Cannabis-Impaired Driving

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Executive Summary

As a growing number of states adopt medical and adult-use cannabis laws, increased attention has been placed on cannabis-impaired driving and the policies that government officials can advance to proactively address this important issue. The following paper provides relevant background on cannabis-impaired driving as well as best practices that government officials can incorporate into their broader cannabis policy reform efforts.

Placing Cannabis-Impaired Driving in Perspective

While cannabis-impaired driving is a serious matter that policymakers should address head-on, it is important to place this issue in perspective in order to have the most informed discussions and to advance the most optimal set of policies. Towards this end, there are three major points worth highlighting:

1. Cannabis-impaired driving is a policy challenge regardless of whether a state has any form of legal cannabis access;
2. Increases in traffic fatalities have not been linked to advancements in state cannabis policy reforms; and
3. Cannabis is just one of many substances (e.g. alcohol, opioids, and illicit drugs) that contribute to impaired driving and, therefore, should be addressed within the broader context of reducing all forms impaired driving.

Policy Frameworks for Cannabis-Impaired Driving

Policy frameworks for cannabis-impaired driving vary considerably by jurisdiction, but they typically involve two core components: (1) the legal standard for determining cannabis-impaired driving and (2) the enforcement of this legal standard. Given the current state of technology for detecting cannabis impairment, **policymakers should emphasize roadside observations of impairment via Drug Recognition Experts (DREs)—law enforcement officers trained specifically to detect impairment from cannabis, opioids, and other substances.** A growing number of states are also extending open container laws to cannabis, which can serve as a useful policy for addressing cannabis-impaired driving.

Existing and Emerging Technology to Detect Cannabis-Impaired Driving

There are several methods available for detecting the presence of tetrahydrocannabinol (the psychoactive component of cannabis, known as THC) in a driver; however, at this stage none of these methods are effective at detecting actual impairment. As the U.S. Congressional Research Service asserted in a recent report, "tests for the presence of marijuana in a driver's body are inadequate to determine impairment."[i] While several jurisdictions in the U.S. are launching pilot programs to evaluate the efficacy of certain technologies and Canada has authorized law enforcement to utilize oral fluid testing devices at scale, these technologies have limitations and, therefore, should be paired with formal DRE evaluations.

Drug Recognition Experts

Until technology reaches the point where testing devices can consistently and accurately detect cannabis-impairment, DREs can help detect and address cannabis-impaired driving. However, DREs are not immune to personal biases, and their evaluations are prone to some degree of subjectivity. Further, knowing that the enforcement of cannabis-related crimes has historically targeted communities of color at disproportionate rates, ongoing training and evaluations of DREs should be required.

Policy Recommendations

In order to proactively address cannabis-impaired driving, government officials should consider the following policy recommendations:

1. Establish independent working groups to study this important issue.
2. Launch public awareness campaigns.
3. Invest in research and technology.
4. Extend open container laws to cannabis.
5. Ensure that policy reforms are legal, based upon science, do not violate civil liberties, and incorporate the perspectives of key stakeholder organizations.

Placing Cannabis-Impaired Driving in Perspective

Consuming cannabis before operating a motor-vehicle is dangerous. Studies have shown that driving under the influence of cannabis can slow reaction time, including responding to unexpected events that require braking in an emergency.[ii] It can also impair coordination and perception.[iii] As such, government officials should have substantive policy discussions over how to best mitigate cannabis-impaired driving.

As policymakers engage in these conversations, it is important to place cannabis-impaired driving in the proper perspective in order to have the most informed discussions and to advance the most optimal set of policies. Towards this end, there are three major points worth highlighting: (1) cannabis-impaired driving is a policy issue regardless of whether a state has any form of legal cannabis access; (2) cannabis laws—whether medical or adult-use—are not associated with increases in traffic fatalities; and (3) cannabis is just one of many substances (e.g. alcohol, physician-prescribed opioids, and illicit drugs) that contribute to impaired driving and, therefore, should be addressed within the broader context of reducing all forms impaired driving.

Cannabis-Impaired Driving Is a Challenge Regardless of a State's Existing Cannabis Laws

According to the Federal Government's National Survey on Drug Use and Health, 40.9 million Americans consumed cannabis in 2017, and a considerable portion of this consumption occurred in states without any form of legal cannabis access.[iv] Regardless of whether a state has adopted a cannabis law, cannabis is widely available through the illicit market. As a result, cannabis-impaired driving is a policy challenge in every U.S. state.

The State of Texas is a case in point. Despite having one of the most restrictive cannabis policy frameworks in the country (both medical and adult-use cannabis remain illegal), approximately 2.4 million individuals consume cannabis each year, and car crashes where drivers test positive for cannabis are on the rise.[v] Policymakers, therefore, should remain cognizant of the fact that cannabis-impaired driving is a policy challenge regardless of whether they adopt comprehensive cannabis policy reforms.

Medical & Adult-Use Cannabis Laws Are Not Associated with Increased Traffic Fatalities

While opponents of cannabis policy reforms routinely claim that these laws make roads more dangerous, a growing body of research highlights (1) that medical cannabis laws are actually associated with declines in traffic fatalities and (2) that adult-use cannabis laws are not associated with increases in traffic fatalities.

Medical Cannabis Laws Are Associated with Declines in Traffic Fatalities

According to a 2017 study conducted by researchers from Columbia University's Mailman School of Public Health and published in the *American Journal of Public Health*, **states with medical cannabis laws had lower traffic fatality rates than states without medical cannabis laws**, and the adoption of a medical cannabis law is "associated with immediate reductions in traffic fatalities in those aged 15 to 24 and 25 to 44 years, and with additional yearly gradual reductions in those aged 25 to 44 years."[vi] This is one of the most comprehensive studies on cannabis-impaired driving and is based upon decades of data from the National Highway Traffic Administration's Fatality Analysis Reporting System (FARS).

Adult-Use Cannabis Laws Do Not Increase Traffic Fatalities

Two recent studies published by the *American Journal of Public Health* and the National Bureau of Economic Research underscore that adult-use cannabis laws are not associated with increases in traffic fatalities.

- According to a 2017 study conducted by researchers from the University of Oregon and published in the *American Journal of Public Health*, **"changes in motor vehicle crash fatality rates for Washington and Colorado were not statistically different from those in similar states without recreational marijuana legalization."**[vii]

- According to a 2018 study by researchers from the University of Oregon and published as a National Bureau of Economic Research Working Paper, Washington and Colorado "saw similar changes in marijuana-related, alcohol-related and overall traffic fatality rates" as states without adult-use cannabis laws. This led researchers to conclude that "**the similar trajectory of traffic fatalities in Washington and Colorado relative to their synthetic control counterparts yield little evidence that the total rate of traffic fatalities has increased significantly as a consequence of recreational marijuana legalization."**[viii]

Testing Positive for THC Does Not Necessarily Mean Impairment

A broader issue worth highlighting is that drivers who test positive for THC are not necessarily under the influence of cannabis since THC can remain detectable in an individual's system for weeks.[ix] A landmark 2017 study conducted by the National Highway Traffic Safety Administration found "there was no significant contribution to crash risk" from testing positive for cannabis.[x] More recently, a May 2019 study conducted by researchers in British Columbia found that there was no increased crash risk among drivers who tested positive for THC.[xi]

This research does not mean that driving under the influence of cannabis is safe, but rather that a positive THC test does not necessarily mean that a driver is under the influence of cannabis at the time of testing. As the Congressional Research Service asserted in a May 2019 report, **"tests for the presence of marijuana in a driver's body are inadequate to determine impairment."**[xii] Consequently, reports by opponents of cannabis legalization that rely solely upon THC testing data should be received with a degree of skepticism.

Cannabis Is One of Many Substances That Contribute to Impaired Driving

Finally, it is important to note that cannabis is just one of many substances that contribute to impaired driving and, when compared to alcohol, is a relatively minor contributor to the total number of impaired driving cases.

According to a 2018 report by the Colorado Department of Public Safety, alcohol is solely responsible for the vast majority (79.6 percent) of impaired driving cases.[xiii] Since law enforcement often does not test for additional substances once alcohol is detected, these figures may understate the actual number of impaired driving cases involving cannabis and other drugs. However, even after taking this into consideration, it is clear that alcohol is the leading culprit of impaired driving on America's roadways. The prevalence of alcohol-impaired driving combined with its substantial impact on public safety has led some policy experts to conclude that allocating resources to reduce alcohol-impaired driving has far greater public value than allocating resources to reduce cannabis-impaired driving. As Dr. Eduardo Romano of the Pacific Institute for Research & Evaluation told the *New York Times*, "I'm not saying marijuana is safe. But to me it's clear that lowering the B.A.C. should be our top priority. That policy would save more lives."[xiv]

Figure 1: Presence of Any Drug & Polydrug Use in Colorado, 2018

Drug Count	Drug(s) Detected	n	% Subtotal	% Total
No Drug	None Detected	165	100.0%	0.9%
One Drug	Alcohol Only	14,052	91.3%	78.8%
	THC Only	957	6.2%	5.4%
	Single Other Drug	386	2.5%	2.2%
	Subtotal	15,395	100.0%	
Polydrug	Alcohol and THC	829	36.6%	4.7%
	Alcohol and Other	380	16.8%	2.1%
	THC and Other	469	20.7%	2.6%
	Alcohol, THC, and Other(s)	234	10.3%	1.3%
	Polydrug Not Alcohol or THC	352	15.5%	2.0%
	Subtotal	2,264	100.0%	
Total			17,824	100.0%

Source: Colorado Dept. of Public Safety. *Driving Under the Influence of Drugs and Alcohol: A Report Pursuant to House Bill 17-1315.* July 2018

Additionally, new research indicates that prescription opioids are a growing contributor to fatal car crashes. As researchers from Columbia University concluded in a February 2019 study published in *JAMA*, "prescription opioids are increasingly involved in fatal motor vehicle crashes."[xv]

Cannabis-impaired driving remains a serious issue, and policymakers should take proactive measures to minimize its prevalence. However, comparative data highlight that cannabis-impaired driving should be addressed within the broader context of reducing all forms of impaired driving.

Policy Frameworks for Cannabis-Impaired Driving

Policy frameworks for cannabis-impaired driving involve two components: (1) the legal standard for determining cannabis impaired driving and (2) the enforcement of this legal standard.

State Legal Standards for Determining Cannabis-Impaired Driving

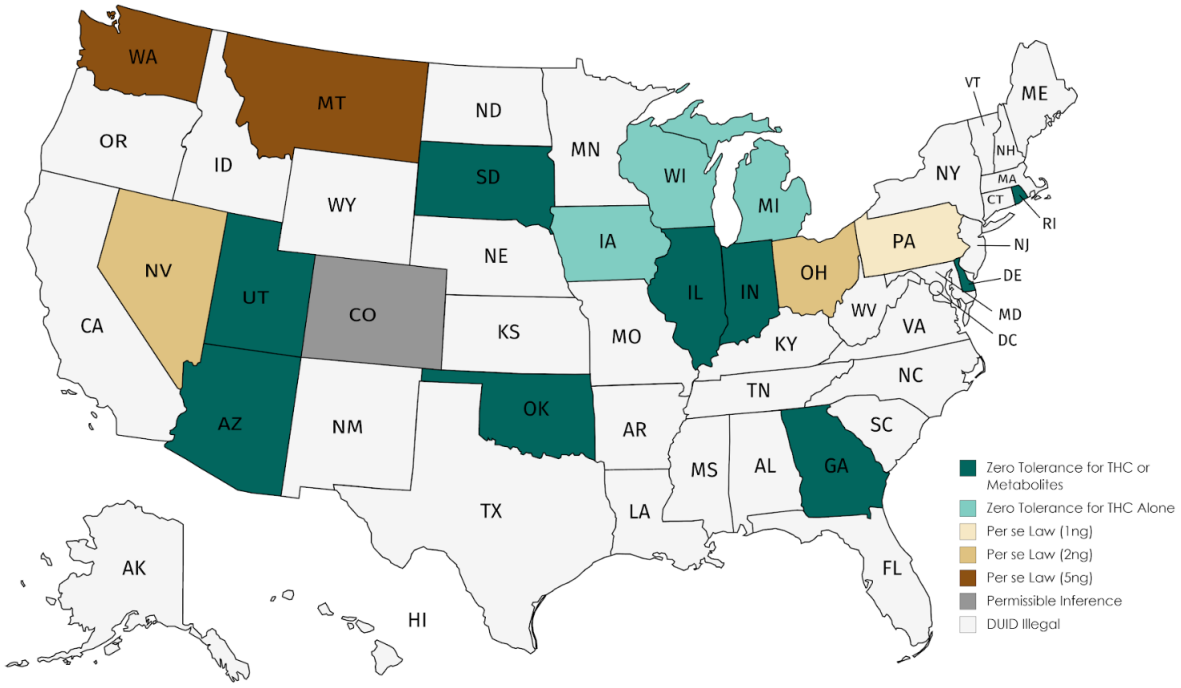
Every state in the U.S. prohibits driving under the influence of cannabis, but there is considerable variance in the structure of these state laws. These laws fall into four categories: (1) zero tolerance laws for THC or its metabolites, (2) zero tolerance laws for THC alone, (3) per se laws, and (4) reasonable inference laws.

The breakdown of state-level cannabis-impaired driving laws is as follows:

- **Zero Tolerance for THC or THC Metabolites (9 States):** These laws make drivers liable for arrest if any trace of THC or a THC metabolite is detected.
- **Zero Tolerance for THC Alone (3 States):** These laws make drivers liable for arrest if any trace of THC is detected.
- **Per se Laws (5 States):** These laws make drivers liable for arrest if they are found to exceed a certain blood THC concentration (typically measured in terms of nanograms of THC per milliliter of blood or ng/ml). State laws use THC concentration limits ranging from 1 ng/ml to 5 ng/ml.

- **Permissible Inference Laws (1 State):** Colorado is the only state with a permissible inference law. Under this law, if drivers are found to exceed a certain blood THC concentration (in Colorado's case, this is 5 ng/ml), it is permissible to classify the driver as impaired.
- **DUID Illegal Laws (32 States):** Driving under the influence of cannabis is illegal in all 50 states, but in 32 states there are no specific zero tolerance, per se, or permissible inference standards in place.[xvi] In all states, charges can be brought against drivers for observed impairment.

Figure 2: Overview of State-Level Cannabis-Impaired Driving Laws, 2019



Source: Governors Highway Safety Association, *Marijuana Related Laws*, April 2019.

Zero tolerance and Per se laws pose unique challenges since the detection of THC does not necessarily mean impairment at the time of driving given that THC can remain detectable in an individual's system for weeks.[xvii] For this reason, the Michigan Impaired Driving Commission recently recommended that **"because there is a poor correlation between [THC] bodily content and driving impairment, the Commission recommends against the establishment of a threshold of [THC] bodily content…and instead recommends the use of a roadside sobriety test to determine whether a driver is impaired."**[xviii]

Per se and permissible inference laws are particularly problematic since the concentration of THC does not correspond to a certain level of impairment. Per se and permissible inference laws for cannabis were structured to mirror alcohol-impaired driving laws; however, this approach is unsupported by research. As the Governors Highway Safety Association concluded in a May 2018 report, "while many wish that per se limits could be justified similarly for drugs in general and marijuana in particular, they cannot."[xix]

Open Container Laws for Cannabis

Following the passage of medical and adult-use cannabis laws, several states have adopted open container laws for cannabis. Similar to open container laws for alcohol, these policies typically prohibit drivers from having cannabis inside vehicles unless the product is appropriately closed, sealed, or stored. According to a May 2019 analysis by the National Conference of State Legislatures, California, Colorado, Illinois, Minnesota, Vermont, and Washington all have open container laws for cannabis.[xx]

Enforcement of Cannabis-Impaired Driving Laws

Enforcement of cannabis-impaired driving laws varies by jurisdiction, but the process typically involves the following: (1) initial contact and assessment by a law enforcement officer, (2) a standardized field sobriety test, (3) a drug recognition evaluation, and (4) if legally permissible, a biological specimen test.

An Overview of Typical Enforcement for a Cannabis-Impaired Driving Incident

Whether at a DUI checkpoint, on the scene of an accident, or after observing illegal or unsafe driving behavior, a law enforcement officer will initiate contact with a driver. The officer will then make an initial assessment of the potential for impairment based upon the individual's driving, speech, behavior, physical appearance (e.g. bloodshot eyes), statements about alcohol or drug use, and other evidence of drug use (e.g. open container). If impairment is suspected, the officer may conduct pre-arrest screening tests like the Standard Field Sobriety Test.

The Standard Field Sobriety Test (SFST) is a sufficient test for identifying impairment but not what caused the impairment. Many officers are currently not trained to identify impairment from drugs other than alcohol, and a SFST cannot detect whether cannabis is in a suspect's system. A 2012 study showed that only 30 percent of people under the influence of THC failed the field test.[xxi] However, when a driver is pulled over for impaired driving the officer is first and most importantly working to determine if the driver is under the influence or ill, so the driver can be cleared from the roadway to preserve the safety of other motorists. Only after this assessment is complete is the officer seeking to determine the culprit for the driver's impairment. So regardless of what a driver might be under the influence of, a field sobriety test should take place as a primary means of protecting the public.

After the field sobriety test, if an officer still suspects impairment, they will request a breath or blood test. Officers will normally only pursue alcohol offenses because they are easier to prove and prosecute. A driver who is under the influence of alcohol and other drugs will typically only get charged for the alcohol offense. If a test does not show an illegal level of alcohol impairment, an officer may take additional steps to support a drug-impaired driving charge. An officer may request a Drug Recognition Expert (DRE) to the scene to evaluate the driver.

DREs are police officers specifically "trained to recognize impairment in drivers under the influence of drugs other than, or in addition to, alcohol."[xxii] The DRE performs a comprehensive 12-step Drug Recognition Evaluation to determine if impairment is due to drug use. In addition to this evaluation or if no DRE is available, an officer may collect a biological sample (e.g. blood) to be analyzed by a toxicology lab to confirm if the suspect had used drugs.

Existing and Emerging Technology to Detect Cannabis-Impaired Driving

There are multiple methods available for detecting THC in a driver's system; however, virtually all of these methods fail to detect actual impairment since THC can remain detectable in an individual's system long after the actual time of consumption.

- **Blood Tests:** Government officials typically consider blood tests the "gold standard" of testing for cannabis, but there are several limitations with this method. THC can remain detectable in blood for up to a month after it was first ingested, making it difficult to determine actual impairment.[xxiii] Additionally, this method is invasive and resource-intensive since blood collections typically require a warrant as well as a trained practitioner to draw blood.[xxiv]

- **Hair Tests:** Hair tests can detect the presence of THC; however, since THC can remain detectable in hair for months after the actual time of consumption, this method is not reliable for gauging impairment.[xxv] Additionally, hair can test positive for THC from environmental exposure (e.g. second hand smoke).[xxvi] As such, hair testing is not appropriate for determining cannabis impairment.

- **Urine Tests:** Urine tests can also detect the presence of THC; however, since THC can remain detectable in urine for up to 30 days, this method is not reliable for gauging impairment.[xxvii]

- **Oral Fluid Tests:** Oral fluid tests can detect the presence of THC and represent some of the more promising methods for gauging impairment. While challenges remain since environmental exposure and other issues can create a false positive for consumption, several states are launching pilot programs to evaluate the feasibility of this method, and a number of promising technologies are on the horizon.[xxviii] This method has many advantages since the process is minimally invasive and trained law enforcement officers can conduct the test using approved devices on the roadside.

Emerging Government Programs for Testing for THC

With the emergence of new technology, policymakers in several jurisdictions have launched initiatives to increase law enforcement's use of screening devices that analyze oral fluid samples for detecting THC and other drugs. Since the early stage of these new THC screening devices have limitations, they are often paired with DRE evaluations and—in most instances—blood tests.

- **Canada:** In 2018, lawmakers in the Parliament of Canada enacted Bill C-46, which overhauled the country's policy framework for detecting and enforcing impaired driving. Under this legislation, police officers have the authority to conduct roadside impairment tests using oral fluid drug testing devices. All impairment testing devices must first receive the approval of the Attorney General of Canada.[xxix] To date, the Canadian Government has approved the Dräger DrugTest 5000 to test for THC, and the Attorney General is close to approving a new device called SoToxa after the country's independent committee of forensic toxicologists recommended its approval in 2019.[xxx] However, it is important to note that this oral fluid testing technology has several limitations since: (1) one study indicates that the device's false positive rate ranges from 14.5 percent for cannabis to 87.1 percent for cocaine and (2) the device does not function well in cold weather.[xxxi]

- **Michigan:** In 2016, the Michigan Legislature adopted Public Act 243, which established an oral fluid roadside testing pilot program in five Michigan counties. Under this program, certified Drug Recognition Experts (DREs) have the authority to request oral fluid samples from drivers who exhibit signs of drug impairment. DREs then test these samples for the presence of substances (including THC) using the Alere DDS2 system and—if a second sample is voluntarily provided—the Quantisal system.[xxxii] Based upon the initial results of this pilot program, the Michigan Legislature allocated an additional $626,000 in 2018 to expand this pilot program statewide.[xxxiii]However, it is important to note that the Alere DDS2 system has limitations. According to a 2013 study published in the *Journal of Analytical Toxicology*, the Alere DDS2 failed to provide a valid result 24% of the time.[xxxiv]

Several other jurisdictions at the state and local levels are evaluating the use of these devices for detecting roadside impairment, but the overall accuracy of this new technology poses limitations for the use of

these devices in isolation and, therefore, require additional measures (e.g. DREs) to determine impairment.[xxxv]

Technological Progress towards a THC Breathalyzer Test in California

Over the past several years, a California-based company called Hound Labs has been developing a so-called "marijuana breathalyzer" that can detect both the presence and amount of THC in an individual's breath. This technology has undergone clinical trials at the University of California San Francisco (UCSF), and the results of these UCSF trials are currently under peer review. Representatives at Hound Labs have stated that their breathalyzer technology could be ready for deployment by the end of 2019.[xxxvi] This technology would be a breakthrough for both cannabis policy and law enforcement since it would provide police officers with a fast and reliable method for testing for cannabis impairment.

Drug Recognition Experts

Until technology reaches the point where testing devices can consistently and accurately detect cannabis-impairment, investing in officer training to detect roadside impairment is a policy lever for enforcing impaired-driving laws and advancing public safety. Beyond the basic training for the Standard Field Sobriety Test that many officers receive, there are two additional levels of training for detecting drug-impaired driving.

- **Advanced Roadside Impaired Driving Enforcement (ARIDE) Program:** ARIDE is a 2-day, 16-hour program that trains law enforcement officers in detecting drug impairment (an issue that is not comprehensively covered in basic SFST trainings). The ARIDE training program provides an in-depth look at the signs and symptoms of drug impairment and enables law enforcement officers to more effectively make drug-impaired driving arrests. NHTSA developed the ARIDE training program in partnership with the International Association of Chiefs of Police.[xxxvii] ARIDE trainings are typically provided to officers at little to no cost.[xxxviii]

- **Drug Evaluation and Classification (DEC) Program:** The DEC Program is the official training program for certifying Drug Recognition Experts. DEC is both time and resource intensive, involving 72 hours of classroom training and more than 40 hours of field work.[xxxix] Following the completion of this program, law enforcement officers can conduct a comprehensive 90-minute, 12-step evaluation of drivers to determine whether they are impaired. The program can also be offered to prosecutors and toxicologists, so they can be more informed on the DRE process and relevant drug categories. The International Association of Chiefs of Police and NHTSA oversee the DEC Program.[xl] DRE trainings cost approximately $5,000 per officer, and some states offer these training for free.[xli]

These advanced training programs—particularly the DEC Program for training DREs—are becoming increasingly important as legal systems in several states have ruled that field observations cannot be considered in court for cannabis-impaired driving cases unless a law enforcement officer has been trained as an expert in detecting impairment. As the Massachusetts Supreme Court ruled in 2017, "Because the effects of marijuana may vary greatly from one individual to another, and those effects are as yet not commonly known, neither a police officer nor a lay witness who has not been qualified as an expert may offer an opinion as to whether a driver was under the influence of marijuana."[xlii] As such, DRE evaluations are increasingly viewed as the "gold standard" for proving drug impairment.

However, DREs are not immune to personal biases, and their evaluations are prone to some degree of subjectivity. Further, knowing that the enforcement of cannabis-related crimes has historically targeted communities of color at disproportionate rates, ongoing training and evaluations of DREs should be required.

Policy Recommendations

Regardless of a state's current cannabis laws, cannabis-impaired driving exists and is an ongoing policy challenge. The passage of comprehensive cannabis policy reforms provides a unique opportunity for government officials to address this important issue. Shifting consumption from the illicit market to a well-regulated system enables government officials to interface and communicate with cannabis consumers in new ways. Law enforcement can align and focus its efforts upon detecting and preventing cannabis-impaired driving (an issue that poses a real threat to public safety) rather than basic cannabis possession charges (an issue that poses virtually no threat to public safety). Additionally, the passage of adult-use cannabis laws establishes a proven source of tax revenue generation that policymakers can allocate to fund a range of public programs to address cannabis-impaired driving.

Government officials should consider the following policy recommendations: (1) establish an independent working group to study the issue of cannabis-impaired driving, (2) launch public awareness campaigns to prevent cannabis-impaired driving, (3) allocate cannabis tax revenue to train more DREs, (4) invest in research and technology, (5) extend open container laws to cannabis, and (6) ensure that policy reforms are legal, based upon science, and do not violate civil liberties.

Establish Independent Working Groups or Commissions to Study the Issue

Given the complexities surrounding state-level impaired driving laws, the current state of testing technology, and the impacts upon matters like civil liberties, state policymakers should establish independent working groups or commissions to study this important policy issue. Several states have launched such commissions to comprehensively study the matter of impaired driving (whether for cannabis or other drugs) and develop a series of recommendations for needed policy reforms. These commissions typically include a broad range of perspectives and technical experts. In Massachusetts, lawmakers established a 13-member Special Commission on Operating under the Influence and Impaired Driving "to conduct a comprehensive study relative to the regulation and testing of operating under the influence of marihuana, narcotic drugs and depressant or stimulant substances."[xliii] In some instances the scope of a commission's work is much more focused: in Michigan, legislators passed H.B. No. 5024 to establish the Impaired Driving Safety Commission to specifically "research and recommend a scientifically supported threshold of THC bodily content to provide evidence for per se impaired driving in this state."[xliv]

Lawmakers should ensure that these commissions incorporate a breadth of perspectives and experts. At a minimum, a functional commission should include representatives from law enforcement, public health, toxicology, civil liberties, racial justice issues, the legal community, medical cannabis advocates, adult-use cannabis advocates, and the cannabis industry.

Launch Public Awareness Campaigns to Prevent Cannabis-Impaired Driving

A major preventative measure policymakers can undertake to reduce cannabis-impaired driving is through a thorough public health education campaign. According to a national survey conducted in March 2019 by PSB Research, 48 percent of cannabis consumers in the US think it is safe to drive under the influence of cannabis.[xlv] National and state policymakers—as well as industry affiliates—have an

important role to play in educating the public about the dangers and consequences of driving while under the influence of cannabis. Since cannabis-impaired driving is a national challenge, such a campaign should be national in scope and target cannabis consumers in all states, regardless of a jurisdiction's existing cannabis policies. The national public awareness campaign, "If You Feel Different, You Drive Different", launched by the National Highway Traffic Safety Administration and the Ad Council in April 2018 is a significant step in the right direction.[xlvi]

Beyond national public awareness campaigns, the adoption of medical and adult-use cannabis laws at the state-level provides a unique opportunity to engage cannabis consumers about the risks associated with cannabis-impaired driving. There are several emerging models of public awareness campaigns that policymakers can emulate.

- **Colorado:** In Colorado, the Colorado Department of Transportation launched "The Cannabis Conversation" in partnership with representatives from the cannabis industry, community nonprofits, universities, local law enforcement, and other stakeholders to incorporate a range of perspectives in how to best tackle this issue. "The Cannabis Conversation" presents a unique approach that places collaboration and data-driven decision making at the center of optimizing public awareness campaign messaging.[xlvii]

- **California:** Prior to the official launch of adult-use cannabis sales, the California Office of Traffic Safety launched a public awareness campaign titled "DUI Doesn't Just Mean Booze."[xlviii]

- **Florida:** After the adoption of Florida's medical cannabis law, the Florida Department of Highway Safety and Motor Vehicles began the "Drive Baked, Get Busted" campaign.[xlix]

- **Canada:** After becoming the first major country in the world to adopt an adult-use cannabis law, Canada policymakers launched a public awareness campaign titled "Don't Drive High."[l]

As jurisdictions rollout and refine their impaired driving public awareness campaigns, policymakers at the national, state, and local levels can learn from the successes and failures of these initiatives.

In addition to public awareness campaigns, government officials should collaborate with consumer-facing cannabis businesses to advance innovative ways to communicate with individuals about the dangers associated with driving under the influence of cannabis. As an example, in Massachusetts, licensed cannabis retailers are required to make educational materials available that include warnings about how cannabis-impaired driving is prohibited under state law.[li]

Invest in Research and Technology

Since there is no current cannabis-related standard as reliable and consistent as those used to measure alcohol-related impairment (i.e. Blood Alcohol Content and Breath Alcohol Concentration levels), policymakers should invest in research and technology to identify a test or procedure that reliably indicates cannabis-related impairment. In August 2016, the U.S. Drug Enforcement Agency (DEA) provided revised guidance for researchers that makes it easier to conduct cannabis-related studies.

Meanwhile states are pioneering their own efforts to maintain roadway safety in post-regulated cannabis marketplaces. For example, the California Highway Patrol has partnered with the University of California San Diego School of Medicine to launch a program called Training, Research and Education Driving Safety (TREDS). The program continues to expand and just received funding from the National Highway Safety

Association to support education and training programs that will focus on driving under the influence of cannabis and prescription drugs.[lii]

At the state-level, policymakers can launch pilot programs to evaluate the accuracy and efficacy of roadside testing devices. As an example, in Michigan, policymakers initiated a pilot program to test the efficacy of oral fluid roadside analysis technologies.[liii]

As additional states adopt adult-use cannabis laws, they should coordinate their efforts to strategically allocate resources towards objectively evaluating current testing technologies and proactively developing new testing technologies to detect cannabis impairment.

Extend Open Container Laws to Cannabis

Much like alcohol and prescription drugs, the consumption of cannabis while driving is irresponsible and poses real public safety risks. Policymakers should follow the lead of states like California, Colorado, Illinois, Minnesota, Vermont, and Washington and extend open container laws to cannabis.[liv] Licensed cannabis businesses have a meaningful role to play in educating consumers about these policies and should be involved in collaborative, public-private initiatives to advance consumer education on this issue. Officials should collaborate with civil liberties and racial justice organizations to ensure that the content and implementation of extended open container laws do not result in disparate arrest rates.

Ensure That Policy Reforms Are Legal, Based Upon Science, and Respect Civil Liberties

The enforcement of impaired driving laws—particularly components of these policies that require the collection and testing of human biological specimens (e.g. blood, oral fluid, and urine)—have significant implications for civil liberties, racial justice, and privacy. As government officials develop policies to address cannabis-impaired driving, they should ensure that any existing or emerging policies do not unduly violate civil liberties or personal privacy and are not implemented in a manner that disproportionately impacts certain segments of the population. Accordingly, policymakers should incorporate the concerns and perspectives of key stakeholder organizations like the American Civil Liberties Union (ACLU), the National Association for the Advancement of Colored People (NAACP), and other pertinent groups at the national, state, and local levels. Since medical cannabis patients rely on cannabis to treat a range of conditions, the perspectives of patient advocacy groups (e.g. Americans for Safe Access) should also be built into the policymaking and implementation process.

Finally, the science surrounding cannabis, cannabis-related impairment, and the detection of cannabis impairment is rapidly evolving. Given the existing and emerging body of research surrounding cannabis, THC, and impairment, government officials should ensure that their policies and enforcement practices are based upon the latest scientific evidence.

Endnotes

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