of age or older have tried marijuana at some point in their lives, and 44 percent of these individuals currently use it.<sup>1</sup> Estimates from the National Survey on Drug Use and Health (NSDUH) indicate that one in ten New

<sup>i</sup> **Vaporizing** is the process of heating dried marijuana to a temperature just below its combustion point of 392°F. Vaporizers, devices used to use marijuana this way, consist of a heating source and a delivery system.

<sup>ii</sup> **Tetrahydrocannabinol (THC)** is the primary psychoactive component in marijuana which binds to the cannabinoid receptors primarily in the brain.

<sup>iii</sup> **Cannabidiol (CBD)** is a compound of marijuana that has medical benefits but is not psychoactive. CBD is one of approximately 113 cannabinoids identified in marijuana.

<sup>iv</sup> **Terpenes** are a diverse class of hydrocarbons that are responsible for the aroma of the marijuana plant.

Yorkers used marijuana in the last month.<sup>2</sup> The status quo (i.e., criminalization of marijuana) has not curbed marijuana use and has, in fact, led to unintended consequences, such as the disproportionate criminalization of racial and ethnic minority communities and incarceration that has a negative impact on families and communities.

From the late 1800s until the 1930s, marijuana was generally considered a benign, medically efficacious substance that was sold in pharmacies and doctors' offices throughout the United States to treat various ailments. During the "reefer madness" era of the 1930s, there was a concerted effort to convince the country that marijuana posed such a danger to society, only prohibition could save it, and the risks continued to be exaggerated for many years through propaganda.<sup>3</sup>

In 1999 the Institute of Medicine (IOM) found a base of evidence to support the benefits of marijuana for medical purposes.<sup>4</sup> There is a growing body of evidence that marijuana has health benefits. Peer-reviewed literature, news reports, and anecdotal evidence demonstrate that marijuana is beneficial for the treatment of pain, epilepsy, nausea, and other health conditions. Twenty-nine states and Washington, DC, have established medical marijuana programs that benefit patients with numerous conditions. Success with medical programs across the country has led some jurisdictions to legalize marijuana for regulated adult-use (eight states and Washington, DC). Low THC/high CBD<sup>v</sup> products are approved in 17 additional states.<sup>5</sup>

In addition, studies have found notable associations of reductions in opioid prescribing and opioid deaths with the availability of marijuana products. States with medical marijuana programs have been found to have lower rates of opioid overdose deaths than other states.

In 2014, Governor Cuomo signed the Compassionate Care Act into law, establishing New York State's Medical Marijuana Program. Since the program was established, continued improvements have been made to better serve patients. To improve patient access, nurse practitioners and physician assistants were approved to certify patients for medical marijuana, and the number of organizations approved to manufacture and dispense medical marijuana was increased. In addition, the list of qualifying conditions was expanded to include chronic pain and post-traumatic stress disorder. Most recently, in response to the unprecedented opioid epidemic, it was announced that opioid use will be added as a qualifying condition to ensure that providers have as many options as possible to treat patients. Other program enhancements include extending the variety of medical marijuana products, improving the dispensing facility experience, and streamlining program requirements. The State's Medical Marijuana Program is a national model, with almost 1,700 registered providers and 59,653 certified patients.

In addition to health impacts, the prohibition of marijuana has had significant impacts on criminal justice. The Marijuana Reform Act of 1977 decriminalized private possession of a small amount of marijuana, punishable by a maximum fine of \$100. However, possession of marijuana in public view remains a misdemeanor. Over the past 20 years, there have been more than 800,000 arrests for marijuana possession, and the increasing emphasis on minor marijuana arrests has had a disproportionate impact on communities of color.<sup>6</sup> The over-prosecution of marijuana has had significant negative economic, health, and safety impacts that have disproportionately affected low-income communities of color, and a regulated program in NYS should address collateral consequences of prior criminal convictions for marijuana possession, such as barriers to housing and education. In 2012, the Governor introduced legislation to ensure that possession of a small

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<sup>v</sup> **Low THC/high CBD products** do not have psychoactive components and are used for medicinal purposes through oral ingestion or topical application. These products can be legal in states that do not have a medical marijuana program.

amount of marijuana, whether public or private, is treated as a violation and not as a misdemeanor. The legislature failed to adopt the proposal. Because of the over-prosecution of marijuana, a regulated program in NYS should include provisions to address the collateral consequences of prior criminal convictions for marijuana possession or use. As the Governor has stated, the impact of legalization in surrounding states has accelerated the need for NYS to address legalization. It has become less a question of whether to legalize but how to do so responsibly.

There is growing public support for legalization of marijuana. A recent study found American voters across party lines support the legalization of marijuana. The study notes that nearly seven in ten American voters support the legalization of marijuana, and support for marijuana legalization includes majorities of all partisan, gender, and racial groups.<sup>7</sup> On May 3, 2018, a Quinnipiac University poll revealed that support for legalized marijuana is at an all-time high in NYS, with 63 percent of New York voters in support of legalizing regulated adult-use marijuana.<sup>8</sup>

A regulated marijuana program enjoys broad support and would have significant health, social justice, and economic benefits. However, risks associated with marijuana have been identified, although research for some of those risks is divided. For example, research has demonstrated an association between maternal marijuana smoking and lower birth weight of newborns. Marijuana use may be harmful to the lungs if a combustible form is smoked. For individuals who are susceptible to psychosis, regular use lowers age of onset of psychosis.<sup>9</sup> In addition, there are valid concerns about traffic safety. Risks can be monitored and reduced in a regulated marijuana environment with the establishment of regulations that enhance State control. Regulating marijuana enables public health officials to minimize the potential risks of marijuana use through outreach, education, quantity limits at point of sale, quality control, and consumer protection.

*The positive effects of regulating an adult (21 and over) marijuana market in NYS outweigh the potential negative impacts. Harm reduction principles can and should be incorporated into a regulated marijuana program to help ensure consumer and industry safety. Legalizing marijuana could remove research restrictions in NYS, which will enable the State to add to the knowledge of both the benefits and risks. In addition, NYS would be one of the largest regulated marijuana markets. As such, there is potential for substantial tax revenue in NYS, which can be used to help support program initiatives in areas such as public health, education, transportation, research, law enforcement and workforce development. Tax revenues can also support community reinvestment in health care and employment. Finally, legalization of marijuana will address an important social justice issue by reducing disproportionate criminalization and incarceration of minority communities.*

## Summary of Findings

### Health

#### **Regulating marijuana reduces risk and improves quality control and consumer protection.**

The organization *Doctors for Cannabis Regulation* states that regulation benefits public health by enabling government oversight of production, testing, labeling, distribution, and sale of marijuana.<sup>10</sup>

Potency can vary widely based on the strain of marijuana, the way the plant is grown, the part of the plant that is used, how it is stored and how it is consumed.<sup>11</sup> Consumers purchasing marijuana on the unregulated market are at a severe disadvantage for understanding the nature (e.g., potency and safety) of the product they are

acquiring. In an unregulated market where there is no standardization or quality control, there are many opportunities for unsafe contaminants to be introduced, such as fungi spores, mold, bacteria, heavy metals, pesticides, and growth enhancers. As such, regulated marijuana introduces an opportunity for reducing harm for consumers.<sup>12</sup> Similar protections are in place for the alcohol and tobacco industries. In a regulated environment, individuals know what they are consuming and can choose a product accordingly. Trained employees can provide guidance and education at point of sale.

An adult-use regulated marijuana program should test and label products to ensure quality and protect the public health. It should employ a harm reduction approach to consumer protection. Consumers should be informed about their choices and understand the chemical make-up and potency of the products they purchase.

### ***Marijuana may reduce opioid deaths and opioid prescribing.***

Regulating marijuana can reduce opioid use (legal and illegal). Medical marijuana has added another option for pain relief which may reduce initial prescribing of opioids and assist individuals who currently use opioids to reduce or stop use. Legalization may ease access to marijuana for pain. Marijuana is an effective treatment for pain, greatly reduces the chance of dependence, and eliminates the risk of fatal overdose compared to opioid-based medications.<sup>13</sup> Studies of some states with medical marijuana programs and/or regulated adult use have found reductions in opioid deaths and opioid prescribing with the availability of marijuana products.<sup>14,15</sup>

### ***Marijuana has intrinsic health benefits and risks.***

Evidence supports the efficacy of marijuana's therapeutic benefits. Growing research has demonstrated that marijuana is beneficial for the treatment of pain, epilepsy, nausea, and other health conditions. The medicinal benefits of marijuana have been acknowledged.<sup>16</sup> The negative health consequences of marijuana have been found

to be lower than those associated with alcohol, tobacco and illicit drugs including heroin and cocaine.<sup>17,18</sup>

There is an association between marijuana use and impairment in the cognitive domains of learning, memory, and attention (due to acute marijuana use).<sup>19, 20</sup>

Marijuana may be harmful to the lungs if a combustible form is smoked. However, alternatives can be used (e.g., vaping, edibles, etc.). Regulating marijuana will provide an opportunity to furnish information regarding the various methods of consumption.

Most women who use marijuana stop or reduce their use during pregnancy.<sup>21</sup> There is research that demonstrates an association between maternal marijuana smoking and lower birth weight of the offspring. Data have not identified any long-term or long-lasting meaningful differences between children exposed to marijuana in utero and those not exposed.<sup>22</sup> The American College of Obstetrics and Gynecology (ACOG) recommends that women who are pregnant should be discouraged from using marijuana due to concerns regarding impaired neuro-development as well as maternal and fetal exposure to the adverse effects of smoking. The ACOG recommends seeking alternative therapies for which there are better pregnancy-specific safety data.<sup>23</sup>

### ***Regulation leads to little or no increase in adult use, and there is little evidence that regulation leads to an increase in use by youth.***

It is likely that some people who have never used marijuana before due to fear of legal repercussions may try marijuana once legal sanctions are lifted.<sup>24</sup> This does not mean that those individuals will become regular or even semi-regular marijuana users.<sup>25</sup> States that have a regulated marijuana program have seen a slight increase in adult use, and some states have seen no increase at all.<sup>26</sup> Reported increases in the number of people who use marijuana can be partially attributed to

underreporting prior to legalization. Brief increases in use in Colorado and Washington State leveled out over time. Subject matter experts noted that such increases may be the result of tourism and will fade as more of the country legalizes.

### ***Marijuana can have effects on mental health.***

There is little evidence that marijuana use is significantly or causally associated with more common mental illnesses (such as mild-to-moderate depression or anxiety) or other adverse outcomes (such as suicide) in the general population. Regular marijuana use in youth is associated with lower academic achievement,<sup>27</sup> but causation is unclear (e.g., cognitive vs. motivation vs. other factors).

Adolescents who use marijuana regularly have an increased risk of developing psychosis.<sup>28</sup> Additionally, for individuals who are susceptible to psychosis, regular use of marijuana lowers the age of onset of psychotic disorders.<sup>29</sup> People with psychotic disorders who use marijuana regularly have worse symptoms, functioning, and health outcomes, and stopping marijuana use improves mental health outcomes.<sup>30,31</sup>

In individuals with bipolar disorders, there is an association between regular marijuana use and increased symptoms of mania and hypomania.<sup>32</sup>

It is important to note that there is some evidence that CBD can reduce the effect of THC on psychosis, and using marijuana with lower levels of THC may be less likely to be associated with the development of psychosis.<sup>33</sup> In addition, research has shown that genetics and other environmental factors also have significant effects on the course of serious mental illness (SMI).<sup>34</sup>

Public health surveillance and education officials will need to conduct surveillance on youth marijuana use and any possible impacts on the onset and incidence of psychosis, as well as effects on academic achievement. Mental health professionals will need to monitor the effects of

marijuana legalization on the population with SMI, and resources will need to be directed to prevention, harm reduction and treatment efforts for individuals with SMI.

### ***Problematic Marijuana Use***

There is a lack of consensus as to what percentage of individuals who use marijuana develop some form of dependence, but estimates range from 8.9 percent to 30 percent of the population who uses marijuana.<sup>35,36</sup> The risk factors for a poor outcome are unclear. However, it will be important to ensure access to treatment, support and care when necessary.

In addition, the research community generally does not recognize the premise that marijuana leads to the use of other substances as a legitimate or plausible assertion. Since marijuana is the most commonly used illegal substance,<sup>37</sup> people who have tried other substances are also likely to have tried marijuana and alcohol, yet the majority of individuals who use marijuana do not try other illicit drugs.<sup>38</sup> Additionally, an individual's environment, genetics and social context have more influence on propensity to use substances and develop a substance use disorder.<sup>39</sup>

### ***Regulating marijuana may lead to a reduction in the use of synthetic cannabinoids/novel psychoactive substances.***

The Global Drug Survey indicated that countries that decriminalize marijuana have lower prevalence rates of synthetic marijuana use.<sup>40</sup> Synthetic cannabinoids are compounds that are sprayed on plant material and purchased for smoking as a "legal high." THC is a partial agonist at the cannabinoid receptor, while these compounds are full agonists and more potent. Therefore, while the effects are often somewhat like marijuana, the adverse effects can be far more severe, including delirium, lethargy and coma, seizures and hallucinations.<sup>41</sup> Other compounds may also be in the mix. For example, in April, there were deaths from these products due to contamination with rat poison.<sup>42</sup> There is disagreement between some

experts about the effect legalization will have on synthetic cannabinoid use. However, it is clear that it is often chosen to avoid detection in urine testing.<sup>43</sup> One survey found that most users prefer natural cannabis.<sup>44</sup> The synthetic cannabinoid market should be eliminated. A reduction in synthetic cannabinoid availability and use would have particular benefits for individuals with SMI.

### ***The NYS Medical Marijuana Program would adapt to coordinate with a regulated marijuana market.***

New York State's medical marijuana program has almost 1,700 registered providers and serves 59,653 certified patients. In the two years since the Medical Marijuana Program was implemented, there have been 27 reported adverse events out of about 300,000 transactions. None resulted in death, and most persons changed to another product without further incident.

As part of the planning for the potential regulation of marijuana, it will be important to re-examine the State's medical marijuana program to ensure access for anyone in need and determine the changes necessary to ensure both programs address their defined objectives. In addition, the DOH will evaluate information from the eight states (and Washington, D.C.) that currently operate both medical and recreational marijuana programs to determine how they assure patient safety. Individuals who could benefit from medical marijuana should work with a provider to determine if they should utilize the Medical Marijuana Program. A regulated marijuana program must provide education on the assistance that is available in the Medical Marijuana Program to ensure populations that need medical guidance and support have the information necessary to access the program. Growing the medical program while implementing a regulated marijuana program

will reduce the risks of legalizing marijuana for individuals who require medical guidance.

## **Criminal Justice and Public Safety**

### ***Marijuana prohibition results in disproportionate criminalization of racial and ethnic minority groups.***

Across the country, individuals who are Black are nearly four times more likely than individuals who are White to be arrested for marijuana possession, *despite data showing equal use among racial groups.*<sup>45</sup> Stop and Frisk data from NYC presented in a 2013 report from the NYS Office of the Attorney General demonstrated that there are racial disparities in case outcomes among those stopped and arrested. Individuals who are White identified by Stop and Frisk were almost 50 percent more likely than individuals who are Black to have an arrest end in an Adjournment in Contemplation of Dismissal, meaning they avoided a conviction.<sup>46</sup> While marijuana arrests have dropped significantly in NYC since 2014, NYS Division of Criminal Justice Services data demonstrate that 86 percent of the people arrested for marijuana possession in the fifth degree<sup>vi</sup> in 2017 were people of color; 48 percent were Black, and 38 percent were Hispanic. Only nine percent were White.<sup>47</sup>

Legalization of marijuana will reduce disproportionate criminalization and incarceration of racial and ethnic minority communities.

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<sup>vi</sup> Persons are guilty of criminal **possession of marijuana in the fifth degree** when they knowingly and unlawfully possess: 1. marijuana in a public place and such marijuana is burning or open to public view; or 2. one or more preparations, compounds, mixtures or substances containing marijuana and the preparations, compounds, mixtures or substances are of an aggregate weight of more than twenty-five grams. Criminal possession of marijuana in the fifth degree is a class B misdemeanor. (New York Penal Law §221.10)

## **Criminal records impede New Yorkers' lives.**

*The impact of low level marijuana offenses extends beyond utilization of law enforcement and criminal justice resources. Individuals who have a criminal record often face challenges throughout their lives accessing gainful employment and qualifying for federal housing. Marijuana-related convictions have a lasting impact on the lives of individuals and their families.<sup>48</sup>*

### **Incarceration has a negative impact on families and communities.**

Arrests and incarceration negatively impact the health of communities and individuals by destabilizing families, hindering access to education and health care, lowering employment opportunities, increasing poverty, and limiting access to housing, particularly in low-income communities of color where arrests are concentrated despite equivalent rates of marijuana use across racial groups. Research indicates that incarceration also has an impact on community health in many areas (including teenage pregnancies and sexually transmitted infections).<sup>49</sup>

Resources should be directed to community reinvestment in health care, education and workforce development.

### **Research is varied on the impact of regulated marijuana on motor vehicle traffic crashes (MVTC).**

A primary concern of law enforcement is the possibility of increased impaired driving and car crashes in a regulated marijuana environment. In the last 40 years, law enforcement has made great strides in making highways safe and effectively changed the cultural dialog on drinking and driving. There was consensus that successful anti-DWI efforts could be expanded to address driving while under the influence of marijuana. Resources must be made available to support education and

changing law enforcement budgetary needs in a regulated marijuana program.

Studies of the contribution of marijuana use to MVTC have had varied results. Two meta-analyses reported near doubling of the risk of fatal crashes regardless of the presence of alcohol or other drugs.<sup>50,51</sup> Another study examining similar data found a nonsignificant contribution of marijuana to crash risk when the model also accounted for the presence of other drugs.<sup>52</sup> An additional study comparing motor vehicle-related fatalities in Washington and Colorado to eight similar states found that three years after marijuana legalization, changes in motor vehicle fatality rates were not statistically different from those in similar states without regulated marijuana legalization. Unfortunately, available data is flawed by inconsistencies in both the collection and analyses of body fluid samples and descriptions of demographics and crash types.<sup>53</sup>

Representatives of law enforcement indicated that in Washington State, six months prior to legalization of marijuana, 14.6 percent of motorists arrested for DWI were the result of marijuana-impaired driving vs. 21.4 percent after legalization.<sup>54</sup>

Since California approved medical marijuana, the number of drivers killed in crashes that tested positive for drug involvement decreased nine percentage points.<sup>55</sup> A study of traffic fatalities in states with medical marijuana compared to those without found that, on average, the states with medical marijuana had lower traffic fatalities than those without.<sup>56</sup>

While existing information suggests a lower impact than might have been expected, legalization of adult use of marijuana raises valid concerns about traffic safety. Efforts are in place to expand the monitoring of this risk in NYS. An expansion of education to the public, along with the development of laws and procedures, can assist in reducing the negative impacts.



In conclusion, it will be essential to ensure public safety and the integrity of the program by:

- Enforcing the under-21 purchasing ban;
- Reducing the illegal market and preventing diversion;
- Ensuring adequate security at cultivation and dispensing facilities;
- Employing a robust monitoring and oversight system with the ability to issue fines for violations and revoke licenses as needed;
- Promoting further study of methods of detecting impaired driving and the impact of legalization of marijuana on the safety of the State's roadways;
- Enhancing the State's successful anti-DWI efforts to include impaired driving;
- Educating the public as to the potential risks of excessive use;
- Imposing fines for providing false identification;
- Determining hours of operation restrictions for retail establishments; and
- Imposing a tracking, reporting and compliance system for the regulated marijuana program.

## Economic Estimates

### ***Regulating marijuana will create jobs.***

Industry sources estimate that there are between 165,000 to 230,000 full- and part-time workers in the United States marijuana industry.<sup>57</sup> Industry sources state that as more states develop a regulated marijuana market, the industry is growing substantially, more licenses are issued for dispensaries, and more consumers exit from the unregulated market.<sup>58</sup>

### ***Market size and potential State revenues.***

It is estimated that up to 1,290,000 consumers would access the legal market the first year after legalization of marijuana. Purchases of illegal marijuana in NYS are estimated to be about 6.5 to 10.2 million ounces annually. At an average retail price of \$270 per ounce, the market for marijuana is

estimated to be approximately \$1.7 billion; at \$340 per ounce, the market is estimated to be approximately \$3.5 billion. Based on varying assumptions pertaining to price and usage rates, the estimated potential total State and local tax revenue in the first year range from \$248.1 million (with a 7% tax rate) to \$677.7 million (with a 15% tax rate). State revenues alone range from \$173.3 million to \$542.3 million.

This new funding source can be used for the greater good, such as public health, education, transportation, addressing the needs of a changing workforce, and addressing the changing budgetary needs of law enforcement.

### ***Marijuana regulation could generate long-term cost savings.***

Legalizing marijuana is anticipated to lead to a reduction in costs associated with illegal marijuana, including police time, court costs, prison costs and administrative fees.<sup>59</sup> There will be costs associated with the implementation of a regulated marijuana program; however, the revenue generated is likely to sustain the program.

### ***Following best practices and acknowledging inherent risks.***

New York should follow certain best practices based on the experience of other states in implementing a tax on regulated marijuana use. Other states overestimated revenue initially as they did not account for the length of time it takes for a recreational marijuana market to become established, leading to fewer than expected sales. The initial tax rate should be set to maximize the incentive for consumers to move from the illegal to legal market.

There are other inherent risks that will impact the amount of potential revenue collected. Regulations pertaining to home cultivation of marijuana plants, limits on the amounts that can be purchased, and granting localities the option to ban the sale of marijuana could lead to an increase of marijuana purchased on the unregulated market,

reducing the amount of tax collected. The intersection of the recreational and medical usage markets will also need to be addressed.

*NYS would be one of the largest potential regulated markets. As such, there is potential for substantial tax revenue in New York.<sup>vi</sup>*

## Education

***Marijuana messaging should be tailored to the needs of different key populations including youth/adolescents/young adults and pregnant women.<sup>60</sup>***

Prioritization should be given to an approach that emphasizes safety, mitigates potential harms, and suggests that youth delay use.<sup>61</sup> Evidence suggests that prevention strategies targeting youth can be most effective if they provide honest, science-based information in a non-judgmental and non-punitive manner.<sup>62</sup> While abstinence must be encouraged, youth should be taught to understand that moderation and self-regulation will mitigate potential harms if they do not abstain.<sup>63</sup>

***Legalization provides an opportunity to educate consumers on what their options are and encourage the use of products with lower doses of THC.***

***People will be empowered to take more control over their mental and physical health if they are given counsel and guidance. There are opportunities to provide such guidance in a regulated market.***

***Regulating marijuana enables public health officials to share harm reduction messages regarding lower risk marijuana use.***

In a regulated marijuana program, products should be labeled to indicate the percentages of the various chemical compounds they contain (e.g., CBD vs. THC content) to maximize consumer awareness of potency. Research indicates that issuing guidelines on the following can help ameliorate the potential harms of marijuana use: avoiding combustible use, avoiding use when pregnant, ensuring availability of products with lower potency, prohibiting use by youth, and avoiding consumption of marijuana and tobacco in tandem.<sup>64</sup> Public health officials should share messages regarding lower risk cannabis use guidelines (LRCUG) to help reduce the potential harms of marijuana consumption.<sup>65</sup>

## Impact of Legalization in Surrounding Jurisdictions

New York shares borders with multiple states that have or are considering legalized marijuana (i.e., Massachusetts, Vermont, and New Jersey) and one international border (New York shares a border with two Canadian provinces). The legalization of marijuana in neighboring jurisdictions raises concerns about both marijuana diversion to NYS from states that have legalized and revenue diversion from NYS to states that have legalized.

***Consumers are likely to cross borders to obtain marijuana, committing a federal felony in the process.***

A University of Oregon study found that Washington retailers along the Oregon border experienced a 41 percent decline in sales following Oregon's legal market opening. Prior to legalization in Oregon, consumers on the Oregon side of the border were crossing state lines to obtain marijuana in Washington rather than purchase marijuana in Oregon through the unregulated market. This is particularly striking given the fact that obtaining marijuana illegally in Oregon resulted in a civil fine, whereas crossing state lines to obtain legal

marijuana in Washington risked federal felony prosecution. The study suggests that consumers prefer legal products.<sup>66</sup>

***Legalization of marijuana causes a sharp increase in marijuana possession arrests in border counties of neighboring states.***

A Washington State University study examined the spillover effects of regulated marijuana legalization in Colorado and Washington on neighboring states without legalization and found a sharp increase in marijuana possession arrests in border counties of neighboring states relative to non-border counties in these states.<sup>67</sup>

***The implications of legalization in surrounding jurisdictions are particularly important because the status quo in NYS is changing as the State shares multiple borders with some jurisdictions that have legalized marijuana and some that are likely to legalize soon.***

***Legalization in neighboring jurisdictions raises the likelihood of revenue flowing from New York into those jurisdictions.***

A New Jersey analysis estimates annual expenditures of New York and Pennsylvania consumers in New Jersey’s market to be \$108.7 million.<sup>68</sup>

## **Implementation**

The overarching goal of regulating marijuana in NYS must be the incorporation of harm reduction strategies. Implementation of a regulated marijuana program requires considerable planning as to the regulatory mechanisms needed to protect public health, provide consumer protection, and ensure public safety. At the same time, a well

thought out program should address the social justice issues associated with criminalization, provide opportunity for community revitalization, and establish a system to capture and invest tax revenue. Ultimately, the system should be designed to reduce the utilization of the unregulated market.

In creating a regulated marijuana market, the State will need to establish regulatory authority for direction and guidance along each step of the supply chain, including cultivation and production, testing, and distribution. Key decisions will need to be made including restricting the age at which an individual may purchase marijuana. No state with a regulated marijuana program has allowed individuals below the age of 21 to purchase marijuana, and NYS should be no different. The State will also need to decide the amount of marijuana that may be purchased in a single transaction and should similarly follow all states that have posed a one-ounce maximum. Finally, the State will need to decide the overall number and location of the dispensaries that sell marijuana products (including their distance from schools and churches, as well as communities in which they will be located). These decisions must be made in the context of broad stakeholder and community consultation and engagement.

The process of legalization and regulation will be dynamic. Legalization efforts should be clear on the goals they are setting out to achieve for the people of NYS. Policymakers will need to balance competing priorities in a way that maximizes program effectiveness. Policymakers can learn lessons from approaches taken by other states and study what has worked and what has not. See Appendix C for a full breakdown of regulated marijuana programs in the other states that have legalized marijuana for adult use.

Recommendations regarding the creation of a regulated marijuana program can be outlined. Specific recommendation can be found in the implementation section of the full report.

## Conclusion

**The positive effects of a regulated marijuana market in NYS outweigh the potential negative impacts. Areas that may be a cause for concern can be mitigated with regulation and proper use of public education that is tailored to address key populations. Incorporating proper metrics and indicators will ensure rigorous and ongoing evaluation.**

Numerous NYS agencies and subject matter experts in the fields of public health, mental health, substance use, public safety, transportation, and economics worked in developing this assessment. No insurmountable obstacles to regulation of marijuana were raised

Harm reduction principles can and should be incorporated into a regulated marijuana program to help ensure consumer and industry safety. Regulating marijuana enables public health officials to share messages regarding lower risk methods of marijuana use that can help reduce potential harms. In addition, establishing a relationship between a regulated marijuana program and the medical program will support harm reduction. Such a link will enable consumers to obtain consultation

## References

<sup>1</sup> "Yahoo News/Marist Poll: Weed & The American Family." *Marist College Institute for Public Opinion*, Apr. 2017, [maristpoll.marist.edu/wp-content/misc/Yahoo\\_News/20170417\\_Summary\\_Yahoo\\_News-Marist\\_Poll\\_Weed\\_and\\_The\\_American\\_Family.pdf](http://maristpoll.marist.edu/wp-content/misc/Yahoo_News/20170417_Summary_Yahoo_News-Marist_Poll_Weed_and_The_American_Family.pdf)

<sup>2</sup> Substance Abuse and Mental Health Services Administration (2018). 2015-2016 National Survey on Drug Use and Health: Model-Based Estimated Totals (50 states and the District of Columbia). Retrieved from <https://www.samhsa.gov/data/sites/default/files/NSDUHsaeTotal2016/NSDUHsaeTotals2016.pdf>

<sup>3</sup> Dolce, J. (2017). *Brave New Weed: Adventures into the Uncharted World of Cannabis*. Harper Wave.

<sup>4</sup> Watson, S. J., Benson, J. A., & Joy, J. E. (2000). Marijuana and medicine: assessing the science base: a summary of the 1999 Institute of Medicine report. *Archives of General Psychiatry*, 57(6), 547-552.

<sup>5</sup> "U.S. Legalized Cannabis Map." *Cannabis Compliance*, [tgunthergroup.com/2017-cannabis-map/](http://tgunthergroup.com/2017-cannabis-map/).

from the medical program which will support informed choices about the source and content of the products they use.

The creation of a regulated marijuana program would enable NYS to better control licensing, ensure quality control and consumer protection, and set age and quantity restrictions. Regulations would provide NYS with the ability to oversee the production, testing, labeling, distribution, and sale of marijuana.

NYS would be one of the largest potential regulated marijuana markets. As such, there is potential for substantial tax revenue in NYS, which can be used to help support program initiatives in areas such as public health, education, transportation, research, law enforcement and workforce development. Tax revenues can also support community reinvestment in health care and employment.

That legalization of marijuana will reduce disproportionate criminalization and incarceration of racial and ethnic minority communities cannot be disputed. Finally, legalization draws existing marijuana use into a public health and harm reduction framework.

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