Total Crash Deaths Involving Alcohol and/or Drugs in Canada, by Jurisdiction: 2012

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Introduction

The goal of this document is to provide current information on the percentage and total number of Canadian crash deaths that involved alcohol alone, drugs alone, and both alcohol and drugs. This has proven to be a complicated task, requiring various assumptions to be made in order to address gaps in the available data. Moreover, the most current data are from 2012, and they do not include any crash deaths in British Columbia.

The number and percentage of crash deaths involving alcohol alone, drugs alone, and both alcohol and drugs were only available for drivers of highway vehicles who died within 30 days of a crash. There were no comparable statistics on: drivers killed in crashes involving snowmobiles, ATVs, farm tractors, and bicycles; drivers who died more than 30 days after the crash; and fatally-injured pedestrians or passengers. In order to estimate the presence of alcohol and/or drugs among all categories of crash victims, we applied the percentage breakdown from the aforementioned subcategory of drivers of highway vehicles dying within 30 days to the total number of reported crash deaths.

To make up for the missing 2012 British Columbia data, we used the province's latest available data which were from 2010. We then applied the national breakdown regarding the presence of alcohol and/or drugs among the aforementioned subcategory of dead drivers to the total number of crash deaths in British Columbia in 2010. The notes accompanying Table I provide a more detailed explanation of our calculations and the sources upon which we relied.

While Table I is based on the best available and most current Canadian data, it must be acknowledged that the data are neither particularly good nor current. We relied on two published reports by The Traffic Safety Research Foundation (TIRF).[1] In turn, these two reports were based on the *National Fatality Database,* an unpublished database developed by TIRF in conjunction with the provincial and territorial coroners, medical examiners and police authorities.

The *National Fatality Database* is subject to several major qualifications. For example, the definition of an "alcohol-related crash death" in Québec is narrower than that used in other jurisdictions.[2] The rates of testing for alcohol varied among the types of victims (drivers, passengers and pedestrians) and from jurisdiction to jurisdiction.[3] Detailed drug data were only available for

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[1] TIRF, *Alcohol and Drug-Crash Problem in Canada: 2012* (Ottawa: Canadian Council of Motor Transport Administrators (CCMTA), 2015) [*Crash Problem, 2012*]; and TIRF, *Alcohol and Drug Use Among Fatally Injured Drivers of Highway Vehicles: Canada, 2012* (Ottawa: TIRF, 2015) [*Fatally Injured Drivers, 2012*].

[2] In the absence of blood-alcohol evidence, a crash will only be considered to be alcohol related in Québec if the police conclude that alcohol, rather than a long list of other factors was "a probable cause" of the crash. *Crash Problem, 2012, ibid.* at 9.

[3] For example, while the national rate of alcohol testing among fatally-injured drivers in 2012 was 83.2%, the provincial rates ranged from 96% in Alberta to 65% in Québec. *Ibid.* at 10, and at 6, "Figure 2-2 Percent of Fatally Injured Drivers Tested for Alcohol: Canada, 2012." Note that the national testing rate for alcohol was stated to be 83.2% on page 10, but 83.1% on page 6.

fatally-injured drivers and, as in the case of alcohol, the testing rates for drugs varied among the jurisdictions.[4] As explained, the *National Fatality Database* was current to 2012, with the exception of the information from British Columbia which was only current to 2010.

Perhaps of greatest concern is that the *National Fatality Database* may significantly understate the total number of alcohol-related crash deaths. For example, if an impaired driver crashes into a vehicle, killing its sober driver and two occupants, it is only the dead driver's blood-alcohol concentration (BAC) that would be reported in the *National Fatality Database*. Unless the police are able to obtain BAC evidence from the surviving impaired driver or otherwise recorded that the surviving driver had been drinking,[5] all three deaths would be recorded as not being alcohol related. Similar problems arise when impaired drivers survive crashes in which they kill sober passengers, pedestrians or bicyclists.

Moreover, even if the police strongly suspect that a surviving driver is impaired by alcohol, it is extremely difficult to obtain BAC evidence, particularly if the driver is taken to hospital. Thus, relatively few hospitalized impaired drivers are charged with, or convicted of, a federal impaired driving offence. For example, a 2004 British Columbia study involving six hospitals found that only 11% of hospitalized drivers with BACs of more than .08% were convicted of any *Criminal Code* impaired driving offence, despite the fact that the average BAC of the alcohol-positive drivers was .156%.[6] Similarly, only 16% of alcohol-impaired drivers admitted to an Alberta tertiary care trauma centre following a crash between 1995 and 2003 were convicted of any federal impaired driving offence, even though their average BAC was .19% or almost 2½ times the *Criminal Code* limit.[7]

The authors of the *Crash Problem, 2012* stated that in order to overcome the underreporting problem, the *National Fatality Database* is supplemented "with any other evidence of alcohol in the fatal crash identified from either the coroner's report or from the police collision report."[8] However, the authors do not specify the "other evidence" on which they rely. Consequently, it is difficult to see how this other evidence would significantly ameliorate the underreporting problem. American

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[4] The national rate of drug testing among fatally-injured drivers in 2012 was 75.3%, and the provincial rates ranged from 93% in Manitoba to 53% in Newfoundland and Labrador. *Ibid.* at 11, and at 12, "Figure 2-4 Percent of Fatally Injured Drivers Tested for Drugs: Canada, 2012."

[5] Canadian research indicates that the police frequently fail to detect and report the presence of alcohol. See for example, E. Vingilis, E. Adlaf & L. Chung, "Comparison of Age and Sex Characteristics of Police-Suspected Impaired Drivers and Roadside-Surveyed Impaired Drivers" (1982) 14 Accident Analysis and Prevention 425; and E. Vingilis & V. Vingilis, "The Importance of Roadside Screening for Impaired Drivers in Canada" (1987) 29 Canadian Journal of Criminology 17 at 22-25. Although these sources are dated, police underreporting remains problematic, particularly in Québec.

[6] R. Purssell *et al.*, "Proportion of injured alcohol-impaired drivers subsequently convicted of an impaired driving criminal code offence in British Columbia" (2004) 6(2) Canadian Journal of Emergency Medicine 80 at 80.

[7] M. Goecke *et al.*, "Characteristics and conviction rates of injured alcohol-impaired drivers admitted to a tertiary care Canadian Trauma Centre" (2007) 30(1) Clinical and Investigative Medicine 26 at 26.

[8] *Crash Problem, 2012*, *supra* note 1 at 9.

researchers have undertaken studies to develop "multipliers" to account for the police underreporting of alcohol involvement in crashes.[9]

Given the preceding concerns and others that will be explained in the notes, Table I should be seen as providing a general estimate of the presence of alcohol and/or drugs among total crash victims. It is important to emphasize that Table I only documents the presence of alcohol and/or drugs and not whether the deceased was impaired at the time of his or her death.

Nevertheless, there is detailed information on the BACs of alcohol-positive deceased drivers and pedestrians, which indicates that most were likely very impaired at the time of their death.[10] Unfortunately, there are no comparable national data on the drug concentrations among the drug-positive deceased. Thus, there is no Canada-wide information on the percentage of drug-positive crash victims who were impaired or otherwise adversely affected by drugs at the time of their death.[11]

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[9] T. Miller *et al.*, "Underreporting of Driver Alcohol Involvement in United States Police and Hospital Records: Capture-Recapture Estimates" (2012) 56 Annals of Advances in Automotive Medicine 87; and E. Zaloshnja *et al.*, "Costs of Alcohol-Involved Crashes, United States, 2010" (2013) 57 Annals of Advances in Automotive Medicine 3.

[10] For example in 2012, 64% of the alcohol-positive dead drivers of highway vehicles had BACs of .161% or more, and 22% had BACs between .081% and .160%. R. Solomon & M. Clarizio, *The BACs of Alcohol-Positive Dead Drivers, Canada: 1988-2012: What the Numbers Tell Us?* (Oakville: MADD Canada, 2016) at 2. Similarly, 71% of alcohol-positive dead pedestrians had BACs of .161% or more, and 21% had BACs between .081% and .160%. *Crash Problem, 2012*, *supra* note 1 at 25, "Table 3-4 Alcohol Use Among Fatally Injured Pedestrians: Canada, 2012."

[11] However, there are data on the drug concentration among fatally-injured drivers and drivers subject to roadside oral fluid testing in some provinces. See respectively, M. Brault *et al.*, "The Contribution of Alcohol, and Other Drugs Among Fatally Injured Drivers in Quebec: Final Results" in P. Williams & A. Clayton, eds., *Proceedings of the 17th International Conference on Alcohol, Drugs and Traffic Safety, Glasgow, 8-13 August 2004*, CD-ROM (Glasgow: International Council on Alcohol, Drug and Traffic Safety, 2004); and D. Beirness & E. Beasley, *Alcohol and Drug Use Among Drivers: British Columbia Roadside Survey 2010* (Ottawa: Canadian Centre on Substance Abuse, 2011).

Table I: The Presence of Alcohol and/or Drugs Among All Categories of Crash Victims Dying Within 12 Months of the Crash: Canada, 2012[12]

	Total No. of Crash Deaths[13]	% and No. of Crash Victims Positive for Alcohol Alone[14,15]		% and No. of Crash Victims Positive for Drugs Alone[14,15]		% and No. of Crash Victims Positive for Both Alcohol & Drugs[14,15]	
CAN[16]	2,546	18.7 %	476	24.1%	614	16.0%	407
AB	366	17.5%	64	24.0%	88	17.1%	63
BC[17]	387	18.7%[18]	72	24.1%[18]	93	16.0%[18]	62
MB	115	32.0%	37	32.0%	37	16.0%	18
NB	83	27.0%	22	20.6%	17	6.1%	5
NL	41	13.0%	5	16.7%	7	33.3%	14
NS	92	14.6%	13	24.1%	22	13.0%	12
ON	728	14.6%	106	27.9%	203	19.4%	141
PE	13	80.0%	10	20.0%	3	0.0%	0
QC	511	21.6%	110	19.8%	101	11.9%	61
SK	203	18.9%	38	21.4%	43	16.9%	34
NT	2	0.0%	0	0.0%	0	0.0%	0
NU	3	0.0%	0	0.0%	0	0.0%	0
YK	2	0.0%	0	0.0%	0	0.0%	0

[12] Table I is largely based on *Crash Problem, 2012*, *supra* note 1 at 5, "Figure 2-1 Number of Fatalities Reported by Official Sources and TIRF Fatality Database: 2012;" and *Fatally Injured Drivers, 2012*, *supra* note 1.

[13] With the exceptions of Canada and British Columbia, total crash deaths in this column are based on *Crash Problem, 2012*, *ibid*. Note as well that this column includes all categories of crash victims dying within 12 months of the crash.

[14] As indicated, total crash deaths in 2012 were not broken down in terms of those involving alcohol alone, drugs alone, and both alcohol and drugs. In order to address this gap, we assumed that the breakdown regarding the presence of alcohol and/or drugs among total crash victims dying within 12 months of the crash was the same as that among drivers of highway vehicles dying within 30 days. This assumption underestimates the presence of alcohol and/or drugs among some categories of crash victims and overestimates the presence of alcohol and/or drugs among others. For example, 72.7% of fatally-injured snowmobile operators, 60% of fatally-injured ATV drivers, 39.9% of fatally-injured pedestrians, but only 26.5% of fatally-injured bicyclists in 2012 were positive

for alcohol, in contrast to 34.7% of drivers of highway vehicles dying within 30 days of the crash. *Crash Problem, 2012, ibid*. at 23, "Figure 3-6d Alcohol Use Among Drivers of Different Vehicle Types: Canada, 2012" and "Figure 3-6e Alcohol Use Among Drivers of Different Vehicle Types: Canada, 2012," and at 25, "Table 3-4 Alcohol Use Among Fatally Injured Pedestrians: Canada, 2012."

[15] The number of deaths in these three columns is higher than that listed in *Fatally Injured Drivers, 2012, supra* note 1. That document only included the number of deaths in which it was known that alcohol and/or drugs were present. In other words, the authors did not extrapolate from the percentage of known alcohol and/or drug-positive deaths to estimate the total number of alcohol and/or drug-positive crash deaths. In order to provide more comprehensive estimates, we have applied the percentage of known cases to the unknown cases.

[16] The number of crash deaths for Canada in this row is considerably higher than that listed in *Crash Problem 2012, supra* note 1 at 14, "Table 3-1 Deaths in Alcohol-Related Crashes: Canada: 2012." First, the authors of Table 3-1 did not extrapolate from the number of crash deaths in which it was known that alcohol and/or drugs were present to estimate the total number of alcohol and/or drug-positive crash deaths. In order to provide more comprehensive estimates, we have applied the percentage of known cases to the unknown cases.

Second, Table 3-1 did not include crash deaths in British Columbia, because the 2012 data were not available for the province. In order to make up for this missing 2012 data in Table I, we added the comparable British Columbia statistics from 2010 to the Canadian total. *Alcohol Crash Problem, 2012, ibid.* at 46, "Table 4-2 Alcohol Use Among Fatally Injured Drivers of Highway Vehicles: British Columbia, 2010."

[17] As explained above, the total crash deaths for British Columbia are based on 2010 data. However, it should be noted that the province enacted comprehensive alcohol-related roadside administrative licence suspension and vehicle impoundment legislation in 2010 which has significantly reduced alcohol-related crashes, deaths and injuries. See S. Macdonald *et al.*, "The impact on alcohol-related collisions of the partial decriminalization of impaired driving in British Columbia, Canada" (2013) 59 Accident Analysis and Prevention 200; and D. Beirness & E. Beasley, "An Evaluation of Immediate Roadside Prohibitions for Drinking Drivers in British Columbia: Findings from Roadside Surveys" (2014) 15 Traffic Injury Prevention 228.

[18] The 2010 British Columbia data are not broken down in terms of the number or percentage of dead drivers who were positive for alcohol alone, drugs alone, and both alcohol and drugs. In order to address this gap, we have assumed that the 2010 breakdown regarding the presence of alcohol and/or drugs among dead drivers in British Columbia was the same as the 2012 national percentages.

While the percentage of alcohol-positive dead drivers in British Columbia in 2012 was likely lower than the national average, the percentage of drug-positive dead drivers in the province likely exceeded the national average. For example, in a national post-mortem study, 45.1% of the British Columbia drivers who died in 2008 were positive for drugs, compared to 36.7% for Canada as a whole. E. Beasley & D. Beirness, *Drug Use by Fatally Injured Drivers in Canada (2000-2008)* (Ottawa: Canadian Center of Substance Abuse (CCMTA), 2011) at 6. Similarly, a 2013 survey indicated that 11.9% of respondents in British Columbia reported using non-prescription drugs and driving in the past 30 days compared to the national average of 8.6% of respondents. B. Jonah, *CCMTA Public Opinion Survey of Drugs and Driving in Canada: Summary Report* (Ottawa: CCMTA, 2013) at 17. British Columbia also had the highest police-reported incidence of drug offences among the provinces in 2013, as well as the highest average number of police-reported drug offences from 2003 to 2012. A. Cotter, J. Greenland & M. Karam, *Drug-related offences in Canada, 2013* (Ottawa: Juristat Statistics Canada, 2015) at 10.