CANNABIS AND OTHER DRUGS AMONG DRIVERS OF HIGHWAY VEHICLES DYING WITHIN 30 DAYS OF A CRASH ON A PUBLIC ROAD: CANADA, 2014

April 15, 2018

R. Solomon, Distinguished University Professor
C. Ellis, J.D. 2018 & C. Zheng, J.D. 2019
Faculty of Law, Western University
London, Ontario, N6A 3K7

Introduction

This document provides information on the presence of cannabis and other drugs among a subset of crash victims, namely fatally-injured drivers of highway vehicles dying within 30 days of a crash on a public roadway. Thus, the Charts in this document do not include fatally-injured pedestrians, passengers, and drivers of snowmobiles, ATVs, farm vehicles, dirt bikes, and bicycles. Nor do the Charts include deaths resulting from crashes occurring on private property, Crown land, military bases, or roads administered by First Nations. As Chart I illustrates, the percentage of fatally-injured drivers testing positive for drugs has been increasing, while the percentage testing positive for alcohol has been decreasing.

Chart I: Alcohol and Drugs Among Fatally-Injured Drivers of Highway Vehicles in Canada, 1990-2014[1]

	% of Fatally-Injured Drivers Testing Positive For[2]	
	Alcohol	**Drugs**
1990	45%	No Data
1992	47%	No Data
1994	44%	No Data
1996	40%	No Data
1998	39%	No Data
2000	35%	34%
2002	33%	41%
2004	34%	37%
2006	36%	35%
2008	38%	39%
2010	38%	37%
2011	34%	41%
2012	33%	40%
2013	32%	45%
2014	29%	42%

[1] Chart I does not include alcohol or drug-related driver fatalities in British Columbia.

[2] For the alcohol data, see Traffic Injury Research Foundation (TIRF), *Alcohol and Drug-Crash Problem in Canada: 2012 Report* (Ottawa, Canadian Council of Motor Transport Administrators (CCMTA), 2015) [*Crash Problem 2012*] at 36, "Table 3-10 Alcohol Use Among Fatally Injured Drivers of Highway Vehicles: Canada, 1990-2012;" and TIRF, *Alcohol and Drug-Crash Problem in Canada: 2014 Report* (Ottawa: CCMTA, 2018) [*Crash Problem 2014*] at 39, "Table 3-10 Alcohol Use Among Fatally Injured Drivers of Highway Vehicles: Canada, 1996-2014."

For the drug data, see *Crash Problem 2014*, *ibid* at 44, "Table 3-13 Drug Use Among Fatally Injured Drivers of Highway Vehicles: Canada, 2000-2014."

The drug categories listed in Chart II are set out in the *International Drug Evaluation Program* that Canada adopted pursuant to the *Criminal Code*'s drug-impaired driving provisions.[3] The totals in Chart II exceed 100% because many drivers were positive for two or more categories of drugs. Moreover, a significant percentage of the drug-positive, fatally-injured drivers were also positive for alcohol.[4]

Chart II: The Categories of Drugs Among Drug-Positive, Fatally-Injured Drivers of Highway Vehicles in Canada, 2014[5]

Drug Categories		% of Drug-Positive, Fatally-Injured Drivers
Cannabis	*e.g.* THC, marijuana, hash and hash oil	45%
Central Nervous System (CNS) Depressants	*e.g.* barbiturates, tranquilizers (Valium & Prozac), and anti-depressants (Zoloft & Paxil)	41%
CNS Stimulants	*e.g.* cocaine, amphetamines, methamphetamines, and crack	25%
Narcotic Analgesics	*e.g.* heroin, Demerol, morphine, methadone, and OxyContin	24%
Dissociative Anesthetics	*e.g.* phencyclidine (PCP) and ketamine	2%
Hallucinogens	*e.g.* LSD, peyote, psilocybin, and MDMA (Ecstasy)	0%
Inhalants	*e.g.* toluene, paint, gasoline, hair spray, and plastic cement	0%

As Chart III illustrates, cannabis was the most commonly found drug among fatally-injured drivers in Canada as a whole. It was also the most commonly found drug in six provinces and they accounted for 90% of the Canadian population in 2014.[6] CNS depressants were the most commonly found drug in three

---

[3] *Criminal Code*, R.S.C. 1985, C-46, s. 254(3.1). See *Evaluation of Impaired Operation (Drugs and Alcohol) Regulations*, SOR/2008-196, s. 1; and International Association of Chiefs of Police, *The International Drug Evaluation & Classification Program: The 7 Drug Categories*, online: <http://www.decp.org/experts/7categories.htm>.

[4] In 2014, 13.0% of fatally-injured drivers were positive for alcohol alone, 26.9% were positive for drugs alone and 15.5% were positive for both alcohol and drugs. *Crash Problem 2014*, *supra* note 1 at 47, "Table 3-15 Alcohol and Drug Use Among Fatally Injured Drivers of Highway Vehicles: Canada, 2014."

[5] *Ibid* at 34, "Table 3-7 Drug Use Among Fatally Injured Drivers of Highway Vehicles: Canada, 2014." While Chart II does not include drug-related driver fatalities in British Columbia, the percentage of fatally-injured drivers in British Columbia who were positive for the various drug categories in 2010 are similar to those in Chart II. *Ibid* at 65, "Table 4-4 Drug Use Among Fatally Injured Drivers of Highway Vehicles: British Columbia, 2010."

[6] Statistics Canada, *CANSIM Table 051-0001: Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted)*, online: <http://www5.statcan.gc.ca/cansim/a47>.

provinces.[7]

Chart III: Most Commonly Found Drug Among Drug-Positive, Fatally-Injured Drivers and the Percentage Positive for Cannabis: Canada, 2014

	Most Common Drug	% Positive for Cannabis
CAN[8]	Cannabis	45%
AB	Cannabis	45%
BC	Cannabis	50% (2010 data)
MB[9]	CNS Depressants (75% of drug-positive drivers)	0%
NB	CNS Depressants (59% of drug-positive drivers)	41%
NL	Cannabis	100%
NS	Cannabis	64%
ON	Cannabis	47%
PE	Narcotic Analgesics (100% of drug-positive drivers)	0%
QC	Cannabis	57%
SK	CNS Depressants (43% of drug-positive drivers)	29%

[7] For the presence of drugs among fatally-injured drivers in each province, see *Crash Problem 2014*, *supra* note 1: **BC** (p. 65); **AB** (p. 80); **SK** (p. 96); **MB** (p. 112); **ON** (p. 128); **QC** (p. 144); **NB** (p. 160); **NS** (p. 176); **PE** (p. 192); and **NL** (p. 208).

[8] *Ibid* at 34, "Table 3-7 Drug Use Among Fatally Injured Drivers of Highway Vehicles: Canada, 2014." The percentage of fatally-injured drivers testing positive for cannabis in Canada did not include British Columbia. As Chart III indicates, the percentage of fatally-injured drivers in British Columbia who were positive for cannabis in 2010 was higher than that in the rest of Canada in 2014.

[9] Despite having a high rate of drug testing, no fatally-injured drivers in Manitoba tested positive for cannabis in 2012, 2013 or 2014. In contrast, 12% of drug-positive, fatally-injured drivers in Manitoba tested positive for cannabis in 2011. See respectively, *Crash Problem 2012*, *supra* note 1 at 98, "Table 7-4 Drug Use Among Fatally Injured Drivers of Highway Vehicles: Manitoba, 2012;" TIRF, *Alcohol and Drug-Crash Problem in Canada: 2013 Report* (Ottawa: CCMTA, 2017) at 101, "Table 7-4 Drug Use Among Fatally Injured Drivers of Highway Vehicles: Manitoba, 2013;" *Crash Problem 2014*, *supra* note 1 at 112, "Table 7-4 Drug Use Among Fatally Injured Drivers of Highway Vehicles: Manitoba, 2014;" and TIRF, *Alcohol and Drug Crash Problem in Canada: 2011 Report* (Ottawa: CCMTA, 2013) at 106, "Table 7-4 Drug Use Among Fatally Injured Drivers of Highway Vehicles: Manitoba, 2011."

It is difficult to interpret the absence of cannabis among fatally-injured Manitoba drivers in 2012, 2013 or 2014. However, while TIRF reported that no fatally-injured drivers in Manitoba tested positive for cannabis in 2014, it stated that this result may change pending completion of a further review. *Crash Problem 2014*, *ibid* at 112.

Discussion

The percentage of fatally-injured drivers testing positive for drugs increased from 2000 to 2014, and the most commonly found drug was cannabis. This trend has likely continued, if not accelerated, with the recent increases in the rates of cannabis use. The number of Canadian past-year cannabis users 15 years of age or older rose by 44%, from 3.4 million in 2012 to 4.9 million by 2015.[10] There have been even sharper increases in the number of medically-authorized users. In the first six months of 2017, the number of authorized users rose from 130,000 to 201,000, or by more than 55%.[11] If the recent trend continues, the number of authorized users would approach 500,000 by the end of 2019.

Further increases in cannabis use and cannabis-impaired driving are very likely, given the pending cannabis legalization legislation, which was initially scheduled to come into force on July 1, 2018.[12] In Colorado, fatalities involving THC-positive drivers increased 44% in 2014, the year after the state legalized recreational cannabis use.[13] Similarly, a Washington State study reported that the number and percentage of THC-positive drivers in fatal crashes approximately doubled in the year after recreational cannabis use was legalized.[14] Granted, the fact that a driver is positive for cannabis does not mean that his or her driving ability was impaired, or that he or she was at fault in the fatal crash. Nevertheless, the results of these studies are alarming.

Cannabis-impaired driving already poses a significant traffic safety risk, particularly for young drivers and their passengers. One study estimated that cannabis-attributable crashes in 2012 resulted in 75 deaths and over 4,400 injuries, while another study put the number of fatalities at 94.[15] The number of cannabis-attributed crash deaths has likely risen significantly since then, given the sharp increase in

---

[10] See respectively, M. Rotermann & K. Langlois, "Prevalence and correlates of marijuana use in Canada, 2012" (2015) 26(4) *Health Reports* at 11; and Statistics Canada, "Study: Experimental Estimates of Cannabis Consumption in Canada, 1960 to 2015" *The Daily* (18 December 2017) 1, online: <http://www.statcan. gc.ca/daily-quotidien/17218/dq171218b-eng.pdf>.

[11] Statistica Inc., Health & Pharmaceuticals, "Quarterly number of medical marijuana clients registered in Canada between April 2015 and July 2017," online: <https://www.statista.com/statistics/603356/canadian-medical-marijuana-clients-registered-by-quarter/>.

[12] Among other things, the Bill would establish a minimum lawful purchase and possession age of 18 and legalize cannabis possession, home cultivation, public use, and retail distribution. Canada, Bill C-45, *Cannabis Act*, 1st Sess., 42nd Parl., 2016 (First reading: 13 April 2017).

[13] J. Reed, *Marijuana Legalization in Colorado: Early Findings* (Denver: Colorado Department of Public Safety, 2016) at 6. In fairness, the author stated that the traffic safety data were limited. See also S. Salomonsen-Sautel *et al.*, "Trends in fatal motor vehicle crashes before and after marijuana commercialization in Colorado" (2014) 140 *Drug and Alcohol Dependence* 137 at 140.

[14] B. Tefft, L. Arnold & J. Grabowski, *Prevalence of Marijuana Involvement in Fatal Crashes: Washington, 2010-2014* (Washington, DC: AAA Foundation for Traffic Safety, 2016) at 1.

[15] A. Wettlaufer *et al*., "Estimating the Harms and Costs of Cannabis-Attributable Collisions in the Canadian Provinces" (2017) 173 Drug and Alcohol Dependence 185; and S. Imtiaz *et al*., "The burden of disease attributable to cannabis use in Canada in 2012" (2016) 111(4) Addiction 653 at 656.

reported rates of past-year cannabis use.

As explained elsewhere, the 2008 drug-impaired driving amendments have not had an appreciable deterrent impact.[16] The charge data confirm the conventional wisdom that Canadians can drive after drug use with relative impunity – a factor that helps explain "the normalization" of driving after cannabis use among Canadian youth.[17] For example, although the rates of driving after drug use now far exceed the rates of driving after drinking, only 3.91% of total impaired driving charges in 2016 involved drugs.[18]

Given these concerns and the pending legalization of cannabis, the federal government included amendments to the federal drug-impaired driving legislation in Bill C-46.[19] The Bill is scheduled to come into force at the same time as the *Cannabis Act*. Among other things, the Bill will strengthen federal drug-impaired driving enforcement[20] and create new *Criminal Code* offences for driving with a prohibited amount of cannabis and other specified drugs in one's blood.[21] Finally, the Bill addresses

---

16 R. Solomon & E. Chamberlain, "Federal Impaired Driving Policy: Moving Beyond Half Measures" (2014) 40(1) Canadian Public Policy 15; and R. Solomon, E. Chamberlain & N. Al-Azem, *Submission to The Task Force on Marijuana Legalization and Regulation* (Oakville, ON: Mothers Against Drunk Driving (MADD) Canada, 2016) at 16-18.

17 See for example, D. Patton, T-L. Mackay & B. Broszeit, *Alcohol and other Drug Use by Manitoba Students* (Winnipeg: Addictions Foundation of Manitoba, 2005) at 44-46; M. Asbridge, C. Poulin & A. Donato, "Motor vehicle collision risk and driving under the influence of cannabis: Evidence from adolescents in Atlantic Canada" (2005) 37 Accident Analysis and Prevention 1025 at 1029; and B. Fischer *et al.*, "Toking and driving: Characteristics of Canadian university students who drive after cannabis use – an exploratory pilot study" (2006) 13(2) Drugs: Education, Prevention and Policy 179 at 182.

18 Statistics Canada, *CANSIM Table 252-0051: Incident-based crime statistics, by detailed violations annual (number unless otherwise noted)* (Ottawa: Statistics Canada, 2016) [*CANSIM Table 252-0051*].

Similarly, although an estimated 10.4 million trips were made in 2012 by drivers shortly after using cannabis, there were only 1,140 charges that year for all categories of drug-impaired driving. Assuming that half of these charges involved cannabis, a person could drive after using cannabis once a day for about 50 years before being charged with, let alone convicted of, a drug-impaired driving offence. See respectively, D. Beirness & A. Porath-Waller, *Clearing the Smoke on Cannabis: Cannabis Use and Driving – An Update* (Ottawa: Canadian Centre on Substance Abuse, 2013) at 2; and *CANSIM Table 252-0051*, *ibid*.

19 Canada, Bill C-46, *An Act to amend the Criminal Code (offences relating to conveyances) and to make consequential amendments to other Acts*, 1st Sess., 42nd Parl., 2016 (First reading: 13 April 2017), ss. 1-11.

20 First, the police will be authorized to demand an oral fluid sample at roadside from any driver whom they reasonably suspect has drugs in his or her body. *Ibid*, s. 3(3) & (4) Second, the police will be able to demand a blood sample from any driver whom they have reasonable grounds to believe has committed a drug-impaired driving offence within the previous three hours. *Ibid*, s. 3(5).

21 *Ibid*, s. 2. The government has proposed creating three new cannabis-related *per se* impaired driving offences. First, driving with 2 but less than 5 nanograms (ngs) of THC per ml of blood would constitute a summary conviction offence punishable by a fine of up to $1,000. Second, driving with 5 or more ngs of THC per ml of blood would constitute a hybrid offence, punishable on summary conviction or by indictment. Third, driving with a blood-alcohol concentration (BAC) of .05% or more, in combination with a THC level of 2.5 or more ngs, would also constitute a hybrid offence. The latter two offences would be subject to the same penalties as the current offences of driving while one's ability is impaired by alcohol or drugs, and driving with a BAC above .08%. *Criminal Code*, *supra* note 3, s. 253(1).

several procedural and evidentiary issues that undermined the 2008 drug-impaired driving provisions.[22]

Bill C-46 will strengthen the federal drug-impaired driving legislation and will modestly increase drug-impaired driving detection, charge and conviction rates. However, it will not likely have a sufficient deterrent impact to stem the increase in driving after cannabis use that will result from legalization. The limited impact of Bill C-46 is due to the unique nature of cannabis and the inherent limitations in the current drug-testing technology. There is currently no inexpensive, non-intrusive, quick, highly accurate means of screening large numbers of drivers for drug impairment.

[22] Bill C-46, *supra* note 19, s. 3(8).