

# LEGAL MEMORANDUM

No. 156 | JUNE 25, 2015

## Liberalizing Marijuana Use and Improving Driving Safety: Two Contemporary Public Policies on a Collision Course

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### Abstract

*Historically, America's marijuana and alcohol policies developed independently, but each one buttressed the other's salutary effects. Today, an increase in the number of marijuana users is likely to lead to an increase in the number of marijuana-impaired or marijuana-and-alcohol-impaired drivers. Society needs to be able to take steps to prevent medical and recreational marijuana initiatives from increasing the mortality and morbidity that alcohol-impaired driving already imposes. One way to achieve that goal would be to lower the blood-alcohol concentration (BAC) cap of 0.08 grams per deciliter (g/dL) from 0.08 g/dL to 0.05 g/dL or lower for everyone who is a registered medical marijuana patient, or even across the board. That response might be only a small step toward improving highway safety, but it certainly would be a useful one.*

For most of the 20th century, the nation's policies regarding marijuana and highway safety travelled along different, nonintersecting planes. There was a national consensus that the cultivation, distribution, possession, and use of marijuana should be outlawed. That policy rested on scientific research showing that marijuana is physically damaging, can be addictive, and offers no medicinal benefit that could not be obtained from other drugs that lack its potential short-term and long-term harms.

Since the 1980s, there has been similar agreement that drunk driving is a menace to highway safety and accounts for an unacceptably large amount of the morbidity and mortality on the nation's roads.<sup>1</sup> Excessive alcohol consumption today, coupled with the morbidity and mortality it causes on the nation's highways from motor

### KEY POINTS

- Little attention has been paid to the effect that increased marijuana use would have on drivers, passengers, pedestrians, and other motorists.
- The rise in marijuana use among drivers raises a serious concern because of the risk that it will impair a driver's ability to operate a motor vehicle safely.
- While studies do not prove that use of any particular amount of marijuana will inevitably cause an accident in any specific case or category of users, overall, they justify the conclusion that marijuana use is associated with an increased risk of motor-vehicle accidents due to its potential effects on driving performance.
- One way to prevent medical and recreational marijuana initiatives from increasing the mortality and morbidity that alcohol-impaired driving already imposes is to lower the blood-alcohol concentration cap from 0.08 g/dL to 0.05 g/dL or lower for everyone who is a registered medical marijuana patient, or even across the board.

This paper, in its entirety, can be found at <http://report.heritage.org/lm156>

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vehicle accidents involving alcohol-impaired drivers, costs the nation billions of dollars annually and in 2012 took the lives of more than 10,000 people, or one every 51 minutes. The nation's marijuana and alcohol policies developed independently, but each one buttressed the other's salutary effects.

The past two decades, however, have witnessed a considerable change in the laws regulating marijuana. Numerous states now allow marijuana to be grown, distributed, and used for medical purposes. Two states have gone further and permit recreational use of that drug.

Most of the debate has focused on the potential benefits or harms to individuals from marijuana use, the effect that legalization will have on the states' ability to deter the use of other drugs, the potential returns to the states' treasuries that would accrue from legalizing the sale of cannabis, and so forth. Little attention, however, has been paid to the effect that increased marijuana use would have on drivers, passengers, pedestrians, and other motorists.

The absence of such a discussion is unfortunate because the electorate should have before it all of the relevant costs and benefits of marijuana liberalization when deciding whether to revise state law. The revisions that have occurred already and any future marijuana legalization initiatives that may happen hereafter pose a material risk of corroding the gains in highway safety that the nation has witnessed over the past 30 years.

The public deserves to have all of the relevant evidence before making such an important change in the policy that the nation has followed since the first quarter of the 20th century. The burden of this paper is to summarize the relevant considerations.

### **The States Act to Reduce the Risk of Drunk Driving**

States began to address the problem of drunk driving a century ago by prohibiting "driving while intoxicated" or "driving under the influence" of alcohol. Nonetheless, it was difficult to persuade juries to convict a defendant of drunk driving, perhaps because of the combination of the tremendous growth in automobile use; the widespread acceptance of social alcohol use; and the belief that with

respect to anyone charged with driving while intoxicated, "There, but for the grace of God, go I." Judges also sentenced convicted drunk drivers quite leniently. Finally, and worst of all, for most of the 20th century, society treated drunken driving as a peccadillo or an occasion for humor.<sup>2</sup>

But that day has passed. The birth of private organizations—such as Mothers Against Drunk Driving (MADD)—changed the way that society treats the combination of alcohol and motor vehicles. MADD humanized the problem by identifying real-life victims of drunk driving, giving impetus to a social and political movement whose moral authority has continued to grow ever since. MADD and its allies were able to persuade police departments to use "sobriety checkpoints" to find and deter drunk drivers, legislatures to fix 21 as the minimum drinking age, and the nation to treat drunk driving as a national health problem. Some states also revised their substantive criminal laws to make it easier to prove that a driver was impaired.

By 2012, all 50 states and the District of Columbia had adopted laws that deem driving with a specific blood-alcohol concentration (BAC) of 0.08 grams per deciliter (g/dL) as a crime. Those statutes render a driver with that BAC intoxicated as a matter of law, whether or not he was impaired as a matter of fact.

Efforts such as those have proved quite successful. The National Highway Traffic Safety Administration (NHTSA) recently issued a preliminary report based on a 2013–2014 study of alcohol-impaired driving, concluding that there has been a material decrease in incidence of drunk driving over the past 40 years. Although state sentencing schemes for drunken driving convictions vary widely among the various states, one thing is clear: As a nation, we are serious about stopping drunk drivers.

Alcohol, however, is not the only psychoactive substance used by motorists. Other substances, such as marijuana, also have that effect. Over time, therefore, most states added those drugs to their DUI codes.

Regrettably, recent marijuana liberalization initiatives risk undoing the benefits we have achieved from combatting drunk driving. Moreover, the states will find it difficult automatically to apply

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1. Mortality refers to the number of deaths caused by drugged driving. Morbidity refers to the number of non-fatal injuries.  
2. See BARRON H. LERNER, ONE FOR THE ROAD: DRUNK DRIVING SINCE 1900 (2012).

the same regimen established for alcohol-impaired driving to drug-impaired driving. There are options available, however, that should be pursued.

### **The States Enact Medical and Recreational Marijuana Laws, Which Increases the Risk of Drugged Driving**

In 1996, California became the first state to enact so-called medical marijuana legislation. Adopted by a direct initiative, Proposition 215, entitled the Compassionate Use Act of 1996, authorized “patients” and caregivers to obtain and use marijuana and created an affirmative defense to the state criminal code for physician-recommended personal medical use. Today, 23 states have statutes authorizing physicians to recommend marijuana as a treatment.

The year 2012 witnessed the second evolution in state marijuana legislation as Colorado and Washington decided to legalize, to regulate, and to tax small amounts of marijuana possessed for personal, nonmedicinal use by people over 21 years of age. Two other states and the District of Columbia followed suit in 2014, and additional states may consider similar ballot measures in 2016.

The rise in marijuana use among drivers raises a serious concern because of the risk that it will impair a driver’s ability to operate a motor vehicle safely. There is yet no consensus that recent cannabis use will ineluctably cause the average marijuana user to suffer an automobile accident. “Nevertheless,” as one expert has put it, “driving while under the influence of marijuana cannot be recommended as safe.”<sup>3</sup> As the National Institute of Medicine concluded in 1999:

For most people the primary adverse effect of *acute* marijuana use is diminished psychomotor performance. It is, therefore, inadvisable to operate any vehicle or potentially dangerous

equipment while under the influence of marijuana, THC [tetrahydrocannabinol], or any cannabinoid drug with comparable effects.<sup>4</sup>

The psychic effects of marijuana impair psychomotor skills for a period of hours after taking the drug, making it inadvisable for any user to drive during that time. Moreover, no amount of compensatory behavior can prepare a driver for unexpected events or accelerate reaction time hampered by cannabis.<sup>5</sup> Accordingly, while studies do not prove that use of any particular amount of marijuana will inevitably cause an accident in any specific case or category of users overall, those studies justify the conclusion that marijuana use is associated with an increased risk of motor-vehicle accidents due to its potential effects on driving performance.<sup>6</sup>

Those new medical and recreational laws pose the risk of halting and in some instances reversing gains that society has made over the past 40 years in reducing the morbidity and mortality caused by alcohol-impaired driving. Even before the recent state medical and recreational marijuana laws went into effect, a considerable number of people drove after smoking cannabis. (In fact, some trauma centers reported a higher incidence of positive test results for illicit drugs than for alcohol among drivers involved in vehicle crashes.) The new initiatives will increase the number of adults who use cannabis, and some number of them may drive after doing so. Moreover, the potency of marijuana grown today exceeds that of the marijuana grown in the 1960s, when marijuana use was a symbol of generational change.

Finally, just as laws barring persons less than 21 years of age from consuming alcohol have not kept high school and college students from consuming beer, wine, and spirits, statutes permitting marijuana to be used only by adults have not prevented

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3. LESLIE L. IVERSEN, *THE SCIENCE OF MARIJUANA* 96 (2d ed. 2008).

4. INST. OF MED., *MARIJUANA AND MEDICINE: ASSESSING THE SCIENCE BASE* 4 (Janet E. Joy et al. eds., 1999).

5. See, e.g., WORLD HEALTH ORG., *CANNABIS: A HEALTH PERSPECTIVE AND RESEARCH AGENDA* 15 (1997).

6. See, e.g., BRITISH MED. ASS’N, *THERAPEUTIC USES OF CANNABIS* 66 (1997); MARCELLINE BURNS, *MEDICAL-LEGAL ASPECTS OF DRUGS* 153 (2003); MITCH EARLEYWINE, *UNDERSTANDING MARIJUANA: A NEW LOOK AT THE SCIENTIFIC EVIDENCE* 214 (2002); INST. OF MED., *supra* note 4, at 4; IVERSEN, *supra* note 3, at 163; NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., U.S. DEP’T OF TRANSP., DOT HS 808 078, *MARIJUANA AND ACTUAL DRIVING PERFORMANCE* 4-15 (1993); NAT’L INST. ON DRUG ABUSE, U.S. DEP’T OF HEALTH & HUMAN SERVS., *DRUGFACTS: DRUGGED DRIVING* 2 (2013) (hereafter NIDA, *DRUGGED DRIVING*); Johannes G. Ramaekers et al., *Dose Related Risk of Motor Vehicle Crashes After Cannabis Use: An Update*, in *DRUGS, DRIVING AND TRAFFIC SAFETY* 495 (J.C. Verster et al. eds., 2009) (“There is no evidence that *past* use of THC alone affects crash risks, but there is growing evidence that *recent* use of THC increases the risk for motor vehicle accidents compared to drug free drivers, particularly at high concentrations.”).

use of that drug by juveniles. Add in the fact that minors are more likely to have traffic accidents than adults and it is not hard to understand why the White House Office of National Drug Control Policy believes that the nation must undertake the same response to drugged driving that it has made to halt drunk driving.<sup>7</sup>

Accentuating that problem is another one. Alcohol has been the subject of extensive testing over decades, and science has found that (1) a strong relationship exists between BAC level and impairment or crash risk and (2) a person's BAC level changes slowly over time.<sup>8</sup> By contrast, a host of factors affect how a given drug concentration affects someone. Individuals differ in their body weight and composition, absorption, distribution, metabolism, and accumulation of a drug, as well as the effect it may have due to the rate at which it is absorbed, the frequency by which it has been used, and whether the blood-concentration level was obtained when the amount of the drug consumed was rising or falling.<sup>9</sup>

The effect of cannabis on an individual also hinges on what is known as “the set and setting” in which he uses marijuana—that is, an individual's prior experience with marijuana, his attitude toward its effect, his current mood, and the social setting in which it is used.<sup>10</sup> Moreover, there is a poor correlation between the level of a drug in a driver's blood and the effect that drug currently may have on his psychomotor or executive functions, because there may be detectable levels of illicit drugs in a driver's system long after the drug's impairing effect has worn off. Also, some parties who repeatedly use certain drugs develop a tolerance to their neurocognitive effects, requiring users

to increase their dose over time in order to obtain the same pleasurable effect, which means that the effect a drug may have on a driver's motor skills will vary from driver to driver.

The upshot, as NHTSA concluded in 2009, is two-fold: First, testing for the presence of marijuana in a driver's system has not yet reached the same state of scientific knowledge that we possess today for BAC testing. Second, specific drug-concentration levels cannot be reliably equated with effects on a driver's performance.<sup>11</sup> The result is that any particular level could be overinclusive or underinclusive.<sup>12</sup>

Where does that leave us? We cannot currently undertake roadside marijuana testing in the same way that we perform alcohol testing. Science cannot identify a particular THC concentration level in blood that can serve as a measure of impairment with the same degree of confidence we have that a 0.08 g/dL BAC level for alcohol demarks someone as legally impaired. Accordingly, we cannot rely on the alcohol model to generalize a drug-concentration level rendering the majority of drivers sufficiently impaired as a factual matter that the law can use that number as a per se definition of legal impairment.<sup>13</sup>

Moreover, even if we knew what the threshold THC level is, law enforcement officers do not have a portable, easy-to-operate, non-invasive device, similar to a breathalyzer, that an officer can use during a roadside stop to determine the amount of THC in a driver's blood. No such device exists today, and it is difficult to know whether and when one will be available.<sup>14</sup> As Professor Mark Kleiman has concluded, “A useful test would need to be physiological or psychometric rather than chemical.”<sup>15</sup>

7. In a 2014 report, the Rocky Mountain High Intensity Drug Trafficking Area Task Force found a 100 percent increase in Colorado traffic fatalities involving drivers who tested positive for marijuana use from 2007 to 2012 (from 39 to 78). See ROCKY MOUNTAIN HIGH INTENSITY DRUG TRAFFICKING AREA, *THE LEGALIZATION OF MARIJUANA IN COLORADO: THE IMPACT* 7 (2014); see also, e.g., *id.* at 7-22; Cully Stimson, *Traffic Fatalities of Marijuana-Positive Drivers on Rise in Colorado*, THE DAILY SIGNAL (Aug. 8, 2014), <http://dailysignal.com/2014/08/08/traffic-fatalities-marijuana-positive-drivers-rise-colorado/>. Colorado adopted a medicinal marijuana law in 2000 and a recreational marijuana law in 2012.
8. See, e.g., Consensus Dev. Panel, *Consensus Report: Drug Concentrations and Driving Impairment*, 254 J. AM. MED. ASS'N 2618, 2619 (1985) (hereafter *AMA Consensus Report*).
9. See, e.g., *id.* at 2620.
10. See, e.g., Wayne Hall & Louisa Degenhardt, *Adverse Health Effects of Non-Medical Cannabis Use*, 374 LANCET 1383, 1383 (2009).
11. See, e.g., RICHARD COMPTON & AMY BERNING, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., U.S. DEP'T OF TRANSP., DOT HS 811 174, *RESULTS OF THE 2007 NATIONAL ROADSIDE SURVEY OF ALCOHOL AND DRUG ABUSE BY DRIVERS* 4 (2009).
12. See, e.g., *AMA Consensus Report*, *supra* note 8, at 2620.
13. See, e.g., GOV'T ACCOUNTABILITY OFFICE, *DRUG-IMPAIRED DRIVING*, GAO-15-293, at 15 (Feb. 2015) (hereafter *GAO, DRUG-IMPAIRED DRIVING*); *AMA Consensus Report*, *supra* note 8, at 2620.
14. See ROBERT L. DUPONT ET AL., INST. FOR BEHAVIOR & HEALTH, *DRUGGED DRIVING RESEARCH: A WHITE PAPER* 18, 20 (2011).
15. MARK A.R. KLEIMAN, *MARIJUANA: COSTS OF ABUSE, COSTS OF CONTROL* 173 (1989).

Some policymakers contend that more research will identify a threshold amount of marijuana (and other drugs) in the blood that is equivalent to the 0.08 g/dL BAC.<sup>16</sup> That approach, however, may be of dubious utility. Funding additional research to speed those discoveries may be immensely valuable for graduate students seeking dissertation projects but may do nothing to squelch the risk of morbidity and mortality resulting from drugged driving today. It could be decades or longer before science can identify that standard, and longer still for companies to develop a usable measurement tool comparable to a breathalyzer. Waiting for those outcomes therefore could be like Vladimir and Estragon's wait for Godot: long and unproductive.

There are other options with a far greater likelihood of success that could be pursued today. Society should put its resources toward seeing to their implementation.

### Potential State Responses to the Risks of Drugged Driving

Some states have borrowed from their laws dealing with alcohol by fixing a “per se” or “zero tolerance” standard, a test that treats the presence of any amount<sup>17</sup> (or a trivial amount<sup>18</sup>) of marijuana or

one of its metabolites in the bloodstream as tantamount to complete impairment.<sup>19</sup> Some drug policy experts have endorsed that approach.<sup>20</sup> Those laws, however, are susceptible to the challenge that they rest on a scientifically unsound premise.<sup>21</sup> If that is true, *per se* and zero tolerance laws can be found arbitrary,<sup>22</sup> society will need a different response to drug-impaired driving.

There is, however, another option. Studies consistently show that people who smoke marijuana often combine it with other illicit drugs or alcohol.<sup>23</sup> The combination of marijuana and alcohol is particularly troublesome because each drug amplifies the effect of the other.<sup>24</sup> Consumed together, the two drugs seriously impair a person's driving performance and dramatically increase the risk of a single-vehicle crash.<sup>25</sup>

Accordingly, states with medical or recreational marijuana laws could reduce the BAC standard from 0.08 g/dL to 0.05 g/dL—or lower, even zero—for anyone who is a registered marijuana user in the state. That reform would allow states to address the most serious problem caused by medical and recreational marijuana laws—the enhanced impairment caused by the combined use of marijuana and alcohol—without burdening anyone.

16. See, e.g., Robert L. DuPont et al., *The Need for Drugged Driving Per Se Laws: A Commentary*, 13 TRAFFIC INJURY PREVENTION 31 (2012) (summarizing and criticizing that argument).
17. See, e.g., ARIZ. REV. STAT. ANN. § 28-1381(A)(3) (West 2014); DEL. CODE ANN. tit. 21, § 4177(a)(6) (2014); GA. CODE ANN. § 40-6-391(a)(6) (2014); 625 ILL. COMP. STAT. § 5/11-501 (2014); IND. CODE § 9-30-5-1 (2014); IOWA CODE § 321J.2(1)(c) (West 2014); MICH. COMP. LAWS § 257.625(8) (2014); MONT. CODE ANN. § 61-8-411(1) (2014); OKLA. STAT. tit. 47, § 11-902(A)(3) (2014); 75 PA. CONS. STAT. § 3802(d) (2014); R.I. GEN. LAWS § 31-27-2(b)(2) (2014); UTAH CODE ANN. §§ 41-6a-517 (West 2014).
18. See, e.g., NEV. REV. STAT. § 484C.110(3) (2014); OHIO REV. CODE ANN. § 4511.19(A)(1)(j)(i) & (vii) (West 2014); WASH. REV. CODE § 46.61.502(1)(b) (2014).
18. Several European Union nations also have zero tolerance drug laws. See Sarah M.R. Wille et al., *Evaluation of On-Site Oral Fluid Screening Using Drugwipe-5<sup>®</sup>, RapidSTAT<sup>®</sup> and Drug Test 5000<sup>®</sup> for the Detection of Drugs of Abuse in Drivers*, 198 FORENSIC SCI. INT'L 2, 2 (2010).
20. See, e.g., Robert L. DuPont et al., *The Seductive Mirage of a 0.08 G/DL BAC Equivalent for Drugged Driving*, 6 DATIA FOCUS, Winter 2013, at 36, 42; Robert L. DuPont et al., *supra* note 16, at 40; Gary M. Reisfield et al., *The Mirage of Impairing Drug Concentration Thresholds: A Rationale for Zero Tolerance Per Se Driving Under the Influence of Drugs Laws*, 36 J. ANALYTICAL TOXICOLOGY 353 (2012); Stephen K. Talpins et al., *License Revocation as a Tool for Combating Drugged Driving*, 18 IMPAIRED DRIVING UPDATE 29, 29 (Spring 2014); Robert B. Voas et al., *Prescription Drugs, Drugged Driving and Per Se Laws*, 19 INJ. PREVENTION 218 (2014).
21. See, e.g., JONATHAN P. CAULKINS ET AL., RAND CORP., CONSIDERING MARIJUANA LEGALIZATION: INSIGHTS FOR VERMONT AND OTHER JURISDICTIONS 33 (2015).
22. Cf. *Turner v. United States*, 396 U.S. 398 (1970); *Leary v. United States*, 395 U.S. 6 (1969).
23. See, e.g., CAULKINS ET AL., *supra* note 21, at 44; IVERSEN, *supra* note 3, at 95, 210-11; NIDA, DRUGGED DRIVING, *supra* note 6; *AMA Consensus Report*, *supra* note 8, at 2619.
24. See, e.g., BRITISH MED. ASS'N, *supra* note 6, at 73.
25. See, e.g., *id.*; GAO, DRUG-IMPAIRED DRIVING, *supra* note 13, at 16; IVERSEN, *supra* note 3, at 96; NIDA, DRUGGED DRIVING, *supra* note 6; ROBIN ROOM ET AL., CANNABIS POLICY: BEYOND STALEMATE 19 (2010); *AMA Consensus Report*, *supra* note 8, at 2619; Luke A. Downey et al., *The Effects of Cannabis and Alcohol on Simulated Driving: Influences of Dose and Experience*, 50 ACCIDENT ANALYSIS & PREVENTION 879 (2013); J.G. Ramaekers et al., *Marijuana, Alcohol and Actual Driving Performance*, 15 HUMAN PSYCHOPHARMACOLOGY CLINICAL & EXPERIMENTAL 551, 556-57 (2000).

The justification for such a revision is straightforward. Medical marijuana users are likely to use that drug,<sup>26</sup> and the combination of marijuana and alcohol impairs a driver more seriously than does the use of either substance alone. Alcohol begins to impair driving performance at a 0.05 g/dL BAC level, if not sooner, depending on a variety of factors. A standard breathalyzer can measure a driver's BAC at the 0.05 g/dL level or lower. And it is hardly burdensome to force a medical (or recreational) marijuana user to choose between drinking alcohol and driving. Even if a state were to adopt a zero g/dL BAC level, asking someone to forgo drinking before driving is hardly an unreasonable request.

### Conclusion

An increase in the number of marijuana users is likely to lead to an increase in the number of marijuana-impaired or marijuana-and-alcohol-impaired drivers. Society needs to be able to take steps to

prevent medical and recreational marijuana initiatives from increasing the mortality and morbidity that alcohol-impaired driving already imposes.

One way to achieve that goal is to lower the BAC cap from 0.08 g/dL to 0.05 g/dL or lower for everyone who is a registered medical marijuana patient, or even across the board. That response might be only a small step toward improving highway safety, but it certainly would be a useful one.

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26. See Magdalena Cerdá et al., *Medical Marijuana Laws in 50 States: Investigating the Relationship Between State Legalization of Medical Marijuana and Marijuana Use, Abuse and Dependence*, 120 DRUG & ALCOHOL DEPENDENCE 22, 25 (2012) (“[S]tates that legalized marijuana use for medical purposes have significantly higher rates of marijuana use and of marijuana abuse and dependence.”).