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# Driving after Drinking in Canada



*Analysis drawn from the 2004 Canadian Addiction Survey*

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The Canadian Addiction Survey (CAS) was a collaborative initiative sponsored by Health Canada, the Canadian Centre on Substance Abuse (CCSA) and the Canadian Executive Council on Addictions (CECA)—which includes the Alberta Alcohol and Drug Abuse Commission (AADAC), the Addictions Foundation of Manitoba (AFM), the Centre for Addiction and Mental Health (CAMH), the Prince Edward Island Provincial Health Authority, and the Kaiser Foundation—the Centre for Addictions Research of BC (CAR-BC), and the provinces of Nova Scotia, New Brunswick and British Columbia. Analysis presented in this and similar reports is intended to supplement the original CAS detailed report.

## Introduction

Among the numerous problems associated with the consumption of alcohol, mortality and morbidity as a result of operating a motor vehicle while impaired by alcohol represent very acute and tragic consequences of excessive drinking. Research has clearly established that alcohol impairs the ability to operate a vehicle safely and increases the risk of crash involvement (Borkenstein et al., 1964; Compton et al., 2002; Zador, 1991). During the 1980s, the general public became acutely aware of the extent of the drinking-driving problem and a number of programs and policies were implemented to reduce the alcohol-crash problem. Public perception, attitudes and behaviour changed. Coincidentally, Canada—as well as many other industrialized countries—witnessed substantial decreases in the magnitude of the alcohol-crash problem.

For example, since the early 1980s, the percentage of driver fatalities involving alcohol in Canada has declined dramatically. Figure 1 shows the percentage of driver fatalities that were tested for alcohol in Canada<sup>1</sup> each year from 1980 to 2004<sup>2</sup> (Beirness, Simpson, Mayhew,

& Wilson, 1994; Mayhew, Beirness, & Simpson, 2000; Mayhew, Brown, & Simpson, 2006). In 1981, 62% of drivers killed in road crashes in Canada tested positive for alcohol; by 1999, the percentage of driver fatalities involving alcohol had decreased to 33%.

This reduction in drinking-driver fatalities has been attributed to a wide variety of countermeasures initiated and sustained throughout the decade, including public awareness campaigns, new legislation, enhanced enforcement, profound changes in societal attitudes, and economic and demographic influences. Despite the unprecedented reductions that occurred, the drinking-driving problem remains unacceptably high. In 2004, 35% of fatally injured drivers tested positive for the presence of alcohol and an estimated 1,052 people died in collisions involving a drinking driver (Mayhew et al., 2006). Clearly, driving under the influence of alcohol remains a significant health and safety issue in Canada.

Another indicator of change in the extent of drinking and driving in Canada is the decrease in the number of

1 Prior to 1987, alcohol data were only available from seven provinces (BC, AB, SK, MB, ON, NB, PEI).

2 Includes all drivers who tested positive for alcohol. About 80% of all fatally injured drivers are tested. Not all drivers who were positive for alcohol were necessarily impaired. However, about 80% of all alcohol-positive drivers had a BAC in excess of 80 mg/dL.



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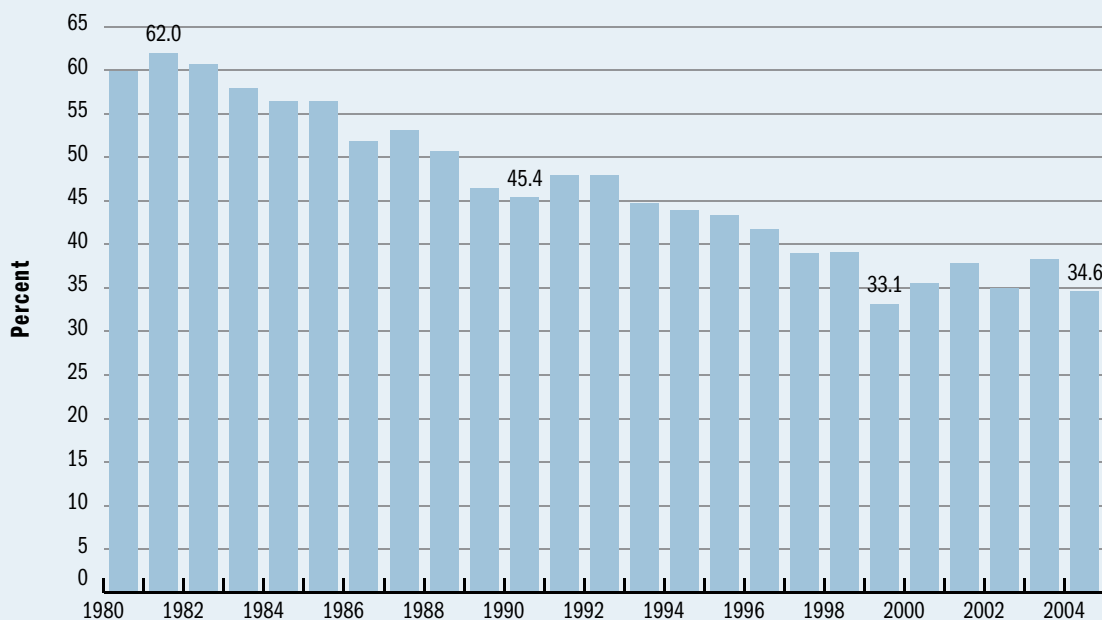
drivers charged with an impaired driving offence under the Criminal Code<sup>3</sup> (e.g., Canadian Centre for Justice Statistics, 2006). Figure 2 shows the number of persons charged with an impaired driving offence in Canada from 1980 to 2005. In 1981, police charged 162,048 drivers with impaired driving—a rate of 859 drivers per 100,000 population. In 2005, police in Canada charged 75,613 drivers (234 drivers per 100,000 population)—a reduction of 53%. It should be recognized, however, that because charge statistics can vary as a function of numerous factors (e.g., reporting practices, level of enforcement), they are not necessarily a valid indicator of the extent of drinking and driving. Nevertheless, the fact that the reduction in charges parallels the decrease in drinking-driver fatalities suggests a general decrease in the prevalence of the behaviour.

Self-report surveys provide another approach to assessing changes in the magnitude of the drinking-driving problem. Several relevant national surveys over the past two decades provide an indication of changes in the prevalence of the behaviour. For example, in a national household survey conducted by Transport Canada in 1983, 51.8% of current drinkers reported

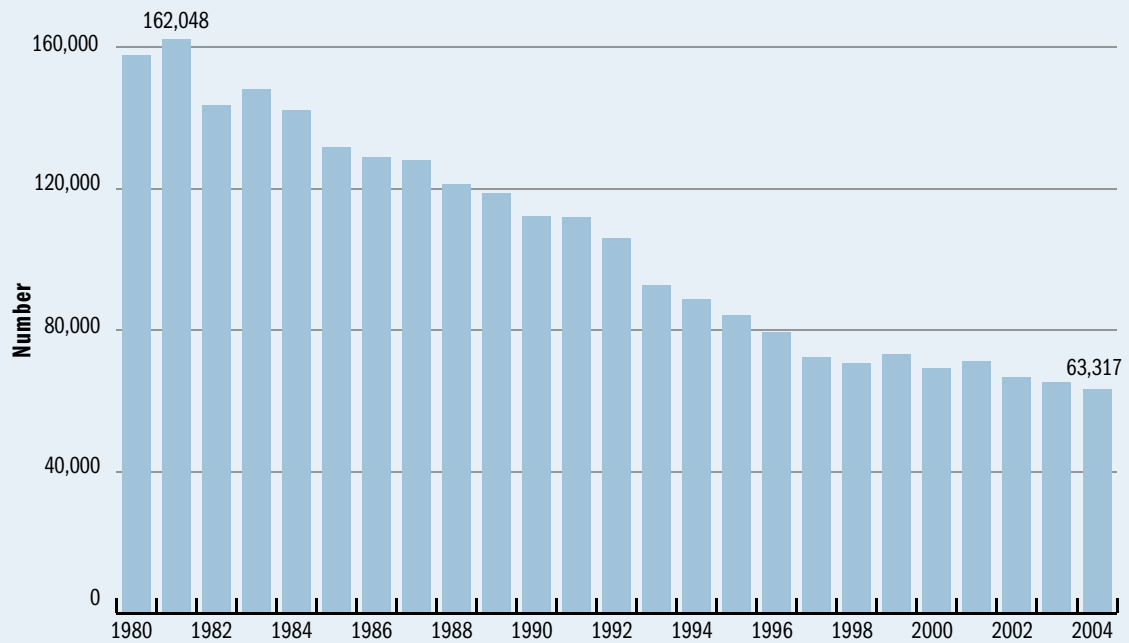
operating a vehicle within two hours of consuming alcohol within the past 30 days (Wilson, 1984). Using a slightly different question, the 1988 National Survey on Drinking and Driving found 24.6% of current drinkers reported driving within an hour of having two or more drinks within the past 12 months (Simpson, Mayhew, & Beirness, 1992); a year later, the National Alcohol and Other Drugs Survey reported that 18.8% had done so (Eliany, Giesbrecht, & Nelson, 1990). In 1994, Canada's Alcohol and Other Drugs Survey reported that 20.5% of current drinkers had driven within an hour of having two or more drinks within the past 12 months (McNeil & Webster, 1997).

The downward trend in indicators of drinking-driving that was so prominent during the 1980s and first half of the 1990s has slowed markedly since. Further reductions in the magnitude of the alcohol-crash problem will require innovative and novel efforts, including measures targeted specifically at those who persist in driving after consuming too much alcohol despite prevailing social disapproval of such behaviour. This requires continued monitoring of the problem to provide an indication of where change has been most prominent and where

**Figure 1: Percentage of Fatally Injured Drivers in Canada who Tested Positive for Alcohol 1980-2004**



<sup>3</sup> In Canada, Criminal Code impaired driving offences include driving with a blood alcohol concentration in excess of 80 mg alcohol in 100 ml blood, operating a vehicle while impaired by alcohol (or drug), refusal to provide a breath sample, and impaired operation causing bodily harm or death.

**Figure 2: Number of Drivers Charged with an Impaired Driving Offence in Canada: 1980–2004**

problems persist, and to gain greater understanding of the characteristics of those who continue to engage in the behaviour. This paper uses data from the Canadian Addiction Survey (CAS) to determine the current extent of driving after drinking in Canada and to describe the characteristics of those who persist in this behaviour.

## Approach

The Canadian Addiction Survey (CAS) is a telephone survey conducted in late 2003 and early 2004 on behalf of the Canadian Centre on Substance Abuse, Health Canada, and the Canadian Executive Council on Addictions (Adlaf et al., 2005). The CAS is based on a two-stage (telephone household, respondent) random sample of 13,909 residents of Canada 15 years of age and older. Variance estimates and confidence intervals have been adjusted for design effects. Weights have been applied based on 252 population classes, stratified by 21 regional areas by six age groups and by sex to yield a sample that is representative of the Canadian population aged 15 and older. Detailed information on the sample and methods is published elsewhere (Adlaf & Rehm, 2005). The response rate was 47%.

Questions on driving after drinking were included in one of three panels of the sample (N = 4,639). Respondents

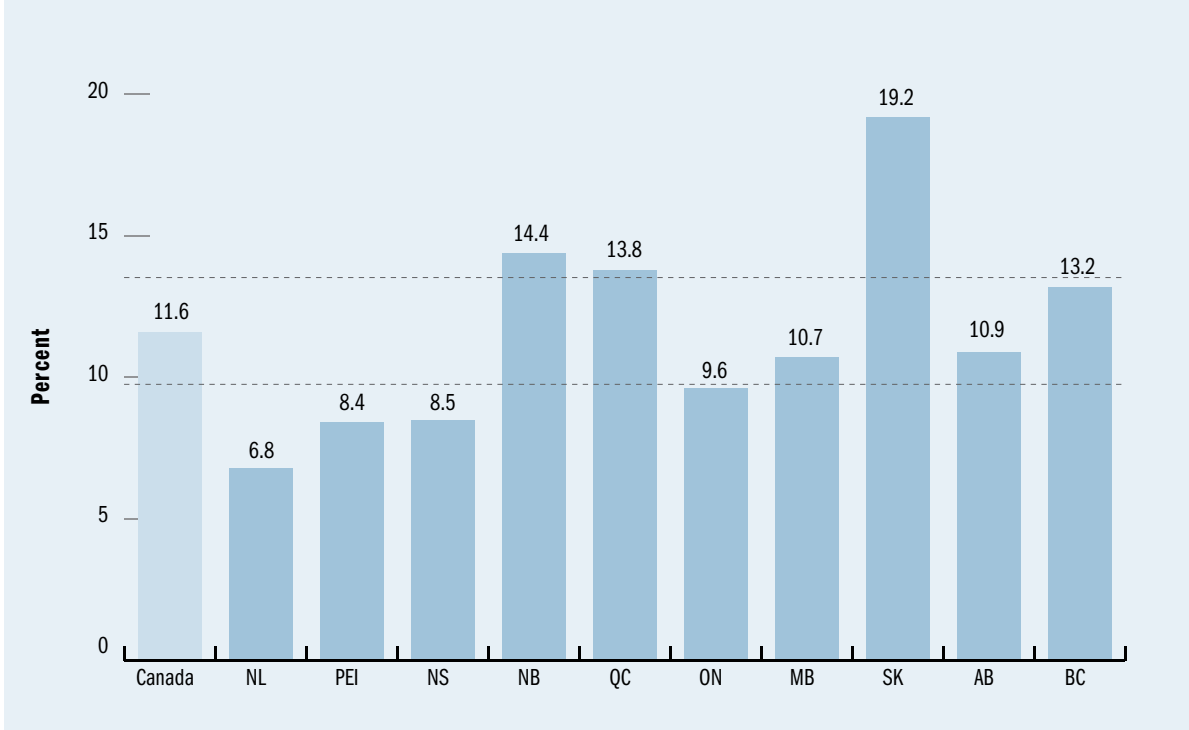
who reported consuming alcohol in the past year, possessed a driver's licence, and reported driving a motor vehicle in the past year were asked how frequently they had operated a vehicle within one hour of consuming two or more drinks containing alcohol. Responses to this question were used to distinguish between those who did, and did not, drive after drinking.

## Findings

Respondents indicating that they had driven within an hour of consuming two or more drinks at least once in the past 12 months were designated "Drinking Drivers" (unweighted  $n = 418$ ), representing 11.6% (95% CI: 9.9–13.6%) of the population of licensed drivers or 14.5% (12.3–16.9%) of the population of non-abstaining licensed drivers.

### *Provincial comparisons*

Self-reported driving after drinking varied somewhat across Canada. Figure 3 shows the proportion of self-reported Drinking Drivers among all licensed drivers in Canada as well as in each province. The two dashed lines in this figure represent the 95% confidence limits of the proportion for all 10 provinces combined. Four provinces are below the lower limit for Canada (NL, PEI,

**Figure 3: Percentage of CAS Respondents who Report Driving after Drinking According to Province**

NS, ON) and three are above the upper limit (NB, QC, SK). Saskatchewan had the highest percentage of self-reported Drinking Drivers (19.2%)—almost three times the percentage in Newfoundland and Labrador (6.8%) who reported doing so.

Table 1 presents the percentage of self-reported Drinking Drivers from the CAS as well as data on impaired driving charges and alcohol-involved driver fatalities for each province. To facilitate comparisons among provinces with different populations, the number of impaired driving charges and drinking-driver fatalities have been divided by the number of licensed drivers in the province to produce a rate per 100,000 drivers. Examination of these data reveals that provinces with a higher self-reported incidence of driving after drinking also have higher rates of impaired driving charges and drinking-driver fatalities. Provinces with a lower incidence of drinking and driving have lower charge and fatality rates. Overall, the simple correlations between the percentage of Drinking Drivers and the impaired driving charge rate and drinking-driver fatality rates are 0.75 and 0.58, respectively. These correlations quantify the degree of common variability among the three indicators, but at the same time, indicate that other factors remain influential in determining changes in the various indicators.

#### *Demographic characteristics.*

Table 2 compares the demographic characteristics of Drinking Drivers to those of non-abstaining drivers who do not drive after drinking—i.e., Non-drinking Drivers. Drinking Drivers are more likely than Non-drinking Drivers to be male and less likely to be married. Overall, Drinking Drivers are generally younger than Non-drinking Drivers, but the age difference is only evident among females. Drinking Drivers are also more likely to have a full-time job and to have a significantly higher average annual income. Although driving on a daily or almost daily basis was common in both groups, a significantly greater proportion of Drinking Drivers reported doing so.

Figure 4 shows the percentage of drivers who reported operating a vehicle after drinking according to age group. The solid line represents both males and females combined; the dashed line represents males only. Younger drivers (aged 16 to 19 and 20 to 24) were most likely to report driving after drinking. The behaviour is less common among those aged 25 and over. Overall, men were 3.5 times more likely than women to report driving after drinking (22.7% vs. 6.5%, respectively). More than one in four males aged 16 to 24 reported driving after drinking.

**Table 1: Provincial Comparison of Indicators of the Drinking-Driving Problem**

	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	CANADA
<b>% Drinking Drivers (CAS)</b>	6.8	8.4	8.5	14.4	13.8	9.6	10.7	19.2	10.9	13.2	11.6
<b>Impaired Driving Charge Rate<sup>1</sup></b>	235.5	370.4	295.3	368.3	367.2	233.9	401.0	724.7	435.4	254.2	315.1
<b>Drinking Driver Fatality Rate<sup>2</sup></b>	1.77	3.78	3.07	4.04	2.32	1.43	3.08	4.33	3.38	3.68	2.41

1 Number of drivers charged with an impaired driving offence per 100,000 licensed drivers (2002). (Source: Canadian Centre for Justice Statistics)

2 Number of fatally injured drivers who tested positive for alcohol per 100,000 licensed drivers (2002). (Source: Mayhew et al. 2004)

**Table 2: Demographic Characteristics of Drinking and Non-drinking Drivers**

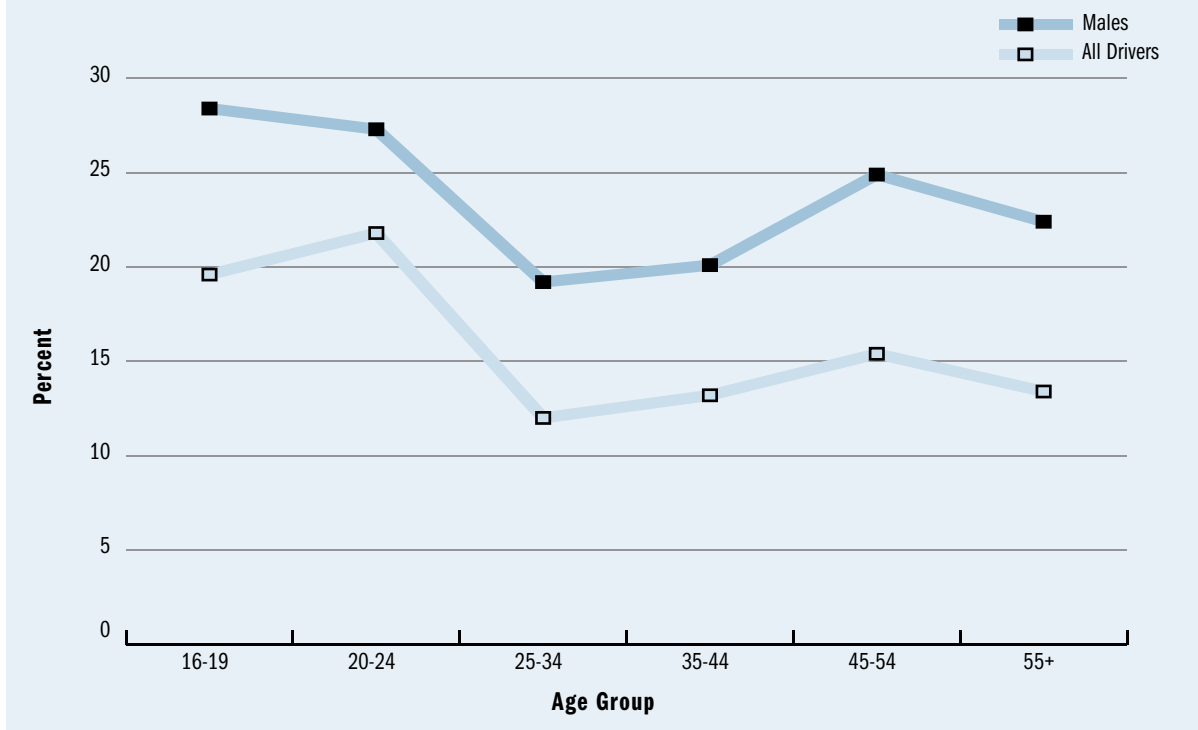
	<b>Drinking Drivers (95% CI)</b>	<b>Non-drinking Drivers (95% CI)</b>	<b>Test<sup>1</sup></b>	<b>Significance</b>
<b>% Male</b>	78.1 (70.8 - 84.0)	45.8 (42.3 - 49.4)	<i>OR</i> =4.22	p<.001
<b>Mean Age<sup>2</sup></b>	39.8 (36.9 - 42.7)	43.4 (42.2 - 44.6)	<i>F</i> =4.94	p<.05
<b>% Married/partner<sup>3</sup></b>	49.4 (40.9 - 58.0)	62.5 (59.0 - 65.9)	<i>OR</i> =0.55	p<.01
<b>% Employed FT<sup>4</sup></b>	63.3 (54.4 - 71.4)	48.9 (45.4 - 52.5)	<i>OR</i> =1.57	p<.05
<b>Mean Personal Income (\$1000)</b>	38.3 (34.2 - 43.3)	33.3 (31.1 - 35.3)	<i>F</i> =4.54	p<.05
<b>% Drive Daily</b>	92.6 (85.7 - 96.3)	81.7 (78.7 - 84.3)	<i>OR</i> =2.66	p<.01

1 All tests (except the first) control for sex.

2 There was also a significant interaction of sex and drinking driving status (*F*=4.54, p<.05) indicating the age difference between Drinking Drivers and Non-drinking Drivers is found only among females.

3 Odds Ratio for Married/Partnered is relative to Previously Married/Never Married

4 Odds Ratio for Employed Full Time is relative to all other employment categories, including part time, unemployed, retired, student.

**Figure 4: Percentage of Drivers in Each Age Group Who Reported Driving after Drinking**

### *Alcohol and drug use*

Drinking and Non-drinking Drivers differed considerably in terms of the extent of their alcohol consumption. Table 3 compares five different measures of drinking as well as reported cannabis and other illegal drug use between Drinking Drivers and Non-drinking Drivers. Drinking Drivers reported drinking more frequently and consumed greater quantities of alcohol. They also reported having consumed five or more drinks on more occasions in the past year than Non-drinking Drivers.

Hazardous drinking (past 12 months) is based on the Alcohol Use Disorders Identification Test (AUDIT), an instrument developed by the World Health Organization to screen for drinking problems (Babor, Higgins-Biddle, Saunders & Monteiro, 2001; Saunders et al., 1993). Scores of 8 or higher are conventionally used to identify people with hazardous and harmful drinking patterns, defined as a pattern of drinking that is causing damage to health or increases the likelihood of future mental and physical health problems. Using data from the CAS, Kellner (2005) estimated that 17% of non-abstaining Canadians 15 years and older met the criterion for hazardous drinking.

Drinking Drivers also have significantly higher AUDIT scores than Non-drinking Drivers. In fact, 40% of Drinking Drivers score 8 or higher on the AUDIT compared with 10% of Non-drinking Drivers.

Drinking Drivers were also about three times more likely than Non-drinking Drivers to report using cannabis and/or other illegal substances in the past year. Drug use can be an indicator of high-risk patterns of behaviours.

Using criteria established in other surveys (Eliany et al., 1990; McNeil & Webster, 1997), the drinking patterns of Drinking and Non-drinking Drivers were grouped into the following drinking categories: Light-Infrequent Drinkers, Light-Frequent Drinkers, Heavy-Infrequent Drinkers, or Heavy-Frequent Drinkers. Heavy drinkers are those who drink five or more alcoholic beverages on a single occasion, and Frequent drinkers are those who consume alcoholic beverages more than once a week. The results are presented in Table 4.

It is evident in this table that Drinking Drivers are considerably more likely than Non-drinking Drivers to be classified as Heavy-Frequent drinkers (24.9% vs. 6.2%, respectively). Conversely, Non-drinking Drivers

**Table 3: Alcohol and Drug Use of Drinking and Non-drinking Drivers**

	<b>Drinking Drivers (95% CI)</b>	<b>Non-drinking Drivers (95% CI)</b>	<b>Test<sup>1</sup></b>	<b>Significance</b>
<b>No. Days Drinking Past Month</b>	18.1 (8.5 - 11.7)	5.8 (5.2 - 6.4)	$F=10.99$	$p<.001$
<b>No. Drinks Past Week<sup>2</sup></b>	7.2 (5.9 - 8.6)	3.0 (2.5 - 3.4)	$F=33.91$	$p<.001$
<b>Days 5+ Drinks Past Year</b>	2.6 (2.4 - 2.9)	1.7 (1.7 - 1.8)	$F=52.02$	$p<.001$
<b>Mean AUDIT Score</b>	7.2 (6.6 - 7.9)	4.2 (4.0 - 4.4)	$F=71.21$	$p<.001$
<b>% AUDIT <math>\geq 8</math><sup>3</sup></b>	40.4 (32.3 - 49.1)	10.5 (8.5 - 12.8)	$OR=4.43$	$p<.001$
<b>% Cannabis Use Past Year</b>	34.4 (26.8 - 42.9)	13.8 (11.5 - 16.4)	$OR=2.89$	$p<.001$
<b>% Drug<sup>4</sup> Use Past Year</b>	35.0 (27.4 - 43.5)	14.2 (11.9 - 16.8)	$OR=2.90$	$P<.001$

1 All tests control for sex.

2 Response scale ranges from 1="Never" (past 12 months) to 6="More than once a week".

3 Scores of 8 or higher are considered to identify those with "Hazardous and Harmful Drinking Patterns".

4 Drugs include use of at least one of cannabis, cocaine, amphetamines, ecstasy, hallucinogens, inhalants, heroin, or steroids.

**Table 4: Drinker Categories of Drinking and Non-drinking Drivers**

<b>Drinker Category</b>	<b>Drinking Drivers (95% CI)</b>	<b>Non-drinking Drivers (95% CI)</b>
<b>Light Infrequent</b>	20.6% (15.0 - 27.7)	50.1% (46.5 - 53.6)
<b>Light Frequent</b>	49.0% (40.5 - 57.6)	37.7% (34.2 - 41.3)
<b>Heavy Infrequent</b>	5.4% (3.2 - 9.0)	6.0% (4.7 - 7.7)
<b>Heavy Frequent</b>	24.9% (18.6 - 32.5)	6.2% (4.6 - 8.4)

$\chi^2=228.96$ ,  $df=3$ ,  $p<.001$

**Table 5: Alcohol Consumption of Frequent and Infrequent Drinking Drivers**

	<b>Frequent Drinking Drivers (95% CI)</b>	<b>Infrequent Drinking Drivers (95% CI)</b>	<b>Test</b>	<b>Significance</b>
<b>No. Days Drinking Past Month</b>	17.5 (12.0 - 23.0)	10.3 (8.5 - 12.0)	F=6.05	p<.02
<b>No. Drinks Past Week</b>	13.7 (7.5 - 19.9)	7.7 (6.4 - 9.1)	F=3.39	p<.10
<b>Days 5+ Drinks Past Year<sup>1</sup></b>	3.4 (2.6 - 4.1)	2.7 (2.4 - 3.0)	F=2.89	p<.10
<b>Mean AUDIT Score<sup>2</sup></b>	9.4 (7.7 - 11.2)	7.3 (6.7 - 7.9)	F=5.20	p<.05

1 Response scale ranges from 1="Never" (past 12 months) to 6="More than once a week"

2 Scores of 8 or higher are considered to identify those with "Hazardous and Harmful Drinking Patterns"

are more likely to be Light-Infrequent drinkers (50.1%) than Drinking Drivers (20.6%). It is of interest to note that almost half (49.0%) of Drinking Drivers are classified as Light-Frequent drinkers. This, together with the 24.9% of Drinking Drivers in the Heavy-Frequent drinking category, suggests that the frequency of alcohol consumption contributes to the likelihood of driving after drinking more than the quantity of consumption. It is, however, the quantity of alcohol consumed that determines the extent of the risk associated with any given drinking-driving occasion; therefore, those Drinking Drivers who not only drink frequently, but also heavily (i.e., Heavy-Frequent drinkers), must be considered a particularly high-risk group).

#### *Frequent Drinking Drivers*

Among the 11.6% of the population of licensed drivers who reported driving after drinking, most said they did so infrequently. Over half (54.8%) reported doing so on only one or two occasions in the past year; 11.7% did so more than once a month. Based on the reported frequency of the behaviour, it is estimated that Canadian drivers drove under the influence of alcohol on over 20 million occasions in the year prior to the survey. Despite the overall prevalence of the behaviour, the data indicate that 86% of all reported drinking-driving trips were accounted for by less than 5% of all licensed drivers in Canada. This suggests that although driving after drinking is not an uncommon behaviour, to a large extent it is confined to a relatively small group of drivers who report doing so frequently.

In light of the finding that most drinking-driving trips are accounted for by only a small proportion of all drivers, a comparison between those who drink and drive frequently (i.e., 12 or more times in the past 12 months) and those who do so less often seemed warranted.

Although males are more likely to drink and drive than females (see Table 2), they are particularly overrepresented among Drinking Drivers who engage in the behaviour frequently. Males represent 93.6% of Frequent Drinking Drivers (95% CI: 86.0–97.2) compared with just 76.1% of Infrequent Drinking Drivers (95% CI: 67.7–82.8; OR = 4.6,  $p < .01$ ). Frequent Drinking Drivers are also more likely to drive daily or almost daily (98.8%; 95% CI: 95.3–99.7) compared with Infrequent Drinking Drivers (91.7%; 95% CI: 83.6–96.0; OR=7.75,  $p < .05$ ).

The most striking differences between Frequent and Infrequent Drinking Drivers concern their reported drinking behaviour. Table 5 shows various measures of alcohol consumption for the two groups. Frequent Drinking Drivers reported drinking on more days a month than Infrequent Drinking Drivers. There was also a tendency for Frequent Drinking Drivers to report consuming a greater number of drinks in the week prior to the survey ( $p < .10$ ) and having more days on which they consumed five or more drinks in the past year ( $p < .10$ ). Frequent Drinking Drivers had higher mean AUDIT scores than Infrequent Drinking Drivers, indicating a greater likelihood of experiencing alcohol-related problems.



## Conclusion

In the 10-year period between 1994 and 2004, the self-reported prevalence of driving after drinking in Canada has decreased substantially. These data are consistent with other indicators of driving after drinking, which also indicate improvement over this period of time. Nevertheless, data from the 2004 CAS indicate that about 12% of licensed drivers in Canada still admit to driving within an hour of consuming two or more drinks containing alcohol. It should be recognized, however, that this estimate of the prevalence of driving after drinking excludes persons who did not have a driver's licence and/or had not driven a vehicle within the past 12 months. Given that not having a licence does not preclude having driven after drinking in the past year, it is likely that the CAS underestimates the proportion of Canadians who drive after drinking. In addition, as with all self-report surveys, the apparent decrease may in part reflect a greater reluctance to report socially unacceptable behaviour.

Although there have been substantial and encouraging reductions in drinking and driving, it remains of considerable concern that despite ongoing public awareness campaigns, enforcement efforts, and ever-more stringent laws to discourage the behaviour, almost 12% of licensed drivers in Canada continue to drive after consuming alcohol. Although drinking-driving behaviour crosses all demographic groups, it is clear from these results that those who persist in driving after drinking differ from the general population of drivers in Canada on a variety of dimensions. The most distinguishing characteristic of Drinking Drivers is their pattern of drinking. Drinking Drivers report drinking more often and in greater quantities than Non-drinking Drivers. They are also more likely to drink at hazardous or harmful levels. It is this heavy pattern of alcohol consumption, combined with daily or almost daily driving, that places these drivers at high risk of crash involvement. The more prevalent use of illegal drugs among Drinking Drivers is indicative of a tendency to engage in other high-risk behaviours and may place these individuals at risk of driving after consuming drugs or a combination of alcohol and drugs.

The provincial differences in the prevalence of driving after drinking appear to reflect differences in other indicators of the drinking-driving problem. Although it is difficult to state conclusively the reasons for these provincial differences, they are most likely the result of regional variation in drinking practices; transportation

patterns; enforcement; and public attitudes towards, and tolerance of, the behaviour. More detailed analysis of these factors may reveal the reasons why jurisdictions differ in the apparent magnitude of the problem.

The CAS data also clearly demonstrate that some Canadians report driving after drinking frequently. Indeed, a substantial proportion of all drinking-driving occasions are accounted for by only a small group of drivers. Persons who frequently drive after drinking can be distinguished from occasional Drinking Drivers on the basis of their heavier and more frequent pattern of alcohol consumption. This is consistent with a large body of research highlighting the significance of a "hard-core" group of Drinking Drivers who are responsible for a disproportionately large share of alcohol-related serious crashes (Beirness, Simpson, & Mayhew, 1998; Simpson et al., 2004; Simpson, Mayhew & Beirness, 1996).

Although there have been substantial reductions in the overall magnitude of the problem over the past two decades, alcohol-related motor vehicle crashes continue to represent one of the largest and most visible harms associated with alcohol use. Further reductions will require innovative and comprehensive approaches to deal strategically with the issue. Such an approach requires a combination of prevention, enforcement, sanctions, and rehabilitation.

Awareness and education programs appear to have played a key role in previous countermeasure efforts. (Shults, Elder, Sleet, et al., 2001). Fresh messages are needed to keep the issue at the forefront of public attention. Specific targeted messages for high-risk groups, such as youth and heavy drinkers, are also needed to ensure these groups are not missed by more general awareness campaigns. More extensive use of innovative server intervention training and safe-ride programs, which are implemented at the place of consumption, may also help minimize the acute risks associated with over-consumption (Shults et al., 2001).

Enforcement must not only be able to detect and charge drivers who are impaired by alcohol, but it must also provide a credible deterrent to prevent the behaviour. Consistent use of random police road checks throughout the year increases the perceived and actual risk of being apprehended, a factor known to decrease the probability of engaging in the behaviour (Beirness, Foss, & Mercer, 1997).

## Conclusion (cont'd)

Sanctions imposed on offenders must be swift, certain and severe. Criminal procedures can create delays of many months between the commission of the offence and conviction by the courts. Immediate sanctions such as administrative licence suspension, imposed at the time or within a few days of the offence, have demonstrated effectiveness, not only as a result of the immediacy of their application, but also the certainty with which they are applied (Beirness, Simpson, et al., 1997; Mann et al., 2000). Short-term administrative suspensions at the provincial level also appear to have a deterrent impact and could be enhanced to improve effectiveness (Beirness & Singhal, 2007; CCMTA, 2006).

In recent years, the certainty of conviction and subsequent sanctions has been the subject of considerable debate. There is the perception that current laws and jurisprudence are being exploited to reduce the probability of conviction. A review of existing legislation and procedures would seem in order to tighten the perceived gaps and ensure that impaired drivers are not able to avoid the sanctions and other measures designed to prevent a recurrence of the behaviour.

Beyond retribution, sanctioning also serves the purposes of incapacitation and rehabilitation. Traditionally, incapacitation for drinking-driving offences has taken the form of licence suspension. The assumption is that without a licence, the offender will not drive and, hence, will not drive after drinking. Despite the known benefits of licence suspension, it is only partial incapacitation as a substantial proportion of suspended drivers continue to operate a vehicle at least occasionally (Ross & Gonzales, 1988). Requiring offenders to install a device in their vehicle that prevents them from operating it if they have been drinking—i.e., an alcohol ignition interlock—provides the public with greater assurance that the offender cannot drive after drinking. Interlock programs in both Canada and the United States have proven very successful in preventing repeat drinking-driving offences (Beirness & Marques, 2004). Greater use of interlock programs with both first-time and repeat offenders could have a substantial impact on the problem.

Alcohol assessment, remedial interventions and rehabilitation programs are also effective components in an overall strategy (Wells-Parker, Bangert-Drowns, McMillen, & Williams, 1995). The use of alcohol among drinking drivers is often frequent and excessive. In the absence of programs to deal with this underlying cause of impaired driving, there is high likelihood the behaviour will be repeated. A comprehensive strategy requires that all impaired-driving offenders undergo an assessment of the extent of alcohol use and, where warranted, that treatment and rehabilitation programs be available according to the level of need. The program options can vary from brief interventions to more intensive treatments for alcohol dependence.

Finally, it must be recognized that the various countermeasures should not be considered as separate elements that can operate independently of each other. Rather, the various pieces should be combined and integrated into an overall comprehensive strategy to enhance the overall impact.

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