

IMPLICATIONS OF LEGALIZED CANNABIS IN HEALTH AND HUMAN SERVICES

NEED FOR DATA ANALYTICS AND
SYSTEMS FOR STATES

CompTIA



Human Services IT
ADVISORY GROUP

A White Paper Developed by the Human
Services Information Technology Advisory
Group (HSITAG)

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EXECUTIVE SUMMARY



As the discussion of legalizing cannabis in states is taking place, issues for health and human services agencies to consider are being raised. The Human Services Information Technology Advisory Group (HSITAG) has produced this white paper to raise states' awareness of issues surrounding cannabis legalization from a data, analytics, and information technology (IT) perspective.

As of June 2019, thirty three states and the District of Columbia have passed laws broadly legalizing cannabis in some form. Eleven of these states and the District of Columbia have legalized the use of cannabis for recreational purposes, while the remaining states allow for limited use of cannabis for medical purposes. Based on data from a 2019 nationally representative survey, two-thirds of Americans now favor legalization of cannabis. Nonetheless, concerns have been expressed by public health and public safety professionals, educators, parents, and others on the effects of legalized cannabis, particularly in recreational states. As state policymakers seek objective evidence about the potential benefits and risks of legalizing cannabis, high-quality data and analysis will help inform, anticipate, and address the impacts of legalization. This paper examines the potential data sources for states to use, along with issues regarding data sharing among state agencies. Collecting data and establishing a baseline even before legalization takes effect in a state is an important consideration, because baseline data are critical for analysis and evaluations that lay the foundation for sound policy making.

As state policymakers seek objective evidence about the potential benefits and risks of legalizing cannabis, high-quality data and analysis will help inform, anticipate, and address the impacts of legalization.

We also outline important programmatic and analytic areas that states should look into. These areas include public health issues, impacts on human services programs and individuals, the concentration of tetrahydrocannabinol (or THC)— which produces a psychoactive “high”, available in the retail market, the need for more data on complex, interactive effects; long-term effects of legalization; and causal impacts of retail vs. medical cannabis legalization., among others.

Finally, we examine state funding considerations for cannabis programs, particularly the handling of funds generated by any regulatory activity. A commonly-used structure is to house the cannabis program under the Department of Revenue and use the same licensing and regulatory approach for cannabis as for liquor. Cannabis programs are usually accounted for in the state budget, and following a year or two of operation, are supported by cannabis-generated sales tax revenues. This model has been effective thus far, but there have been many shortcomings that have become apparent as programs mature. Systematic data collection, analysis, and technical assistance to states could help alleviate challenges states have faced with program initiation.

Implementing a new cannabis program is difficult, and statutory deadlines sometimes give states very little time for program implementation. After reviewing many of the issues that have arisen following recreational legalization across the country, we see a clear need for further refinement of cannabis program IT systems and data to protect citizens and to minimize any potential negative public health and safety impacts. Financial resources must be allocated to support data collection, public safety, and health research to more effectively regulate this new industry.

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PURPOSE AND SCOPE



With legalization of medical and recreational cannabis being discussed around the country, the Human Services Information Technology Advisory Group (HSITAG) decided to study how new cannabis policies and programs by states could impact health and human services.

The purpose of this paper is to summarize the issues that states should consider prior to legalizing cannabis, and the potential implications of legalization on health and human services. The paper **is not** taking a policy position for or against, in support of or in opposition

to, the legalization of cannabis for medical or recreational use, or to make recommendations as to “how” to legalize cannabis. Rather, we seek to inform how states can implement cannabis programs more robustly, to avoid unintended consequences.

The focus of the paper is the technology aspects of cannabis legalization, including system components, data needs, analytical requirements, and program implications.

The focus of the paper is the technology aspects of cannabis legalization, including system components, data needs, analytical requirements, and program implications. Topics that are outside the scope of this paper, but which are important for states to consider, include licensing, regulatory oversight, distribution, manufacturing, tracking, and selling of cannabis.

This paper does not include any discussion of the impact of legalization of agricultural hemp. We would suggest that states may wish to leverage/coordinate any infrastructure they build for both cannabis and hemp.

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STATEMENT OF THE ISSUE



As states move to legalize cannabis for medical and/or recreational use, they will need to have the capacity to monitor, track, and analyze the impacts of legalization. To do so, states need to develop mechanisms to collect, analyze, store, and share data with other entities. By establishing a strong data foundation with the accompanying analytical and systems capabilities, states will be better positioned to assess how legalization impacts population health, mental health and substance abuse, children and families, and public assistance programs.

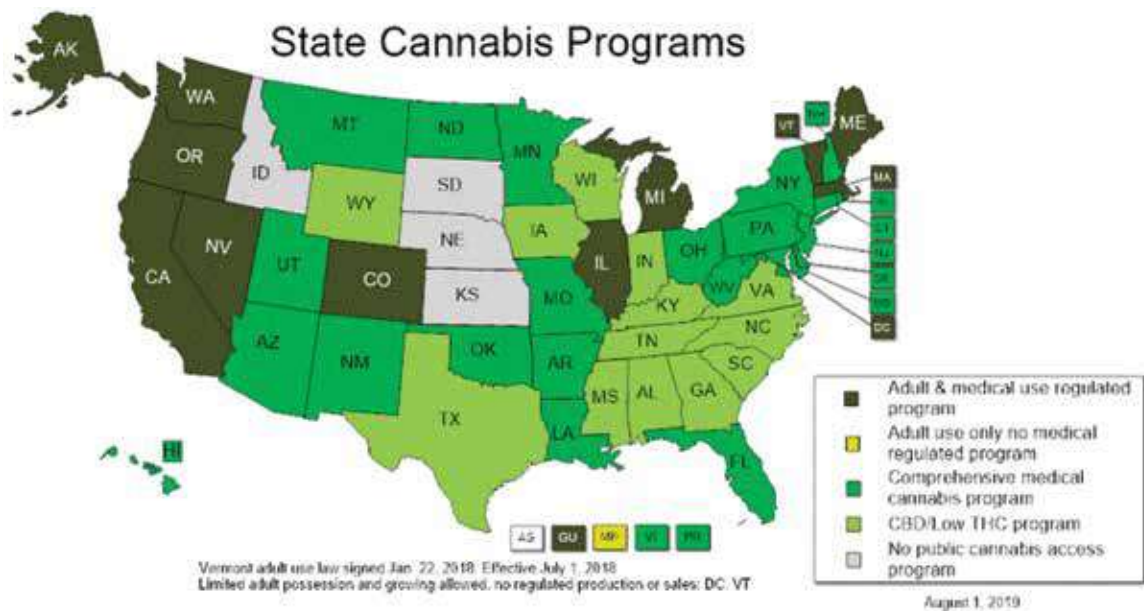
The recent emergence of serious and sometimes fatal lung injuries linked to the vaping of cannabis cartridges that were tainted with Vitamin E demonstrate the hazards of unregulated substances. There is a growing concern about the underage use of cannabis products, including vaping and edibles, and the adverse effects on adolescent development that are being seen in states that have already legalized. With THC concentration levels averaging 68% in some products, the impacts of high-potency cannabis on youths and young adults are raising questions about unintended consequences of legalization. Issues are also being raised about the use of legal cannabis by pregnant women to alleviate nausea, and the potential health ramifications for both the women and their babies.

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CURRENT STATUS ON THE LEGALIZATION OF CANNABIS

As of June 2019, thirty three states and the District of Columbia have passed laws broadly legalizing cannabis in some form.

Eleven of these states and the District of Columbia have legalized the use of cannabis for recreational purposes, while the remaining states allow for limited use of cannabis for medical purposes. California was the first state to legalize cannabis for medical purposes, in 1996. Colorado and Washington State were the first to legalize recreational use in 2014, while most recently Illinois became the second most populous state to legalize cannabis for recreational use. In Vermont and the District of Columbia, there are nuances to recreational cannabis legalization with neither allowing retail sales but decriminalizing possession and use of cannabis. In addition, 13 states allow use of “low THC, high cannabidiol (CBD)” products for medical reasons in limited situations or as a legal defense.



Map courtesy of the National Conference of State Legislatures.

Nine states have legalized recreational cannabis because of ballot initiatives brought on by the citizens of the state, while two states legalized through the normal legislative processes. The ballot initiatives have left states much less prepared than they would be if they had drafted a bill, debated and revised it, then passed it after having considered all implications of the issue. With minimal time to debate and revise the implementation plan of the recreational programs, the majority of states have followed the lead of the first two states that legalized recreational cannabis— Colorado and Washington.

4.1 Medical Cannabis

The policies for medical use cannabis vary greatly by state. Cultivation is one factor that differs. In some states, laws permit people to cultivate cannabis plants for medicinal use. Limits on the number of plants vary by state, ranging on average from 6-12 plants, while some states further limit the number of mature vs. seedling plants. Other restrictions include the fact that, in some states, plants are required to be in a locked area, while in others, home cultivation is only allowed if there is no state dispensary nearby. And some states disallow home cultivation altogether.

The form of medical cannabis is another factor that varies. In some states, laws only allow people to possess cannabis extract in non-smokeable forms, such as oils that can be vaporized, oral solutions, and capsules. Other states only permit people to possess one specific cannabis extract, cannabidiol (CBD), which is a component that does not produce a high.

Another factor that varies greatly by state is the qualifying health conditions for medical cannabis. Many states allow cannabis for a specific list of conditions, such as pain, nausea, HIV/AIDs, seizures and glaucoma. Recently, a few states have added post-traumatic stress disorder (PTSD) to the list.

States also differ in “who” may add new conditions. Some allow an appointee such as a Commissioner of Health to add. Others require legislative action.

4.2 Federal Law

At the federal level, cannabis remains classified as a Schedule I substance under the Controlled Substances Act, meaning it is perceived to have no medical value and a high potential for abuse. Despite the federal classification, the Obama administration allowed states to regulate use as long as they met certain criteria. The Trump administration, however, has taken a more narrow approach, allowing federal prosecutors to decide how to prioritize enforcement. To date, the Food and Drug Administration has not approved a marketing application for cannabis for the treatment of any disease or condition.

4.3 The State Process for Legalization

The statewide ballot measure is the process by which most states have legalized cannabis. Vermont was the first state to legalize via the legislative process in 2018, and the Illinois legislature followed suit in 2019. States that have legalized cannabis continue to grapple with programmatic logistics around regulation, dispensing, potency, and registries of approved patients. These systems and controls they require take time to develop, such that retail sales began an average of 15 months (range: 1.5—23.5 months) after retail cannabis was legalized in the seven states that allow retail sales. The Centers for Disease Control and Prevention is supporting collaborative efforts to help states learn from one another as policy evolves, and collaborations between different state agencies is also recommended for information sharing.



Given the range of issues that exist in assessing the impacts of cannabis legalization on state health and human services agencies, it is imperative that states have accurate data to be able to analyze issues that may arise. Collecting, integrating, and storing data in an analytical environment will enable states to identify and prioritize issues and provide a foundation for data-driven decision making on the legalization of cannabis. Moreover, establishing baseline data on cannabis use, the ramifications of use, and spending to deal with such issues prior to when cannabis sales and distribution commence is critical to be able to robustly evaluate the impact of legalizing cannabis.

5.1

Potential Data Sources

To anticipate the regulatory needs and be able to characterize the impact of recreational cannabis legalization on a state's economy, public health, and public safety, states will need access to data on the budget structures and regulatory spending in states that have already legalized recreational cannabis, as well as access to data on features of cannabis demand (including use and sales) and public health and safety risks. There are a broad range of data sets that can be considered, as shown in Table 1. There are some limitations to these data sources—for example, some are based on crowd-sourced information (as noted in the table), which may not be entirely reliable, while others lack geographic specificity, as they are based on nationally representative samples. Also, updated estimates are lacking on the costs of cannabis addiction treatment to states—some of the best estimates available come from a 2009 report from the National Center on Addiction and Substance Abuse at Columbia University and a 2011 report from the U.S. Department of Justice National Drug Intelligence

Center; however, these estimates are not specific to treatment for cannabis use disorder. Data are also lacking on the costs of policing the black market, though the DEA website links to [documents](#) describing all costs associated with the Domestic Cannabis Eradication/Suppression Program in Washington State, Oregon, Colorado, Alaska, and Washington, DC).

Table 1. Publicly available data for states on marijuana use, sales, and exposure

Data type	Data source (with hyperlink) and description
Demand features	
Use patterns	NSDUH (National Survey on Drug Use and Health). Data on use prevalence, attitudes, and perceptions of marijuana.
	BRFSS (Behavioral Risk Factor Surveillance System). Data on use prevalence (medical and non-medical), frequency, and mode.
	YRBS (Youth Risk Behavior Survey). Data on high school students (and in some states, middle school students too). Includes data on use prevalence and frequency, age at first use, mode, use of synthetic marijuana, use on school property, and driving when using marijuana.
	State-specific sources, such as the Massachusetts MBHS (Marijuana Baseline Study).
Product pricing	Price of Weed (crowd-sourced). Price of retail and black-market marijuana.
	Budzu (crowd-sourced). Value of street and retail marijuana around the country, by product strain.
	State-specific sources, such as from HIDTA (High Intensity Drug Trafficking Area) reports
Public health risks	
Substance use disorder treatment	TEDS (Treatment Episode Data Set). Data on addiction treatment admissions that primarily involve marijuana, including the number of such admissions and demographic breakouts.
	N-SSATS (National Survey of Substance Abuse Treatment Services). Profiles of all facilities providing substance abuse treatment in a state, including data on location, characteristics, services offered, and the number of clients in treatment.
	State-specific sources, such as Massachusetts CHIA (Center for Health Information and Analysis) data on drug-related emergency department visits or BSAS (Bureau of Substance Abuse Services) treatment statistics.
Poisonings	National Poison Data System (by request). Data warehouse that includes de-identified case data from all 55 poison control centers in the U.S. Information includes the substance(s) involved, reason for exposure (e.g. unintentional vs. intentional), and medical outcome severity.
Public safety risks	
Criminal justice measures	NFLIS (National Forensic Laboratory Information System). The raw data, which requires a FOIA request to obtain, includes information from forensic lab reports, based on drug seizures. The data includes the number of drug reports that involved cannabis/THC or synthetic cannabinoids.
	ARCOS (Automation of Reports and Consolidated Orders System). The raw data, which requires a FOIA request to obtain, includes information from drug manufacturers and distributors on transactions of controlled substances through commercial channels.
	NIBRS (National Incident-Based Reporting System). Captures detailed data on crime incidents, including drug or narcotic violations (such as marijuana trafficking or illegal sales or possession), drug equipment violations, and driving while under the influence. Not all police agencies submit their crime data to NIBRS; accordingly, state or local data sources (i.e., data from the police agencies themselves) may be more comprehensive.
	State-specific sources, such as the Massachusetts CJIS (Criminal Justice Information Services) or iCORI (Criminal Offender Record Information).

Data type	Data source (with hyperlink) and description
Demand features	
Vehicle crashes	<p>FARS (Fatality Analysis Reporting System). This database, from the National Highway Traffic Safety Administration, includes data on drivers involved in (fatal and nonfatal) vehicle crashes, with information on the number of crashes by city or town, with information on crash severity and location, and substances involved. Some researchers discourage use of the FARS database to obtain precise risk estimates or to estimate trends in drug use; instead, they recommend using FARS only to assess the contribution of drugs versus other sources of risk (e.g., alcohol) to fatal crash risk. The database has some serious limitations related to inconsistent testing of the presence and concentrations of drugs, with methods that can change from year to year.</p> <p>State-specific sources, such as the Washington Traffic Safety Commission or Massachusetts MBHS.</p>
Regulatory needs	
Medical marijuana programs	State-specific data and statistics, such as from the Massachusetts Department of Health, Washington State Department of Health, or Colorado Department of Public Health & Environment, which include information on program participation rates, and depending on the state, marijuana purchasing rates, reported medical conditions, and patient demographics.
Tax revenues and costs	State-specific budget reports from states with legal sales can provide data on marijuana-generated tax revenues and information on how states are spending of revenues, including allocations for health and social service programs, law enforcement training, and public education campaigns.

FOIA = Freedom of information act.

As noted above, a number of state-specific data sources exist in different domains of interest, and state-specific data can be richer than national datasets that standardize a limited set of data elements across all states. As an illustrative example, following the passage of Amendment 64 in Colorado in 2013 allowing for the retail sale and possession of marijuana, the Colorado General Assembly enacted Senate Bill 13-283 to mandate that the Division of Criminal Justice in the Department of Public Safety conduct a study of the impacts of Amendment 64, particularly on law enforcement activities. The study required analyzing a number of datasets and metrics, as shown in Table 2 below, which we’ve reproduced from the “Impacts of Marijuana Legalization in Colorado” 2018 report published by the Colorado Department of Public Safety, Division of Criminal Justice in October 2018.

Table 2. Data collection requirements of Colorado’s Senate Bill 13-283

Statutory Category	Statutory Definition
Impacts on Public Safety	
Marijuana-Initiated Contacts by Law Enforcement	Marijuana-initiated contacts by law enforcement, broken down by judicial district and by race and ethnicity
Marijuana Criminal Arrest Data	Marijuana arrest data, including amounts of marijuana with each arrest, broken down by judicial district and by race and ethnicity
Marijuana-Related Traffic Accidents	Traffic accidents, including fatalities and serious injuries related to being under the influence of marijuana
Out-of-State Diversion	Diversion of marijuana out of Colorado
Marijuana Site Operational Crime Statistics	Crime occurring in and relating to the operation of marijuana establishments
Marijuana Transfer Using Parcel Services	Utilization of parcel services for the transfer of marijuana
Probation Data	Probation data
Outdoor Marijuana Cultivation	Outdoor marijuana cultivation facilities
Money Laundering	Money laundering relating to both licensed and unlicensed marijuana
Organized Crime	The role of organized crime in marijuana
Impacts on Youth	
Comprehensive School Data	Comprehensive school data, both statewide and by individual school, including suspensions, expulsions, and police referrals related to drug use and sales, broken down by specific drug categories
Drug Endangered Children	Data related to drug-endangered children, specifically for marijuana
Diversion to Minors	Diversion of marijuana to persons under twenty-one years of age
Impacts on Public Health	
Data on Emergency Room Visits and Poison Control	Data on emergency room visits related to the use of marijuana and the outcomes of those visits, including information from Colorado Poison Control Center
Monitor Health Effects of Marijuana (Colorado Department of Public Health and Environment)	Monitor changes in drug use patterns, broken down by race and ethnicity, and the emerging science and medical information relevant to the health effects associated with marijuana use.
	The Department shall appoint a panel of health care professionals with expertise in cannabinoid physiology to monitor the relevant information. The panel shall provide a report by January 31, 2015, and every two years thereafter to the State Board of Health, the Department of Revenue, and the general assembly. The Department shall make the report available on its website.
	The panel shall establish criteria for studies to be reviewed, reviewing studies and other data, and making recommendations, as appropriate, for policies intended to protect consumers of marijuana or marijuana products to the general public.
	The Department may collect Colorado-specific data that reports adverse health events involving marijuana use from the all-payer claims database, hospital discharge data, and behavioral risk factors.

Source: Derived from Rebound Solutions (2014), *Marijuana data discovery and gap analysis summary report* available at <https://cdpsdocs.state.co.us/ors/docs/resources/MarijuanaDataDiscoveryandGapAnalysis.pdf>.

Although the Colorado impact assessment report noted limitations with using the data shown in Table 2 to make causal inferences about the impact of marijuana legalization, given the difficulty in disentangling the effects of legalization from other changes, (including societal and legal changes), we believe that taken together, Table 1 and Table 2 above provide a roadmap for states to consider the kinds of data elements to be collected and analyzed repeatedly over time, including prior to legalization.

5.2 Data Sharing Considerations

To be able to assess the wide-ranging impacts of legalizing cannabis, data sharing between agencies and development of analytical environments is paramount.

With data sharing comes the need for data governance protocols that outline what data is to be shared, for what specific purposes, and with whom. Necessary privacy and security protections need to be put in place, particularly when dealing with protected health information or personally identifying information.

5.2.1 What data needs to be shared

Different research and policy questions will require different degrees of data sharing, data protections, and data use agreements. For example, triangulating whether hospitalizations for severe cannabis-related health issues (such as the serious lung illnesses tied to vaping of cannabis that contained vitamin E acetate) stemmed from legal vs. black-market sources might require data sharing between public health and public safety agencies. Likewise, data sharing between hospitals or pharmacies and the agencies or regulatory bodies that oversee medical cannabis programs could facilitate studies on the use or substitution of cannabis for prescription medications, such as opioids, to treat chronic pain.

5.2.2 Who needs access to the data?

To establish state laws and regulations governing cannabis, policy makers at the state and even federal level need access to data. These data include seed-to-sale tracking and lab reports as part of the quality assurance process of leaf and edible for cannabis products, and information on the consumption and sale of black market cannabis products that could endanger public health and safety. Other individuals who may need access to cannabis-related data are program analysts, public health analysts/researchers, child welfare caseworkers, and executive level agency leadership. Different roles will require different levels of access—for example, state agency staff may need access to individual, micro level data, whereas some researchers and leadership may need only aggregated data to understand broader population health trends.

5.3

Systems Considerations

Data sharing and analysis requires the development of systems to collect, store and aggregate data, ideally, in a dedicated analytical environment.

It appears that there are widely varying degrees of systematic tracking and data completeness in the states that have legalized cannabis. Some states have complex seed-to-sale tracking and updating systems. Licensing systems are also used to collect some data, but there are inconsistencies in the types of data collected from state to state.

There also appears to be little interoperability between systems, which is reminiscent of the early stages of Health Information Exchanges or Electronic Health Records, where systems could not effectively communicate with each other to exchange data. Having standardized system components and collected lessons learned from the states that legalized cannabis early on will help promote interoperability as the systems evolve.

5.4

Data Collection and Integration Challenges

To understand the impacts of cannabis legalization on health and human services systems, states need to think carefully about analytic and data needs and challenges. Doing so will require a gap analysis, to assess what types of data are needed to answer a given question, whether those data or metrics can be derived from available data sources, and if not, what new data must be collected and how. For example, to fully characterize cannabis use and purchasing behavior among adolescents—which is an important research area given the potentially life-altering health risks linked to adolescent use of cannabis—states need to consider how to systematically collect data on underage purchasing, purchasing by proxy from legal dispensaries, and black-market purchases by or for adolescents.

As with underage use of cannabis, characterizing the black market can be challenging. Public safety agencies play an important role in investigating the factors that drive continued black-market consumption after cannabis legalization, while public health and human service agencies can help test strategies and incentives to curb black-market purchases. Better data collection can also help assess the extent to which black-market vs. retail cannabis are contributing to cannabis-related emergency room visits or poisonings.

Analytic techniques can be helpful to integrate data across different sources and scales. Data aggregated by zip code vs. by city or town can be combined using spatial interpolation, but doing so also introduces measurement error, and thus must be used judiciously. Data that are geocoded lend themselves to data visualization and pattern analysis, such as ‘hot spotting.’ Such techniques can be used, for example, to examine differences in health and human services outcomes in regions with a high vs. low density of cannabis dispensaries.

Examples of program areas a state may want to consider:

- Impact on Medicaid/social services expenditures attributable to adverse cannabis consumption
- Does availability of legal cannabis in communities increase the complexity of issues facing vulnerable children and families? How is this monitored and measured?
- Can available population health data sources and program outcomes data provide human services agencies with information to inform intervention strategies across programs? (e.g. child welfare, behavioral health, homelessness, child support)
- What, if any, new capabilities or resources do human services agencies need to address new challenges? Where in the service delivery system are these capabilities most needed (State, local, private providers, health care providers)?

As the above issues indicate, having analytical capabilities is essential to determine what impacts legalizing cannabis can have on health and human services, both at an individual as well as at a macro level in states. Data analytics is a key aspect that needs to be an integral component to make informed policy and programmatic decisions affecting population health and well-being.

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6

FUNDING ISSUES



6.1

Funding structures

Over the last few years there have been successes and significant challenges during the implementation phase of legalization. After years of legal operations in several states, the consistencies in how cannabis initiatives are passed, how the programs are structured, and the financing approach taken by states highlight many areas not having effective regulatory structures, primarily in the areas of data collection, enforcement, and health. Inconsistencies also exist, including around start-up activities and how funding is applied to different implementation areas.

In the states that legalized cannabis through ballot initiatives, those initiative campaigns often used the argument of revenue generation as part of their case for passage. Therefore, across states, a commonly-used structure is to house the cannabis program under the Department of Revenue, and the industry is often treated with the same licensing and regulatory approach as the liquor industry. Cannabis programs are usually accounted for in the state budget, and following a year or two of operation, are supported by tax revenues from the sale of cannabis itself. This model has been effective thus far, but as noted in this paper, there have been many shortcomings that have become apparent as programs progress, which could be greatly aided by more data collection and analysis, as well as technical assistance to support in the project initiation.

Although cannabis programs are primarily housed under the Department of Revenue, they affect all aspects of state government. Yet many states lack the ability to accurately measure the widespread effects of cannabis use and cannabis legalization on society, due to a lack of available data. One attempt at addressing this issue comes from the Commonwealth of Massachusetts. Massachusetts pioneered a data initiative—called the Marijuana Baseline Health Study—prior to implementing their recreational marijuana program. The study established a baseline of measures that could eventually be used to assess program impact,

by comparing the baseline measures to the same set of measures collected after retail sales began. Measures like roadway crashes, poison center calls, crime statistics, and data on marijuana use patterns provide a comprehensive view of society that enable the state government to assess what policies would be most effective in counteracting the negative effects of the program.

Some states fund their programs with fees on registrants (both users and businesses). Such funding mechanisms have the value of being theoretically scalable with the growth of the industry. It does however put the regulator in the potentially challenging position of being dependent on the industry it regulates with the potential tension that creates.

6.2 Funding priorities

Funding the governmental organizations affected by cannabis legalization (such as the organizations that oversee addiction treatment or public education) is mostly left up to the supporting agencies. As such, the attention required to set up policies and procedures is often neglected. The most obvious funding allocation is to licensing and permitting with seed-to-sale systems following. While these two areas are important to get the program off the ground and to begin to recognize tax revenue, many other areas such as office build out, staff hiring, training, and case management are often slow to get started. Prior to rolling out retail sales, states should think through hiring needs for regulatory oversight, how staff are managed, and where the processes and procedures are defined.

Another funding priority is public safety needs and enactment of laws to prevent criminal activity within the industry. Because cannabis is still illegal at the federal level, there is a lack of banking and reporting for cannabis businesses, which can make it easy for business owners to commit crimes like fraud and tax evasion. Seed-to-sale systems are another recent development that have been implemented to track cannabis plants throughout the entire supply chain and monitor potency and contamination. Police also lack technology to help enforce the laws to protect public safety on our nation's roads and highways. For impaired driving instances, at present there is not widespread availability of roadside impairment test like a breathalyzer for alcohol. Because the blood tests for THC concentration are very expensive, they are not often requested (particularly if alcohol was also involved), and thus the data on frequency of cannabis impaired driving cases are questionable. To more effectively identify cannabis impairment, there has been an increase in the training of Drug Recognition Experts (DRE's) within law enforcement agencies. Developments are also being made to create more efficient and cost-effective tests for cannabis impairment. Taken together, these efforts have reduced fraud and criminal activity and more developments continue to be made to address the threat of cannabis impaired driving.

Finally, health risks have been a major source of concern in states with legalized recreational cannabis. There is still a lot to be learned about the impacts of cannabis on the body, and funding of research is needed to address unanswered questions. Some studies suggest that cannabis has therapeutic effects, but there is also evidence linking cannabis use to unintended poisonings and addiction. Some states have noted that, since the legalization of recreational cannabis, poison center calls and hospital visits have risen due to accidental and

misuse. However, more robust research that includes a control group (to control for factors associated with the passage of time, such as increases in cannabis use or potency), are needed to make causal inferences. Universities, government sponsored laboratories, and independent institutions are all conducting research to more clearly identify the effects of cannabis usage. Packaging and labeling regulations have been put into place and efforts to refine these policies continue to be made to protect citizens. Many states have also implemented a universal symbol placed on cannabis products to make them easier to identify, and they have required safe usage instructions on packaging to prevent misuse and accidental use of cannabis products as well.

Implementing a new cannabis program can be challenging, particularly when the time frame for a state to get a system up and running is abbreviated to meet statutory deadlines. After reviewing many of the issues that have arisen following recreational legalization across the country, we see a clear need for the refinement of programs to protect citizens and prevent criminal activity. Financial resources must be allocated towards data collection, law enforcement and health research to more effectively regulate this new industry. Funding for start-up activities should not be forgotten. Developing standards for data collection is imperative and funding for designing business processes, interfaces from data systems, and the implementation of data analytics are vital to on-going operations of the cannabis programs.

7

CONCLUSIONS AND RECOMMENDATIONS



There are a myriad set of issues surrounding the legalization of cannabis for states, from a public health, public safety, and human services perspective, to revenue considerations and economic growth, to name but a few. What is clear though, is the importance of having sound data upon which state officials can make informed policy decisions. Data sharing and data use agreements, coupled with analytical capabilities and support for research, are key factors states should take into account when considering the legalization of cannabis. Early on in the process of legalization, states should begin identifying areas of interest for research and policy concerns, and the associated data needs, and should begin collecting historical data to establish a baseline against which legalization impacts can be measured. Data analytics are a critical component of a state's efforts to effectively assess the implications of legalizing cannabis in health and human services, and should be one of the priorities states have as they undertake an effort toward legalization. The ramifications of not having high quality data and analytics to monitor and assess the impacts of legalization on communities are too consequential for states to ignore.

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BIBLIOGRAPHY

Massachusetts Department of Public Health. “Marijuana Baseline Health Study: Final Report.” July 2019. Available at <https://www.mass.gov/report/massachusetts-department-of-public-health-marijuana-research>.

Pew Research Center Survey: <https://www.pewresearch.org/fact-tank/2019/11/14/americans-support-marijuana-legalization/>

Pew Charitable Trusts brief: “Forecasts Hazy for State Marijuana Revenue.” https://www.pewtrusts.org/-/media/assets/2019/08/marijuana-brief_v2.pdf

Washington Post article “potent pot, vulnerable teens trigger concerns in first states to legalize marijuana”: https://www.washingtonpost.com/national/potent-pot-vulnerable-teens-trigger-concerns-in-first-states-to-legalize-marijuana/2019/06/15/52df638a-8c9a-11e9-8f69-a2795fca3343_story.html

Impacts of Marijuana Legalization in Colorado, A Report Pursuant to Senate Bill 13-283: https://cdpsdocs.state.co.us/ors/docs/reports/2018-SB13-283_Rpt.pdf

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