

CCMTA Road Safety Research Report Series

Alcohol and Drug-Crash Problem in Canada

2012 Report

Prepared for the Canadian Council of Motor Transport Administrators by the Traffic Injury Research Foundation of Canada



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ABSTRACT

This report describes the magnitude and characteristics of the alcohol-crash and drug-crash problems in Canada during 2012 as well as trends in these problems.

Information contained in this report was drawn from two national databases compiled and maintained by the Traffic Injury Research Foundation (TIRF) and funded jointly by the Public Health Agency of Canada and State Farm. One database contains information on persons fatally injured in motor vehicle crashes; the other has information on persons seriously injured in motor vehicle crashes.

This report is prepared on behalf of the Canadian Council of Motor Transport Administrators (CCMTA). This report examines: data on alcohol in fatally injured drivers and pedestrians; the number and percent of people who died in alcohol-related crashes; alcohol involvement in those crashes in which someone was seriously injured but not killed; and data on drugs in fatally injured drivers.

Thus, in the report, various indicators are used to estimate the magnitude and extent of the alcohol-crash problem and drug-crash problem in Canada during 2012 as well as changes in these problems over the past few years. The indicators include:

- > the number and percent of people who were killed in crashes that involved alcohol;
- > the number and percent of fatally injured drivers who had been drinking;
- > the number and percent of fatally injured pedestrians who had been drinking;
- > the number and percent of drivers in serious injury crashes that involved alcohol; and
- > the number and percent of fatally injured drivers who were positive for drugs.

As well, these indicators are presented separately for each province and territory.

Finally, this report also examines the degree to which there has been a reduction in: (1) fatalities and serious injuries in collisions involving a drinking driver; and (2) the presence of drugs among fatally injured drivers. Analysis is provided for Canada and each province/territory. An average of the 2011 and 2012 data are compared to data from the 2006-2010 baseline period.

The opinions expressed in this report are those of the authors and do not necessarily represent the views or opinions of the reviewers, jurisdictions or CCMTA, who commissioned this report.

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1.0 INTRODUCTION

This report describes the magnitude and characteristics of the alcohol-crash and drug-crash problems in Canada during 2012 as well as trends in these problems. It includes data on alcohol in fatally injured drivers and pedestrians as well as data on drugs in fatally injured drivers derived from the *Fatality Database*. For the past two and a half decades, the *Fatality Database*, developed and maintained by the Traffic Injury Research Foundation (TIRF), has provided objective data on alcohol use among persons fatally injured in motor vehicle crashes. Each year, TIRF compiles information from coroner and medical examiners files on the results of toxicological tests for alcohol and drugs in the blood of fatally injured drivers and pedestrians. Given a high testing rate for alcohol in all jurisdictions, particularly among fatally injured drivers, the *Fatality Database* has proven a valid and reliable source of descriptive data on the magnitude and characteristics of the alcohol-fatal crash problem, a means for monitoring changes/trends in the problem as well as a valuable tool for research on alcohol-impaired driving. Previously, funding for the maintenance of the Fatality Database and the publication of a related report, *The Alcohol-Crash Problem in Canada*, was co-funded by Transport Canada and the Canadian Council of Motor Transport Administrators (CCMTA). Presently, the data collection component of the Fatality Database is co-funded by the Public Health Agency of Canada and State Farm. This report was prepared on behalf of the Canadian Council of Motor Transport Administrators (CCMTA) who provided funding for its publication.

This report also uses supplemental data obtained from police collision reports and coroner files to examine the number and percent of people who died in alcohol-related crashes and the number and percent of drivers testing positive for drugs in Canada. Thus, it extends the focus beyond fatally injured drivers to include all persons killed in road crashes, to provide a better indication of the magnitude and nature of the alcohol-crash problem and drug-crash problem.

This report also examines alcohol involvement in those crashes in which someone was seriously injured but not killed. For this purpose, relevant information is derived from a *Serious Injury Database* that is constructed and maintained by TIRF. Funding for the construction of the Serious Injury Database was initially provided by Transport Canada and CCMTA as part of a previous project. The continued support of the Serious Injury Database is provided by the Public Health Agency of Canada and State Farm. Since few drivers involved in serious injury crashes are tested for alcohol, a surrogate or indirect measure is used to assess the incidence of alcohol involvement in these crashes.

The report is divided into the following fifteen sections:

Section 2.0 briefly describes the sources of the data – the Fatality Database and Serious Injury Database – and the various indicators of the alcohol-crash problem and drug-crash problem used in this report.

Section 3.0 provides descriptive data on the incidence of alcohol involvement in fatal and serious injury crashes and drug involvement in fatal crashes in Canada during 2012 as well as trends in the problem.

In subsequent sections (**4.0 through 16.0**), descriptive data on alcohol involvement in fatal and serious injury crashes and drug use by fatally injured drivers in each province and territory are summarized. Trends

in the problem and comparisons between the 2011-2012 period and the 2006-2010 baseline period are also examined. Caution should be exercised in interpreting some of the numbers and percentages in Sections 4.0 through 16.0 as some of the subgroups examined are small in number.

2.0 DATA SOURCES AND INDICATORS OF THE ALCOHOL-CRASH PROBLEM

Information contained in this report was drawn from two national databases compiled and maintained by TIRF and funded jointly by the Public Health Agency of Canada and State Farm. One database contains information on persons fatally injured in motor vehicle crashes; the other has information on persons seriously injured in motor vehicle crashes. These two sources of information are described in this section of the report.

The section also describes the various indicators that are used to estimate the magnitude and extent of the alcohol-fatal, alcohol-serious injury and drug-fatal crash problems in Canada during 2012 as well as changes in the problem over the past few years. The indicators include:

- > the number and percent of people who were killed in crashes that involved alcohol;
- > the number and percent of fatally injured drivers who had been drinking;
- > the number and percent of fatally injured pedestrians who had been drinking;
- > the number and percent of drivers in serious injury crashes that involved alcohol; and,
- > the number and percent of fatally injured drivers who were positive for drugs.

2.1 Sources of the data

Two national databases were used to generate the statistics for this report – the *Fatality Database* and the *Serious Injury Database*. The *Fatality Database* was initially developed in the early 1970s to provide a comprehensive source of objective data on alcohol use among persons fatally injured in motor vehicle crashes occurring on and off public highways in Canada. It is historically intact from 1973 to 2011, inclusive, for seven provinces – British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, and Prince Edward Island. Beginning with 1987, data are available from all jurisdictions in Canada.

The *Serious Injury Database* was initially constructed in the mid-1990s to examine the incidence of alcohol in crashes that involve a serious injury – i.e., a crash that resulted in a person being admitted to a hospital. It was originally used as a means to assess the extent to which the federal-provincial/territorial *Strategy to Reduce Impaired Driving* initiatives (*STRID 2001, STRID 2010 and now STRID 2015*) achieved a reduction in alcohol-related serious injury crashes. Since 1995, relevant information on crashes that involve serious injury has been assembled from all jurisdictions in Canada.

2.1.1 The *Fatality Database*. The *Fatality Database* consists of case files (records) of persons fatally injured in motor vehicle crashes. Two sources of information provide data for most case files: (1) police reports on fatal motor vehicle collisions and (2) coroners and medical examiners reports. In general, both sources must be accessed to obtain complete data on victims, crashes, vehicles, and toxicology.

Police-reported data include characteristics of the victim (age and sex, position in the vehicle – driver, passenger) and details of the crash (type of vehicle(s) and collision, time, date). Objective, toxicological data on alcohol and drug use among victims are obtained from files in coroners' and medical examiners' offices. The alcohol and drug data are the results of chemical tests, performed on body fluid samples (typically blood) by recognized forensic laboratories or other facilities. Uniform and rigorous testing procedures in each jurisdiction ensure reliable and accurate data on the prior use of alcohol and drugs by victims of motor vehicle collisions. As will be discussed in a subsequent section, there is a high rate of testing for alcohol in most jurisdictions, especially among drivers fatally injured in motor vehicle collisions.

Details of the method used to access and collect relevant police-reported and coroner/medical examiner data on persons fatally injured in motor vehicle collisions as well as the approach used to create case files for the *Fatality Database* are contained in previous annual reports in this series (e.g., see Mayhew et al. 1999). The sections below provide a definition of a motor vehicle fatality, describe the number and type of victim contained in the *Fatality Database*, and discuss the testing rates for alcohol overall in Canada as well as in each jurisdiction.

Motor vehicle fatality. A motor vehicle fatality is defined in the data capture procedures, and in this report, as any person dying within 12 months as a result of injuries sustained in a collision involving a motor vehicle. This is different than the 30 day definition which is typically used by the jurisdictions. Out of 2,159 persons fatally injured in 2012 within 12 months of the collision in Canada, 2,118 (or 98.1%) died within 30 days of the collision.

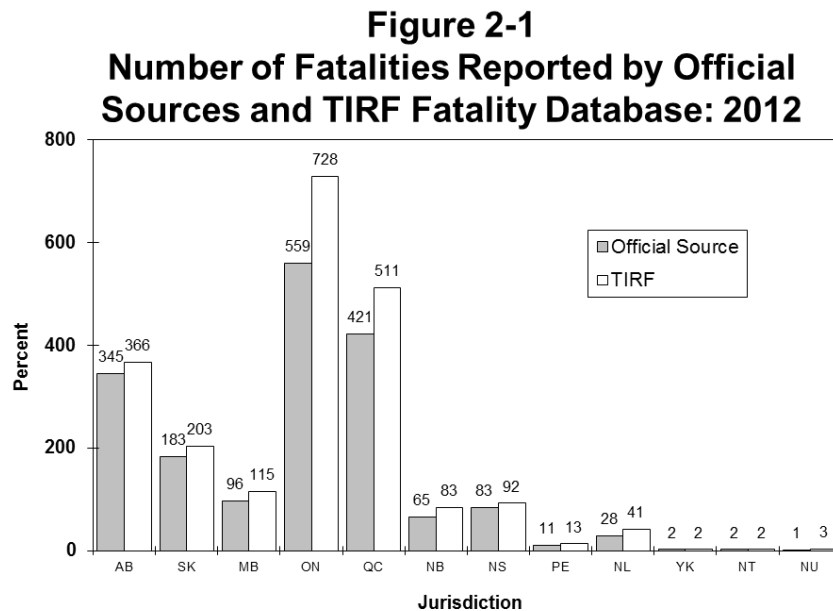
Since this definition of a motor vehicle fatality differs somewhat from those of some coroners/medical examiners and some provincial transportation agencies, the number of fatalities included in the *Fatality Database* may also differ slightly from those reported by other official sources (see Mayhew et al. 1999 for a description of how these agencies define motor vehicle fatalities). The fatality data reported in Section 2 includes those persons dying within 12 months of the collision. However, in order to increase the compatibility of this report with other sources, data are provided for both victims dying within 12 months of the collision and those dying within 30 days of the collision in Sections 3 thru 16.

Number of fatalities: Official sources compared to the *Fatality Database*. The *Fatality Database* contains information on 2,159 persons fatally injured in motor vehicle collisions in Canada during 2012 (excluding British Columbia). This figure is higher than the number that would be obtained by adding together the fatalities officially reported in each jurisdiction in Canada. A key explanation of why the *Fatality Database* comprises more cases than those identified by transportation agencies is due to historical differences in reporting procedures. TIRF has included persons dying within 12 months (365 days) of the collision whereas transportation agencies have included persons dying within 30 days of the collision. To address this issue, several sections of this report provide data for both victims dying within 12 months and 30 days of the collision.

There are several other explanations why the *Fatality Database* has more cases than the transportation agencies. Cases that are not captured by transportation agencies yet account for fatalities within the *Fatality Database* include the following:

- > Victims of motor vehicle crashes that occurred off-road (e.g., ATV, dirt bike, snowmobile, farm tractors, industrial motor vehicles);
- > Victims in collisions which occur on private property, crown land, First Nations lands, or government property;
- > Victims involved in a collision in one jurisdiction that die in another jurisdiction;
- > Victims involved in a collision in one year that die in the subsequent year (e.g., collide in 2011, die in 2012), provided that the date of death is within 12 months (365 days) of the collision; and,
- > Victims identified by the coroner/medical examiner that were coded as an injury or omitted from transportation agency databases (procedures for data collection available to coroners and medical examiners can be more robust and conducive to avoiding the underreporting of crashes).

Figure 2-1 provides a comparison of the number of traffic fatalities reported by transportation agencies with the number of motor vehicle fatalities included in the *Fatality Database* for 2012. For most of the jurisdictions, the number of cases in the TIRF database is higher than that officially reported by transportation agencies. *Data shown exclude British Columbia, whose 2012 fatality data were not available at the time of the publication of this report.*



Type of victim. The *Fatality Database* contains information on three types of victims fatally injured in motor vehicle crashes – drivers/riders, passengers, and pedestrians. Drivers include operators of all types of vehicles, both on road (automobiles, trucks/vans, motorcycles, buses, emergency vehicles) and off-road (bicycles, all-terrain vehicles, dirt bikes, snowmobiles, and farm tractors). Similarly, passengers include other

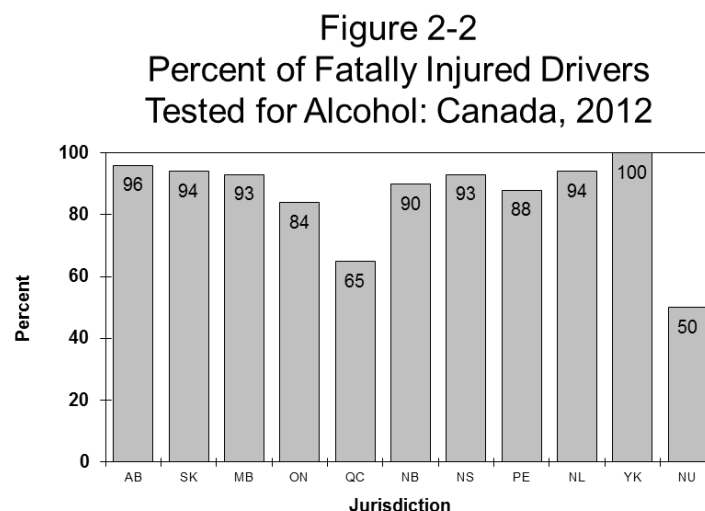
vehicle occupants as well as persons riding on vehicles (motorcycles, bicycles, ATVs) but not driving or operating them. And, finally, pedestrians are those individuals travelling on foot that were struck and fatally injured by a motor vehicle.

In Canada during 2012, almost 2 out of every 3 fatalities were operators of motor vehicles (64.6%); 20.0% were passengers; and 15.4% were pedestrians. From this perspective, vehicle occupants, particularly drivers, remain the major road-user group of concern.

Testing rates for alcohol. The inclusion of objective data on the presence of alcohol among traffic victims represents an important feature of the *Fatality Database*. The value of this information depends greatly on the frequency with which tests for the presence of alcohol are performed on the body fluids of victims.

In Canada during 2012, fatally injured drivers were tested most frequently (83.1%), followed by pedestrians (65.5%) and passengers (38.5%). The testing rate among fatally injured pedestrians and passengers increases slightly if victims under the age of 16, who are less often tested, are excluded (68.6% and 40.2%, respectively). Testing rates also increase among fatally injured pedestrians if the analyses focus only on persons dying less than six hours after the crash (applying this restriction, the testing rate among pedestrians increases to 82.2%).

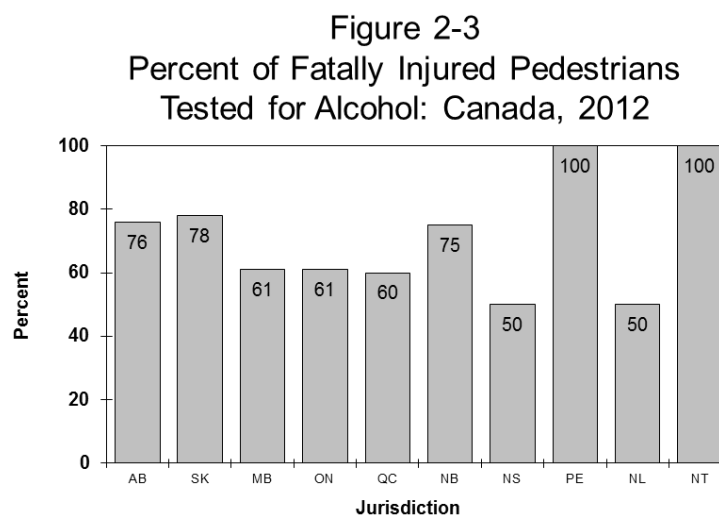
The rate of testing for alcohol varies not only as a function of the type of victim but by jurisdiction as well. This is illustrated graphically in Figure 2-2, which shows the rate of testing for alcohol among fatally injured drivers in the various jurisdictions.



Most jurisdictions test over 80.0% of the driver fatalities. In some jurisdictions, there is clearly room for improvement – the testing rates need to be increased to enhance the reliability and utility of the information. In those jurisdictions with a high rate of testing for fatally injured drivers, there are various reasons why tests are not done on some drivers. This occurs, for example, when the victim survived the initial crash and died much later – the alcohol results at that time would be of little value. Or, if extensive transfusions were given to the victim prior to death, there is little point in taking a blood sample for an

alcohol test. And, if the victim were incinerated in a vehicle fire, or massive injuries resulted in exsanguination (i.e., excessive loss of blood), body fluids may not be available for testing.

Figure 2-3 shows the rate of testing for alcohol among fatally injured pedestrians in the various jurisdictions. As can be seen, there is considerable variation in the rate of testing – from 50.0% in Nova Scotia and Newfoundland and Labrador to 100.0% in Prince Edward Island and the Northwest Territories.



2.1.2 The Serious Injury Database. The Serious Injury Database contains information on persons seriously injured in crashes and on all drivers involved in these crashes, whether the driver was injured or not. The data come from motor vehicle crash reports completed by investigating police officers. The information compiled for each seriously injured person and crash-involved driver includes: personal characteristics (age and sex); factors contributing to the crash, including police-reported alcohol involvement; type of vehicle driven/occupied (e.g., automobile, truck/van, motorcycle) and the details of the crash (time, date, type of collision – multiple vehicle/single vehicle).

To construct the database, annual motor vehicle collision data are obtained from each jurisdiction in Canada. These data are either provided to TIRF by the relevant agency in the jurisdiction or, in some cases, provided to TIRF by Transport Canada who received the collision data from the jurisdiction. Relevant information on collisions in which someone was seriously injured is extracted from the provincial/territorial data files and then aggregated into the national *Serious Injury Database*.

The Serious Injury Database provides data from 1995 to 2012 for most jurisdictions. Only since 1998 in the Yukon and 2005 in British Columbia have investigating officers been able to record on the police report form whether the crash involved a serious injury or, at the person level, the severity of the injury a person sustained in the crash. Accordingly, it was not possible to identify persons who sustained a serious injury or drivers involved in serious injury crashes in those jurisdictions prior to the dates indicated. For this reason, the Canadian trend data presented in Section 3.6.4 include only data from 2005 to 2012. However, for other jurisdictions, trend data are available since 1995.

In the case of British Columbia (17.6%), Newfoundland and Labrador (2.9%), and the Northwest Territories (2.7%), some injury severities are recorded as “unspecified”, so the number of drivers in serious injury crashes used in this report for these three jurisdictions might be underestimated.

The sections below provide a definition of a serious injury crash, describe the number and type of cases contained in the *Serious Injury Database*, and discuss the use of a surrogate or indirect measure to assess alcohol involvement in these crashes.

Serious injury. A serious injury crash is one that resulted in at least one person being admitted to a hospital. The serious injury may have been sustained by a driver, passenger or pedestrian involved in the crash (i.e., the driver involved in a serious injury crash may not have been the person seriously injured).

Number of cases. In Canada during 2012, 10,921 persons were seriously injured in motor vehicle crashes; 13,569 drivers were involved in these crashes. These numbers for Canada exclude Nunavut because data on serious injury cases were not available at the time this report was being prepared.

Table 2-1 shows the number of drivers for each province and territory. Ontario accounts for the largest number of the drivers involved in serious injury crashes (3,450 drivers or 25.4% of the “national” total); the Northwest Territories account for the lowest number of drivers in such crashes, 13 drivers (or 0.1% of all drivers).

Table 2-1
Number and Percent of Drivers Involved in Serious Injury Crashes in Each Jurisdiction: Canada, 2012

Jurisdiction	Number of Drivers	% of Total
British Columbia	2,173	16.0
Alberta	3,286	24.2
Saskatchewan	479	3.5
Manitoba	448	3.3
Ontario	3,450	25.4
Quebec	2,848	21.0
New Brunswick	242	1.8
Nova Scotia	368	2.7
Prince Edward Island	68	0.5
Newfoundland and Labrador	174	1.3
Yukon Territory	20	0.1
Northwest Territories	13	0.1
Nunavut*		
TOTAL	13,569	100.0

* Data not available at time of publication.

Type of cases. The *Serious Injury Database* includes information on persons who sustained a serious injury in a motor vehicle crash and information on all drivers involved in these crashes. Drivers include operators of all types of vehicles: automobiles, trucks/vans, motorcycles, bicycles, all-terrain vehicles, dirt bikes, and snowmobiles. It should be noted that analysis of the vehicle occupied by drivers in Canada involved in serious injury crashes in 2012 excludes Quebec. Since March 2010, Quebec has regrouped automobiles and light trucks into a single category in its collision data. Of all the drivers involved in serious injury crashes:

almost half were automobile drivers (47.6%); one-third were truck/van drivers (33.5%); 8.7% were motorcycle riders; 5.0% were off-road vehicle drivers (e.g., snowmobiles, all-terrain vehicles, dirt bikes); 3.4% were tractor-trailer drivers; and 1.2% were drivers of other types of highway vehicles (e.g., buses, emergency vehicles).

A surrogate measure of alcohol involvement. Drivers in serious injury crashes are seldom tested for alcohol. The investigating police officer may, however, indicate the condition of each of the drivers involved in the crash (e.g., whether or not they had been drinking), or in the case of Quebec, if alcohol was “a probable cause” in the crash. Unfortunately, a judgement by police about the drivers’ use of alcohol is not always made. In addition, the investigating police officer may determine that some other factor – e.g., driver fatigue, medical or physical defect – would more accurately describe the condition of the driver. Thus, relying exclusively on police-reported alcohol involvement would underestimate the magnitude of the alcohol-related serious injury crash problem.

To overcome this data limitation, a surrogate or indirect measure of alcohol involvement is used in this report. A description of this surrogate measure is provided in the next section.

2.2 Indicators of the problem

The indicators used to describe the magnitude and nature of the alcohol-related fatal and serious injury crash problem include:

- > the number and percent of people who are killed in alcohol-related crashes;
- > the number and percent of fatally injured drivers who had been drinking or were legally impaired;
- > the number and percent of pedestrians who had been drinking;
- > the number and percent of drivers in serious injury crashes that involved alcohol.

In addition, the following indicator is used to describe the magnitude and nature of the drug-crash problem:

- > the number and percent of fatally injured drivers who were positive for drugs.

Each of these indicators of the problem is described briefly below.

2.2.1 The number and percent of people killed in alcohol-related crashes. For each person killed in a motor vehicle crash, it was possible to determine if alcohol was a factor in the crash. A motor vehicle fatality was considered to be alcohol-related if there was at least one drinking driver or drinking pedestrian in the fatal crash.

To determine if alcohol was involved in the fatal crash, information on the BAC of fatally injured drivers and pedestrians from the *Fatality Database* was supplemented with any other evidence of alcohol in the fatal crash identified from either the coroner’s report or from the police collision report – e.g., the police reported that a driver or pedestrian in the fatal crash had consumed alcohol. The review of coroner files and police reports provided information on the presence of alcohol among drivers who died but were not

chemically tested for alcohol; drivers who survived (virtually all of whom are not tested), and pedestrians who were not tested.

Among all the people who died in motor vehicle crashes both on- and off-road in Canada during 2012, it was possible to determine if alcohol was a factor in the crash in 91.8% of the cases.

In addition, for Canada and each jurisdiction, this report describes characteristics and trends in the number of deaths in crashes involving a drinking driver. This particular indicator only considers a fatality to be alcohol-related if at least one driver (either killed or surviving) had been drinking. For this variable, only fatalities occurring on public roadways are included. Furthermore, at least one of the vehicles involved must be a principal highway vehicle (e.g., automobile, truck, van, motorcycle, tractor trailer, etc.).

Among the people who died in motor vehicles crashes on public roadways that involved at least one principal highway vehicle, it was possible to determine if a drinking driver had been involved in 93.1% of the cases.

2.2.2 The number and percent of fatally injured drivers who had been drinking. The magnitude of the alcohol-fatal crash problem is usually stated in terms of the number and percent of fatally injured drivers who were positive for alcohol. As mentioned previously, this indicator of the problem is useful because of its validity and because the requisite data have been routinely compiled each year as part of the *Fatality Database* project.

The indicator is a highly valid and reliable measure of the problem because almost all drivers who are killed in crashes are tested for the presence of alcohol – i.e., similar to previous years, there was a high testing rate in Canada during 2012, with 83.2% of fatally injured drivers being tested for alcohol.

Although it is not provided in Sections 2 and 3 of this report, some trend tables and figures dealing with alcohol use among fatally injured drivers is limited to those drivers who died within six hours of the collision. The six-hour window is used since it represents the average amount of time that would be required for drivers with BACs of 80 mg% to metabolize the alcohol in their bloodstream.

2.2.3 The number and percent of fatally injured pedestrians who had been drinking. Drinking pedestrians not just drinking drivers contribute to the overall magnitude of the alcohol-fatal crash problem each year in Canada. This occurs because walking on or beside the highways after drinking is extremely risky. Accordingly, this report uses information from the *Fatality Database* to examine the number and percent of fatally injured drinking pedestrians. This is possible because testing for alcohol, especially among those over 16 years of age is reasonably high – 65.5% overall, which increases to 68.6% if victims under the age of 16 are excluded.

Descriptive data on fatally injured drinking pedestrians are provided in the Canada section (3.0) but not in the provincial/territorial sections (4.0 through 16.0) of the report. The number of fatally injured pedestrians in most jurisdictions is relatively small, so detailed results for these jurisdictions would not be reliable. Jurisdictional results are also not reported to protect privacy. However, data on the overall incidence of fatally injured drinking pedestrians in each jurisdiction are presented in the Canada section of the report (3.3).

2.2.4 The number and percent of drivers in serious injury crashes that involved alcohol. The extent to which alcohol is involved in serious injury crashes is not well documented and, consequently, poorly understood for two primary reasons. First, drivers involved in such crashes are seldom tested for the presence of alcohol. Second, investigating police officers do not always report the presence of alcohol in these crashes – see Mayhew et al. (1997) for a discussion of the limitations of information on alcohol involvement contained in police collision reports.

For these reasons, a surrogate or indirect measure of the alcohol-related serious injury crash problem has been used. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night, from 9:00 pm to 6:00 am (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash.

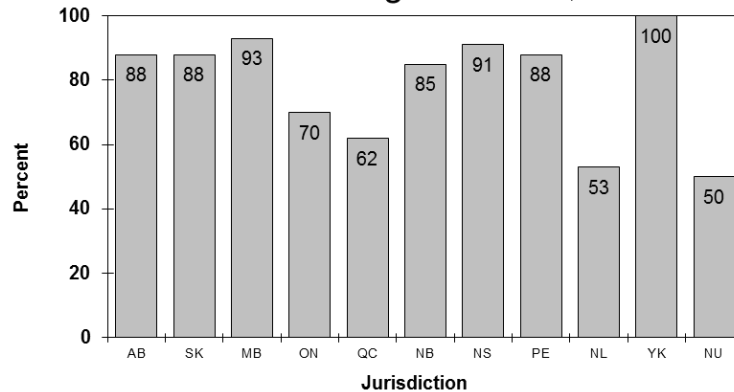
Surrogate measures have been shown to correlate strongly with more direct measures of the alcohol-crash problem – e.g., the number of drinking driver fatalities as determined by chemical tests in blood – and provide a reasonably reliable estimate of trends in alcohol-related serious injury crashes. Such measures, however, have limited validity – i.e., not all drinking drivers are identified – so this measure likely provides a “conservative” estimate of the magnitude of the problem (see Mayhew et al. 1997).

2.2.5 The number and percent of fatally injured drivers who were positive for drugs. The magnitude of the drug-fatal crash problem is usually stated in terms of the number and percent of fatally injured drivers who tested positive for drugs. This indicator of the problem has become more valid as more historical data on this indicator have been compiled in TIRF’s *Fatality Database*.

The indicator is a relatively reliable measure of the problem as a growing percentage of drivers who are killed in crashes are tested for the presence of drugs – i.e., similar to previous years, there was a respectable testing rate in Canada during 2012, with 75.3% of fatally injured drivers being tested for drugs.

The rate of testing for alcohol varies by jurisdiction. Figure 2-4 shows the rate of testing for drugs among fatally injured drivers in the various jurisdictions. Testing rates vary from 50.0% in Nunavut to 100.0% in the Yukon.

Figure 2-4
Percent of Fatally Injured Drivers
Tested for Drugs: Canada, 2012



Not only does the Fatality Database capture information on whether or not a driver tests positive for drugs. Data are also collected to indicate the type of drug or drugs that are found in the blood sample of a fatally injured driver. These drugs can include illicit, prescription, and over-the-counter drugs as many different types of drugs adversely affect driving performance.

Drug Evaluation Classification (DEC) programs, used by police services throughout North America categorize drugs into the various groups on the basis of common signs and symptoms exhibited by persons using these drugs (Jonah, 2012). This report uses these categories which are:

- > Cannabis;
- > Central nervous system depressants (e.g., benzodiazepines and antihistamines);
- > Central nervous system stimulants such as cocaine, amphetamine, methamphetamine, and ecstasy (MDMA);
- > Hallucinogens (e.g., LSD, magic mushrooms);
- > Dissociative anesthetics such as ketamine and phencyclidine (PCP);
- > Narcotic analgesics (e.g., morphine, heroin, methadone, codeine, oxycodone); and,
- > Inhalants (e.g., toluene, gasoline, cleaning solvents).

In Section 3.5 and corresponding sections for each jurisdiction, tables are provided to show how many drivers tested positive for each of the afore-mentioned drug categories. Although there is no recognized average interval of time for a driver to metabolize drugs in his/her bloodstream, some jurisdictional trend tables and figures dealing with drug use among fatally injured drivers is limited to those drivers who died within six hours of the collision. The six-hour window is used to compare the same sample of drivers who were tested for alcohol.

3.0 CANADA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in Canada. It describes data on:

- > people who were killed in alcohol-related crashes (Section 3.1);
- > alcohol use among fatally injured drivers (Section 3.2);
- > alcohol use among fatally injured pedestrians (Section 3.3);
- > drivers involved in alcohol-related serious injury crashes (Section 3.4);
- > drug use among fatally injured drivers (Section 3.5); and,
- > trends in the alcohol-crash and drug-crash problems (Section 3.6).

3.1 Deaths in alcohol-related crashes

Table 3-1 presents information on people who died in alcohol-related crashes in Canada during 2012 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. *At the time this report was being prepared, 2012 coroner data from British Columbia were not available. For this reason, 2012 data reported in this section excludes this jurisdiction. This report will be updated when these data become available.* Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, it can be seen that among persons dying within 12 months of the collision, 207 people aged 16-19 were killed in motor vehicle crashes in Canada during 2012. And, in 193 cases (93.2%) it was possible to determine if alcohol was a factor in the crash. The next column shows the number of people killed in crashes that were known to be alcohol-involved. For example, 75 people aged 16-19 died in alcohol-related crashes in Canada during 2012. The next column expresses this as a percentage – i.e., 38.9% of the 16-19 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 16-19 year olds represent 10.6% of all the people killed in alcohol-related crashes in Canada during 2012.

An examination of the section for persons dying within 30 days of the collision shows that 205 persons aged 16-19 died in motor vehicle crashes. In 191 of these cases (93.2%), it was possible to determine if alcohol

was a factor in the crash. Among these persons, 74 (38.7%) were alcohol-related deaths. And 16-19 year olds accounted for 10.5% of people dying in alcohol-related crashes.

The totals at the bottom of the table provide a summary. As can be seen, 2,159 persons died within 12 months of a motor vehicle crash in Canada during 2012. In 1,984 (91.9%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 707 (35.6%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (2,159 x .356) it can be estimated that *in Canada (excluding British Columbia) during 2012, 769 persons died in alcohol-related crashes within 12 months of the collision.*

Table 3-1
Deaths in Alcohol-Related Crashes: Canada, 2012*

Persons Dying Within 12 Months of Collision							Persons Dying Within 30 Days of Collision					
Category of Victim	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)		
		No.	% of total	No.	% of known	% of all ARDs		No.	% of total	No.	% of known	% of all ARDs
Age Group												
<16	87	66	75.9	5	7.6	0.7	86	65	75.6	5	7.7	0.7
16-19	207	193	93.2	75	38.9	10.6	205	191	93.2	74	38.7	10.5
20-25	329	315	95.7	157	49.8	22.2	329	315	95.7	157	49.8	22.3
26-35	315	300	95.2	159	53.0	22.5	313	298	95.2	158	53.0	22.5
36-45	253	237	93.7	113	47.7	16.0	250	235	94.0	112	47.7	15.9
46-55	331	302	91.2	117	38.7	16.5	326	299	91.7	117	39.1	16.6
>55	637	571	89.6	81	14.2	11.5	609	556	91.3	80	14.4	11.4
Gender												
Male	1539	1418	92.1	566	39.9	80.1	1510	1402	92.8	564	40.2	80.2
Female	620	566	91.3	141	24.9	19.9	608	557	91.6	139	25.0	19.8
Victim Type												
Driver/ Operator	1394	1319	94.6	469	35.6	66.3	1375	1308	95.1	469	35.9	66.7
Passenger	431	386	89.6	137	35.5	19.4	425	381	89.6	135	35.4	19.2
Pedestrian	333	279	83.8	101	36.2	14.3	317	270	85.2	99	36.7	14.1
Unknown	1	0	0.0	0	0.0	0.0	1	0	0.0	0	0.0	0.0
Vehicle Occupied												
Automobiles	909	852	93.7	273	32.0	38.6	897	845	94.2	273	32.3	38.8
Trucks/Vans	467	437	93.6	181	41.4	25.6	460	431	93.7	179	41.5	25.5
Motorcycles	163	154	94.5	38	24.7	5.4	161	152	94.4	38	25.0	5.4
Other Hwy Vehicles	43	39	90.7	6	15.4	0.8	42	38	90.5	6	15.8	0.9
Off-road Vehicles	241	222	92.1	107	48.2	15.1	240	222	92.5	107	48.2	15.2
(Pedestrians)	333	279	83.8	101	36.2	14.3	317	270	85.2	99	36.7	14.1
unknown	3	1	33.3	1	100.0	0.1	1	1	100.0	1	100.0	0.1
Collision Location												
Public Road	1956	1823	93.2	624	34.2	88.3	1923	1800	93.6	620	34.4	88.2
Off-road	203	161	79.3	83	51.6	11.7	195	159	81.5	83	52.2	11.8
TOTAL	2159	1984	91.9	707	35.6	100.0	2118	1959	92.5	703	35.9	100.0

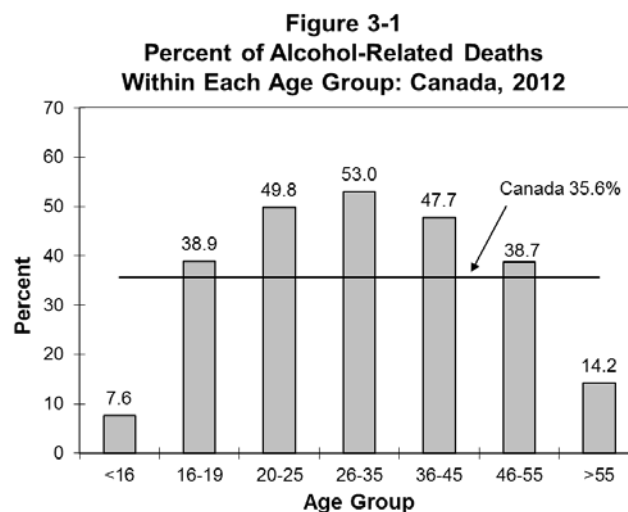
* excluding British Columbia

Among the 2,118 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 92.5% of the cases. Of these known cases, 703 (35.9%) involved alcohol. Extrapolating this figure to

the total number of motor vehicle fatalities (2,118 x .359) it can be estimated that *in Canada (excluding British Columbia) during 2012, 760 persons died in alcohol-related crashes within 30 days of the collision.*

3.1.1 Victim age. Of all the people who died in alcohol-related crashes within 12 months of the collision (see last column in the first section), 22.5% were aged 26-35; 22.2% were aged 20-25; 16.5% were aged 46-55; 16.0% were aged 36-45; 11.5% were over 55; and 10.6% were aged 16-19. The youngest (<16) group accounted for only 0.7% of all people who died in alcohol-related crashes.

Figure 3-1 shows the percent of alcohol-related deaths within each age group. The highest incidence of alcohol involvement occurred in the crashes in which persons aged 26-35 and 20-25 died (53.0% and 49.8%, respectively). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities as only 7.6% of persons under 16 and 14.2% of persons over 55 years of age died in crashes involving alcohol.



3.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 80.1% were males. The incidence of alcohol in crashes in which a male died (39.9%) was greater than the incidence of alcohol in crashes in which a female died (24.9%).

3.1.3 Victim type. Of all the people who died in alcohol-related crashes within 12 months of the collision, 66.3% were drivers/operators of a vehicle; 19.4% were passengers; and 14.3% were pedestrians. Within each of these victim types, there are some differences in alcohol involvement. Among the principal victim types, the highest incidence of alcohol involvement (36.2%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 35.6% of the crashes in which a driver/operator died and 35.5% of those in which a passenger died.

3.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes within 12 months of the collision, two-fifths (38.6%) were in an automobile; 25.6% were in a truck/van; 15.1% were on an off-road vehicle (e.g., bicycle, snowmobile, all-terrain vehicle); and 5.4% were on a motorcycle.

The incidence of alcohol involvement in which a truck/van occupant died was greater than the incidence of alcohol in crashes in which an automobile occupant died (41.4% versus 32.0%). The incidence of alcohol involvement in which a motorcycle occupant died was 24.7%. Alcohol was involved in 48.2% of the crashes in which an off-road vehicle occupant died.

3.1.5 Collision location. Of all the people who died in alcohol-related crashes within 12 months of the collision, 88.3% died in a collision which occurred on a public road and 11.7% died in an off-road collision. However, the incidence of alcohol involvement in which a victim died in an alcohol-related crash was greater for those dying in off-road collisions (51.6%) than it was for persons dying in a collision which occurred on a public road (34.2%).

3.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Canada during 2012. *At the time this report was being prepared, 2012 coroner data from British Columbia were not available. For this reason, 2012 data reported in this section excludes this jurisdiction.* Table 3-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time and death time (within 12 months vs. within 30 days of the collision). The data are presented for drivers of the principal types of vehicles (i.e., automobiles, trucks, vans, motorcycles, tractor-trailers) who died in public road and off-road collisions.

The first column in the table shows the number of drivers killed. The next two columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests – this includes the percent of those tested who were positive for alcohol in each of five blood alcohol concentration (BAC) levels.

To illustrate, among 20-25 year olds there were 185 drivers killed during 2012; 160 of these fatally injured drivers (86.5%) were tested for alcohol. Of those who were tested, 57.5% showed no evidence of alcohol, 3.1% had BACs below 50 mg%, 3.8% had BACs from 50 to 80 mg%, 8.8% had BACs from 81 to 160 mg%, and 26.9% had BACs over 160 mg%.

The main findings are shown by the totals at the bottom of the table. As can be seen, there were 1,172 drivers fatally injured in traffic crashes in Canada during 2012. The overall rate of testing for alcohol in drivers was 84.1%, slightly higher than the rate in 2011 (82.5%). Among tested drivers in Canada:

- > 66.7% showed no evidence of alcohol as 33.3% had been drinking;
- > 3.1% had BACs from 1-49 mg%;
- > 1.6% had BACs from 50-80 mg%
- > 7.2% had BACs from 81 to 160 mg%; and,
- > 21.3% had BACs over 160 mg%.

Thus, 33.3% of fatally injured drivers in Canada had been drinking and 85.7% of fatally injured drinking drivers had BACs over 80 mg%.

Table 3-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Canada, 2012 (excluding British Columbia)

Category of Driver	Number of Drivers*	Drivers Tested		Zero	Percent of Tested Drivers with BACs of:			
		Number	% of total		1-49	50-80	81-160	>160
<u>Age</u>								
<20**	86	72	83.7	65.3	5.6	4.2	11.1	13.9
20-25	185	160	86.5	57.5	3.1	3.8	8.8	26.9
26-35	197	176	89.3	47.7	5.1	0.0	11.9	35.2
36-45	162	146	90.1	63.0	3.4	0.7	8.2	24.7
46-55	195	168	86.2	65.5	1.8	1.8	5.4	25.6
>55	347	264	76.1	88.3	1.9	1.1	2.7	6.1
<u>Gender</u>								
Male	907	772	85.1	64.1	3.5	1.7	7.8	22.9
Female	265	214	80.8	76.2	1.9	1.4	5.1	15.4
<u>Vehicle Type</u>								
Automobile	661	537	81.2	68.5	2.6	1.3	8.6	19.0
Motorcycle	155	128	82.6	73.4	5.5	2.3	3.9	14.8
Tractor Trailer	33	31	93.9	87.1	6.5	0.0	0.0	6.5
Heavy Truck ¹	4	4	100.0	100.0	0.0	0.0	0.0	0.0
Van	82	73	89.0	67.1	2.7	4.1	2.7	23.3
Light Truck ²	232	209	90.1	53.6	2.9	1.4	8.6	33.5
Other Truck ³	3	2	66.7	100.0	0.0	0.0	0.0	0.0
Other Hwy. Vehicle ⁴	2	2	100.0	100.0	0.0	0.0	0.0	0.0
<u>Collision Type</u>								
Single-Vehicle	537	445	82.9	48.1	3.1	2.0	11.9	34.8
Multiple-Vehicle	635	541	85.2	82.1	3.1	1.3	3.3	10.2
<u>Duration Between Crash and Death Time</u>								
Within 30 Days	1158	984	85.0	66.7	3.2	1.6	7.2	21.3
> 30 Days	14	2	0.0	100.0	0.0	0.0	0	0.0
TOTAL	1172	986	84.1	66.7	3.1	1.6	7.2	21.3

* Excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles.

** Drivers in multiple age groups have been aggregated to ensure that an individual will not be identified.

¹ Trucks over 4500 kg.

² e.g., pickup trucks.

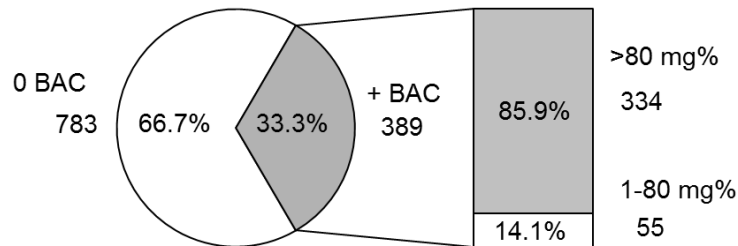
³ Motorhomes, utility vehicles, plows and trucks of unknown type.

⁴ Emergency vehicles and buses.

Note: The vehicle types that appear in the shaded area correspond to the truck/van category used in the jurisdictional sections of this report.

In Figure 3-2, the BAC distribution for tested fatally injured drivers is extrapolated to reflect the BAC distribution for all fatally injured drivers. In this figure, 389 of 1,172 drivers (33.2%) have a positive BAC. And among fatally injured drinking drivers, 334 (85.9%) have BACs over 80 mg%.

Figure 3-2
BACs** Among Fatally Injured
Drivers*: Canada, 2012



* excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles
** numbers are estimates based on the BAC distribution of drivers tested for alcohol

3.2.1 Age differences. Figures 3-3 and 3-4 summarize the data from Table 3-2 for the various age groups. Figure 3-3 shows the percent of all drinking drivers accounted for by each age group. The bar on the left shows the percent of all fatally injured drivers with any evidence of alcohol accounted for by each age group. On the right is shown the percent of “legally impaired drivers” – BACs over 80 mg% – accounted for by each age group. Drivers under 16 are not included because very few of them had been drinking.

Of all the fatally injured drinking drivers, 28.1% were aged 26-35; 20.8% were aged 20-25; 17.7% were aged 46-55; 16.5% were aged 36-45; and 9.5% were over 55. Those aged 16-19 accounted for only 7.3% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 29.5% were aged 26-35; 20.3% were aged 20-25; 18.5% were aged 46-55; 17.1% were aged 36-45; and 8.2% were over 55. Those aged 16-19 accounted for only 6.4% of fatally injured drivers who were over the legal limit.

Figure 3-3
Percent of All Fatally Injured Drinking and Legally Impaired
Drivers Accounted for by Each Age Group: Canada, 2012

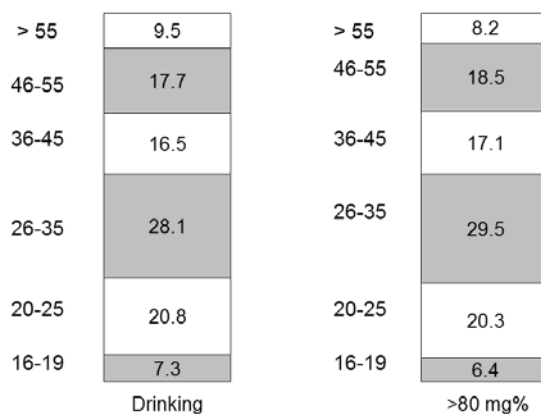
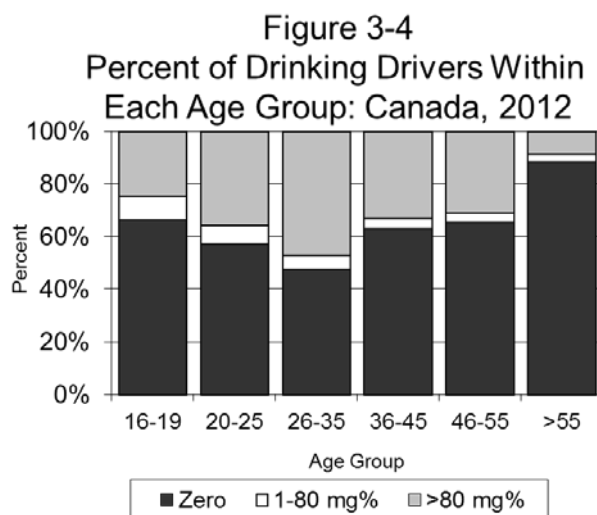


Figure 3-4 presents the information in a slightly different manner. For each age group, the percentage of drivers who were sober (zero BAC) is shown by the lower, black portion of the bar; the percent who were

positive for alcohol but whose BAC was below the legal limit (1-80 mg%) is shown by the white section in the middle, and the percent with BACs over the legal limit (>80 mg%) is shown by the upper, grey part of the bar.



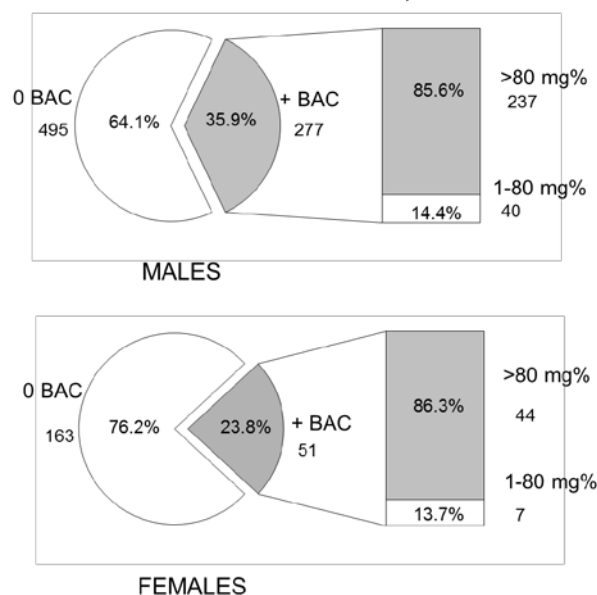
Fatally injured drivers age 26-35 were the most likely to have been drinking – 52.3% of drivers in this age group had been drinking. By contrast, only 11.7% of tested drivers over age 55 had been drinking.

3.2.2 Gender differences. Males dominate the picture – they account for 84.4% of all the fatally injured drivers who had been drinking and 84.3% of all of the fatally injured drivers who were legally impaired. Males dominate the picture largely because they account for 77.4% of the drivers who are killed (907 of the 1,172 fatalities are males).

A comparison in the prevalence of alcohol use among male and female fatally injured drivers is shown in Figure 3-5. The pie chart shows within each gender, the percent who were sober (i.e., 0 BAC) and positive for alcohol (+ BAC). The bar to the right of the pie chart shows the distribution of alcohol levels found among those who were drinking – the percent who had alcohol levels above and below the legal limit. Percentages are given inside the figures; the absolute number of cases is shown adjacent to the figure.

Fatally injured male drivers were considerably more likely to have been drinking than female drivers (35.9% and 23.8%, respectively). And, most of the male and female drivers who were drinking had BACs over the legal limit (85.6% and 86.3%, respectively).

Figure 3-5
Alcohol Use Among Male and
Female Drivers: Canada, 2012



3.2.3 Vehicle differences. Table 3-3 shows the number and percent of drinking and legally impaired drivers accounted for by drivers of different types of vehicles. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 51.5% were automobile drivers; 29.6% were light truck drivers; 10.4% were motorcycle riders; 7.3% were van drivers; and 1.2% were tractor-trailer drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 52.7% were automobile drivers; 31.3% were light truck drivers; 8.5% were motorcycle riders; 6.8% were van drivers; and 0.7% were tractor-trailer drivers.

Table 3-3
Number and Percent of Fatally Injured Drinking and Legally Impaired Drivers
Accounted for by Drivers* of Different Vehicle Types: Canada, 2012

Vehicle Type	Number of Drinking Drivers	% of All Drinking Drivers	Number of Legally Impaired Drivers	% of All Legally Impaired Drivers
Automobile	169	51.5	148	52.7
Motorcycle	34	10.4	24	8.5
Tractor-Trailer	4	1.2	2	0.7
Heavy Truck ¹	0	0.0	0	0.0
Van	24	7.3	19	6.8
Light Truck ²	97	29.6	88	31.3
TOTAL	328	100.0	281	100.0

* Excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles.

¹ Trucks over 4500 kg.

² e.g., pickup trucks.

Figures 3-6a, 3-6b and 3-6c summarize the results of alcohol tests for drivers fatally injured in 2012 according to the type of vehicle being operated: automobile drivers and drivers of vans (Figure 3-6a); motorcycle riders and drivers of light trucks (Figure 3-6b); and drivers of heavy trucks and tractor-trailers (Figure 3-6c). A common format is used in all cases. The pie chart shows the number and percent of drivers who were sober as well as the number and percent of drivers who had been drinking. The bar chart displays the BAC distribution among those who were positive for alcohol.

Among fatally injured automobile drivers, 31.5% had been drinking. Of those who were drinking, the vast majority (87.6%) had alcohol levels in excess of the legal limit. Among fatally injured van drivers, 32.9% had been drinking and most (79.2%) of these had BACs over the legal limit. Among motorcycle riders, 26.6% had been drinking and 70.6% of these had BACs over the legal limit. The highest incidence of drinking was found among drivers of light trucks – 46.4% had been drinking and 90.7% of these had illegal BACs. Heavy truck and tractor-trailer drivers have a much lower frequency of alcohol involvement. Indeed, 0.0% of heavy truck drivers and 12.9% of tractor-trailer drivers had been drinking. Among those fatally injured tractor-trailer drivers who had been drinking, 50.0% had BACs over the legal limit.

Figure 3-6a
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 2012

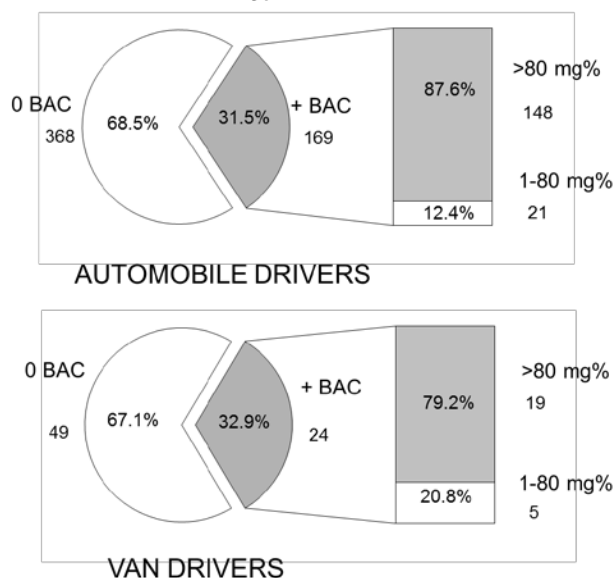


Figure 3-6b
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 2012

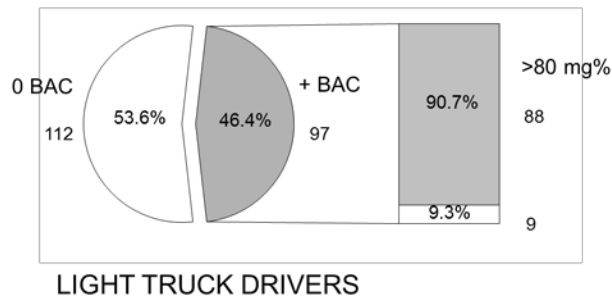
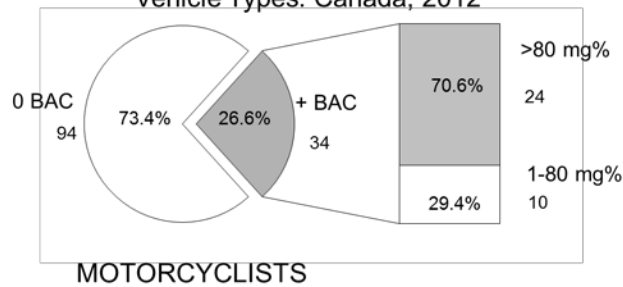
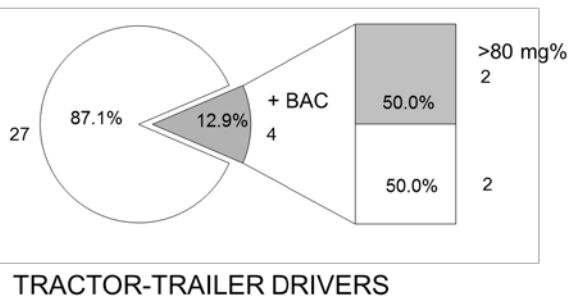
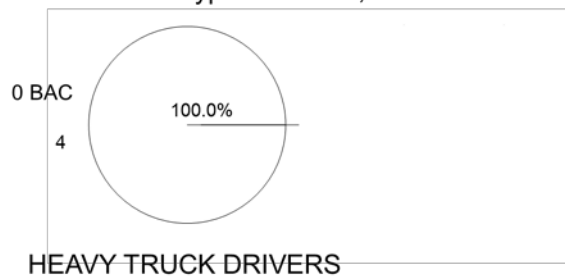
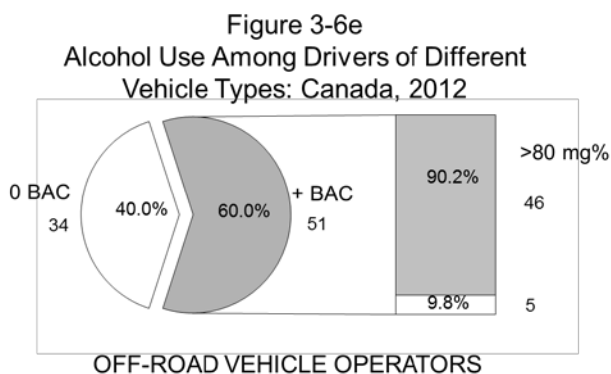
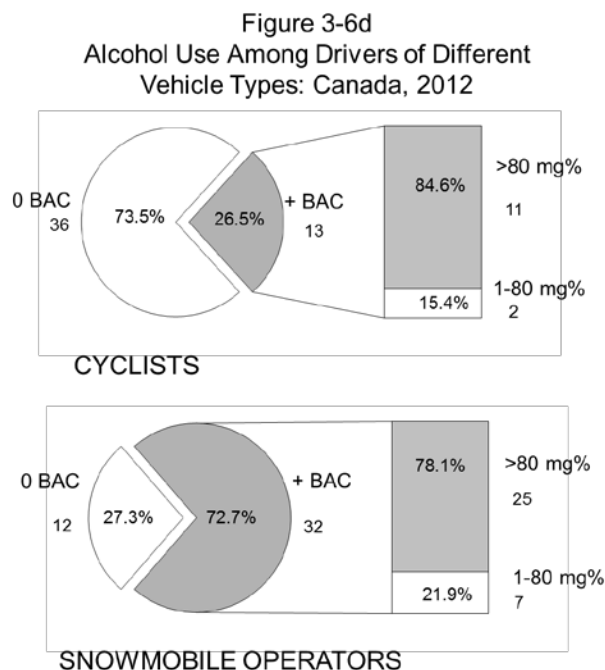


Figure 3-6c
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 2012



Figures 3-6d and 3-6e present similar information on the incidence of drinking among drivers operating recreational vehicles (results for these vehicle types are not included in Tables 3-2 or 3-3). As can be seen, the lowest incidence of drinking was found among bicyclists as only 26.5% of fatally injured bicyclists had been drinking at the time of the collision. Among those bicyclists who had been drinking, 84.6% had BACs over the legal limit. Among snowmobile drivers, 72.7% had been drinking and 78.1% had BACs over the legal

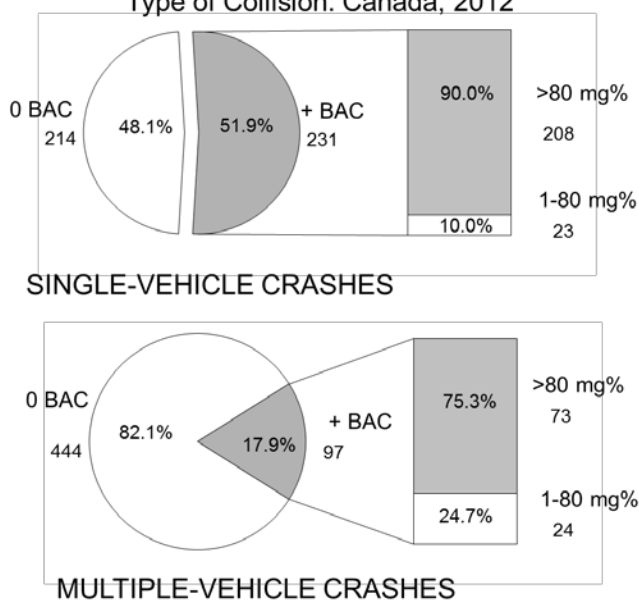
limit. Operators of off-road vehicles (ATVs, dirt bikes, etc.) were less likely than snowmobile drivers to have been drinking (60.0%) and 90.2% of these drinking drivers had BACs over the legal limit.



3.2.4 Collision differences. Less than half of all drivers killed (537 out of 1,172, or 45.8%) were involved in single-vehicle collisions but these crashes accounted for over two-thirds of the drivers who had been drinking or were legally impaired (70.4% and 74.0%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. As shown in Figure 3-7, over half of the drivers involved in single-vehicle crashes (51.9%) were positive for alcohol, compared to only 17.9% of those involved in multiple-vehicle collisions. Most drinking drivers in single-vehicle crashes had BACs over the legal limit (90.0%). Among drinking drivers in multiple-vehicle crashes, 75.3% had BACs over the legal limit.

Figure 3-7
Alcohol Use Among Drivers by
Type of Collision: Canada, 2012



3.2.5 Duration between crash and death time. Given that only 13 fatally injured drivers died more than 30 days after the collision, and only two of these drivers was tested for alcohol, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time cannot be performed.

3.3 Alcohol in fatally injured pedestrians

This section presents information on the presence of alcohol among pedestrians fatally injured as a result of being hit by a motor vehicle in Canada during 2012. *At the time this report was being prepared, 2012 coroner data from British Columbia were not available. For this reason, 2012 data reported in this section excludes this jurisdiction.* Table 3-4 shows the information by age group, gender and jurisdiction. The first column in the table shows the number of pedestrians killed. The next two columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests – this includes the percent of those tested who were positive for alcohol in each of five BAC levels.

During 2012, as shown by the totals at the bottom of the table, there were 333 pedestrians fatally injured; 218 (65.5%) of these pedestrians were tested for the presence of alcohol. Among tested pedestrians:

- > 60.1% showed no evidence of alcohol as 39.9% had been drinking;
- > 2.3% had BACs below 50 mg%;
- > 0.9% had BACs from 50 to 80 mg%;
- > 8.3% had BACs from 81 to 160%; and

> 28.4% had BACs over 160 mg%.

Thus, 39.9% of fatally injured pedestrians had been drinking and most of these had BACs over 80 mg%.

Table 3-4
Alcohol Use Among Fatally Injured Pedestrians: Canada, 2012*

Category of Pedestrian	Number of Pedestrians	Pedestrians Tested		Percent of Tested Pedestrians with BACs of:				
		Number	% of total	Zero	1-49	50-80	81-160	>160
<u>Age</u>								
<16	21	4	19.0	100.0	0.0	0.0	0.0	0.0
16-19	36	31	86.1	58.1	0.0	3.2	16.1	22.6
20-25	36	31	86.1	35.5	0.0	0.0	19.4	45.2
26-35	39	36	92.3	38.9	5.6	0.0	8.3	47.2
36-45	24	19	79.2	52.6	0.0	5.3	5.3	36.8
46-55	47	35	74.5	60.0	2.9	0.0	5.7	31.4
>55	130	62	47.7	85.5	3.2	0.0	1.6	9.7
<u>Gender</u>								
Male	214	150	70.1	52.7	2.7	1.3	6.7	36.7
Female	119	68	57.1	76.5	1.5	0.0	11.8	10.3
<u>Jurisdiction</u>								
Alberta	63	48	76.2	39.6	2.1	4.2	6.3	47.9
Saskatchewan	27	21	77.8	28.6	0.0	0.0	9.5	61.9
Manitoba	18	11	61.1	45.5	0.0	0.0	27.3	27.3
Ontario	150	92	61.3	70.7	3.3	0.0	3.3	22.8
Quebec	52	31	59.6	74.2	3.2	0.0	19.4	3.2
New Brunswick	8	6	75.0	100.0	0.0	0.0	0.0	0.0
Nova Scotia	8	4	50.0	100.0	0.0	0.0	0.0	0.0
Prince Edward Island	2	2	100.0	100.0	0.0	0.0	0.0	0.0
NL/NT**	5	3	60.0	33.3	0.0	0.0	33.3	33.3
TOTAL	333	218	65.5	60.1	2.3	0.9	8.3	28.4

* Excluding British Columbia.

* Newfoundland and Labrador and the Northwest Territories (NL/NT) have been aggregated to protect the identity of one of the pedestrians.

3.3.1 Age difference. Of all the fatally injured pedestrians, two-fifths (39.0%) were over 55 years of age (130 of the 333 pedestrian fatalities). The oldest pedestrians, however, accounted for a much smaller portion of the drinking pedestrians and those with BACs over 80 mg%. This is illustrated in Figure 3-8. The figure shows the percent of all drinking pedestrians accounted for by each age group. The bar on the left shows the percent of all fatally injured pedestrians with any evidence of alcohol accounted for by each age group. On the right is shown the percent of pedestrians with BACs over 80 mg% accounted for by each age group. Of all the fatally injured drinking pedestrians, 25.3% were aged 26-35; 23.0% were aged 20-25; 16.1% were aged 46-55; 14.9% were aged 16-19; and 10.3% were aged 36-45 and over 55.

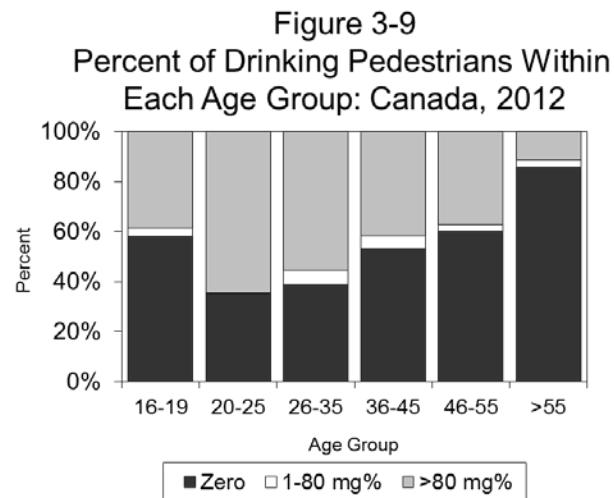
Of all the fatally injured pedestrians with BACs over 80 mg%, 25.0% were aged 20-25 and 26-35; 16.3% were aged 46-55; 15.0% were aged 16-19; 10.0% were aged 36-45; and 8.8% were over 55.

Figure 3-8
Percent of All Fatally Injured Drinking and Legally Impaired
Pedestrians Accounted for by Each Age Group: Canada, 2012

> 55	10.3	> 55	8.8
46-55	16.1	46-55	16.3
36-45	10.3	36-45	10.0
26-35	25.3	26-35	25.0
20-25	23.0	20-25	25.0
16-19	14.9	16-19	15.0
	Drinking		>80 mg%

Figure 3-9 presents the information in a slightly different manner. For each age group, the percent of pedestrians who were sober (zero BAC) is shown by the lower, dark portion of the bar; the percent who were positive for alcohol but whose BAC was less than or equal to 80 mg% is shown by the white section in the middle, and the percent with BACs over 80 mg% is shown by the upper, grey part of the bar.

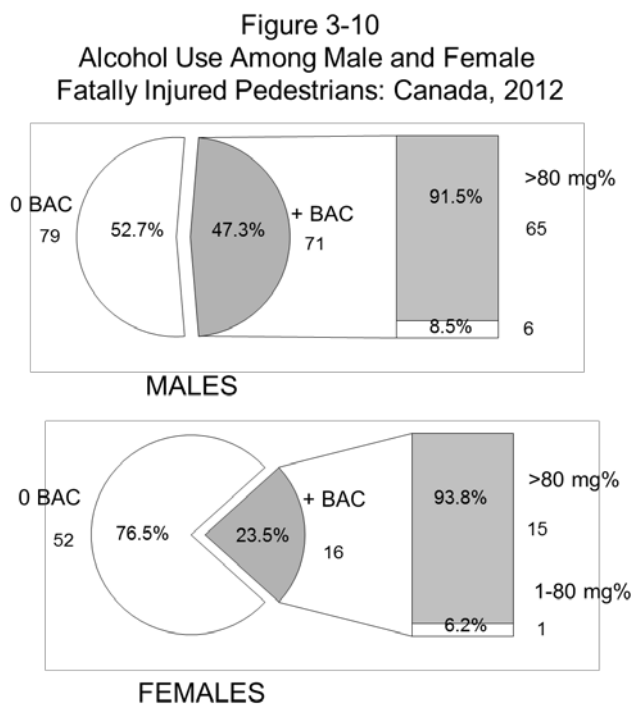
Fatally injured pedestrians age 26-35 were the most likely to have been drinking – 61.1% of pedestrians in this age group had been drinking. By contrast, only 14.5% of tested pedestrians over age 55 had been drinking.



3.3.2 Gender differences. Males account for four-fifths (81.6%) of all the fatally injured pedestrians who had been drinking, and 81.3% of all of the fatally injured pedestrians who had BACs over 80 mg%. Males dominate the picture because they account for 64.2% of the pedestrians who are killed (213 of the 332 fatalities are male).

Figure 3-10 summarizes the findings for alcohol use among fatally injured male and female pedestrians. The pie chart shows the proportion of those pedestrians who were sober (0 BAC) and those positive for alcohol (+ BAC). The bar to the right of the pie chart shows the distribution of alcohol levels found among those who had been drinking; the percent who had BACs above and below 80 mg%. Percentages are given inside the figures; the absolute number of cases is shown adjacent to the figure.

Among fatally injured male pedestrians, 47.3% had been drinking and 91.5% of these pedestrians had BACs over 80 mg%. Among fatally injured female pedestrians, 23.5% had been drinking and 93.8% had BACs over 80 mg%.



3.3.3 Jurisdictional differences. Pedestrians from Newfoundland and Labrador and the Northwest Territories have been regrouped into a single category (NL/NT) to protect the identity of an individual pedestrian. Of all the fatally injured pedestrians, 45.1% were killed in Ontario, 18.9% were killed in Alberta, and 15.6% were killed in Quebec. Alberta accounted for 33.3%, Ontario accounted for 31.0%, and Saskatchewan accounted for 17.2% of the fatally injured drinking pedestrians. Alberta accounted for 32.5% and Ontario accounted for 30.0% of the fatally injured pedestrians with BACs over 80 mg%. It should be noted that the figures for drinking and legally impaired pedestrians in Quebec are underestimated because they are based on tested pedestrians and the rate of testing for alcohol is low in this jurisdiction – e.g., only 59.6% of pedestrians fatally injured in Quebec were tested, compared to 100.0% in Prince Edward Island, 77.8% in Saskatchewan, and 76.2% in Alberta.

As shown in Table 3-4, the highest incidence of alcohol in fatally injured pedestrians, however, was in Saskatchewan (71.4%). The lowest incidence of alcohol in fatally injured pedestrians was in New Brunswick, Nova Scotia and Prince Edward Island where 0.0% had been drinking.

3.4 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in Canada, excluding Nunavut because data from this jurisdiction were not available at the time this report was being prepared. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle, at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., they noted that at least one drinking driver was involved in the crash.

Table 3-5
Drivers in Alcohol-Related Serious Injury Crashes:
Canada, 2012*

Canada, 2012				
Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	90	8	8.9	0.3
16-19	974	239	24.5	10.3
20-25	1929	504	26.1	21.8
26-35	2500	534	21.4	23.1
36-45	2139	341	15.9	14.7
46-55	2363	335	14.2	14.5
>55	2760	222	8.0	9.6
unknown	814	131	16.1	5.7
<u>Gender</u>				
Male	9302	1749	18.8	75.6
Female	3961	490	12.4	21.2
unknown	306	75	24.5	3.2
<u>Vehicle Type**</u>				
Auto	5104	962	18.8	53.1
Truck/Van	3588	591	16.5	32.6
Motorcycle	936	120	12.8	6.6
Tractor Trailer	368	50	13.6	2.8
Other Hwy. Vehicle	128	17	13.3	0.9
Off-Road	541	60	11.1	3.3
Unknown	56	12	21.4	0.7
<u>Collision Type</u>				
Single-Vehicle	4595	1662	36.2	71.8
Multiple-Vehicle	8974	652	7.3	28.2
TOTAL	13569	2314	17.1	100.0

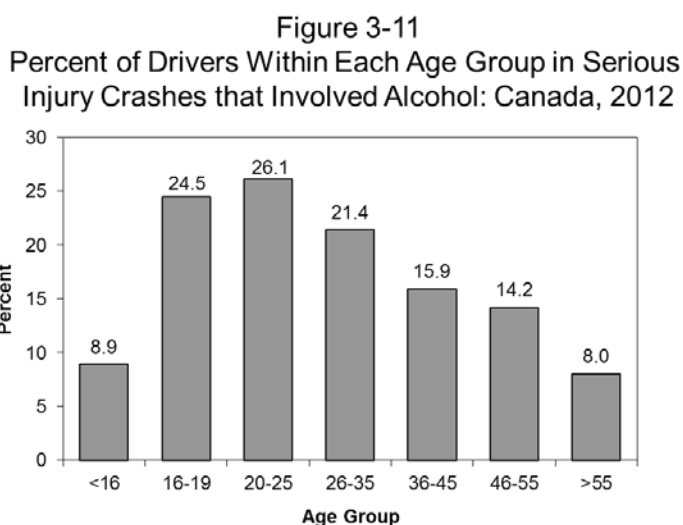
* Excluding data from Nunavut.

** Vehicle type section excludes Quebec since this jurisdiction has grouped automobiles and light trucks together in its collision data since March 2010.

The results are shown in Table 3-5 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 13,569 drivers were involved in crashes in which someone was seriously injured. Among these, 17.1% were alcohol-related crashes.

3.4.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 23.1% were aged 26-35; 21.8% were aged 20-25; and 14.7% were aged 36-45. Drivers under the age of 16 accounted for only 0.3% of all those involved in alcohol-related crashes. Figure 3-11 shows for each age group the percent of drivers who were in a serious injury crash that involved alcohol. The highest incidence of alcohol involvement was found for drivers aged 20-25 (26.1%). The lowest incidence of involvement in alcohol-related crashes was found for the youngest and oldest age groups of drivers as 8.9% of drivers under 16 and 8.0% of drivers over 55 were in a serious injury crash that involved alcohol.



3.4.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 75.6% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (18.8% and 12.4%, respectively).

3.4.3 Type of vehicle driven. The numbers and percentages in the vehicle type section exclude Quebec since this jurisdiction has grouped automobiles and light trucks together in its collision data since March 2010. Of all the drivers involved in alcohol-related serious injury crashes, 53.1% were automobile drivers and 32.6% were truck/van drivers.

Almost one out of five serious injury crashes involving automobile drivers were alcohol related (18.8%). The percentage of involvement in alcohol-related serious injury crashes was 16.5% for truck/van drivers, 13.6% for tractor-trailer drivers, 13.3% for drivers of other highway vehicles, and 12.8% for motorcycle riders. The lowest incidence of involvement in alcohol-related serious injury crashes was found among off-road vehicle drivers (11.1%).

3.4.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 71.8% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes

was also found among drivers in single-vehicle crashes (36.2%) compared to only 7.3% for drivers involved in multiple-vehicle crashes.

3.5 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in Canada during 2012. *At the time this report was being prepared, 2012 coroner data from British Columbia were not available. For this reason, 2012 data reported in this section excludes this jurisdiction.* Table 3-6 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time and death time (within 12 months vs. within 30 days of the collision). The data are presented for drivers of the principal types of vehicles (i.e., automobiles, trucks, vans, motorcycles, tractor-trailers) who died in public road and off-road collisions.

The first column in the table shows the number of drivers killed. The next two columns show the number and percent of these victims who were tested for drugs. The remaining columns provide information on the results of the drug tests – this includes the number and percent of those tested who were positive for drugs.

As can be seen, in 2012, 77.4% of fatally injured drivers in Canada were tested for drug use. Among fatally injured tested drivers, 363 out of 907 (40.0%) were positive for drugs.

3.5.1 Age differences. Fatally injured drivers aged 26-35 were the most likely to have been positive for drugs – 45.7% of drivers in this age group were positive for drugs. By contrast, 31.2% of tested drivers over 55 were positive for drugs.

3.5.2 Gender differences. Males dominate the picture as they account for 79.9% of all the fatally injured drivers who were positive for drugs. Males dominate the picture largely because they account for 77.4% of the drivers who are killed (907 of the 1,172 fatalities are males). Fatally injured male drivers were more likely to have been positive for drugs than female drivers (40.8% and 37.1%, respectively).

3.5.3 Vehicle differences. Within each of the principal vehicle types, 47.5% of fatally injured light truck drivers, 40.3% of van drivers, 38.4% of automobile drivers, and 36.8% of motorcyclists tested positive for drugs. Among drivers of principal vehicle types, the lowest percentage of drivers testing positive for drugs were heavy truck drivers (0.0%) and tractor trailer drivers (34.5%).

3.5.4 Collision differences. Almost half of the drivers who were killed in single-vehicle collisions (48.2%) tested positive for drugs compared to 33.2% of those involved in multiple vehicle crashes.

3.5.5 Duration between crash and death time. Given that only 13 fatally injured drivers died more than 30 days after the collision, and only three of these drivers were tested for drugs, a comparison of drug use among drivers based on differences in the duration between crash time and death time cannot be performed.

Table 3-6
Drug Use Among Fatally Injured Drivers of Highway
Vehicles: Canada, 2012 (Excluding British Columbia)

Category of Driver	Number of Drivers*	Drivers Tested		Positive for Drugs	
		Number	% of total	Number	% of total
<u>Age</u>					
<20**	86	65	75.6	29	44.6
20-25	185	157	84.9	66	42.0
26-35	196	162	82.7	74	45.7
36-45	162	134	82.7	57	42.5
46-55	195	155	79.5	64	41.3
>55	348	234	67.2	73	31.2
<u>Gender</u>					
Male	907	710	78.3	290	40.8
Female	265	197	74.3	73	37.1
<u>Vehicle Type</u>					
Automobile	659	489	74.2	188	38.4
Motorcycle	155	114	73.5	42	36.8
Tractor Trailer	33	29	87.9	10	34.5
Heavy Truck ¹	4	4	100.0	0	0.0
Van	82	67	81.7	27	40.3
Light Truck ²	232	200	86.2	95	47.5
Other Truck ³	4	2	50.0	1	50.0
Other Hwy. Vehicle ⁴	3	2	66.7	0	0.0
<u>Collision Type</u>					
Single-Vehicle	538	413	76.8	199	48.2
Multiple-Vehicle	634	494	77.9	164	33.2
<u>Duration Between Crash and Death Time</u>					
Within 30 Days	1159	904	78.0	361	39.9
> 30 Days	13	3	23.1	2	66.7
TOTAL	1172	907	77.4	363	40.0

* Excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles.

** Drivers in two age groups have been aggregated to ensure that an individual will not be identified.

¹ Trucks over 4500 kg.

² e.g., pickup trucks.

³ Motorhomes, utility vehicles, plows and trucks of unknown type.

⁴ Emergency vehicles and buses.

Note: The vehicle types that appear in the shaded area correspond to the truck/van category used in the jurisdictional sections of this report.

3.5.6 Types of drugs detected. In Table 3-7, the types of drugs found among fatally injured drivers testing positive for drugs is shown. Among the 363 fatally injured drivers who tested positive for drugs, 45.5% tested positive for cannabis. Other categories of drugs found in fatally injured drivers testing positive for drugs were CNS depressants (36.9%), narcotic analgesics (24.8%), CNS stimulants (23.4%), dissociative anesthetics (1.9%), and hallucinogens (0.3%).

Table 3-7
Drug Use Among Fatally Injured Drivers of
Highway Vehicles: Canada, 2012

Prevalence of Drug Use				
Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
1172	907	(77.4)	363	(40.0)

Categories of Drugs Found Among Drivers Testing Positive		
Drug Category	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
Cannabis	165	(45.5)
CNS Depressants	134	(36.9)
Narcotic Analgesics	90	(24.8)
CNS Stimulants	85	(23.4)
Dissociative Anesthetics	7	(1.9)
Hallucinogens	1	(0.3)
Inhalants	0	(0.0)

* Percentages will not add up to 100% due to multiple drug types found in blood samples of some drivers.

3.6 Trends in alcohol and drug-impaired driving

The previous sections examined four indicators of the alcohol-crash problem: the number and percent of people who died in crashes that involved alcohol; the number and percent of fatally injured drivers who had been drinking; the number and percent of fatally injured pedestrians who had been drinking; and the number and percent of drivers in serious injury crashes that involved alcohol. The drug use among fatally injured drivers indicator was also examined. This section examines changes in these four indicators of the alcohol-crash problem and one indicator of the drug-crash problem. Findings for these indicators of the alcohol-crash problem and drug-crash problem in the 2011-2012 period are compared with those taken from the 2006-2010 baseline period.

3.6.1 Deaths in alcohol-related crashes: 1995-2012. As mentioned earlier in Section 3.1, at the time this report was being prepared, 2012 coroner data from British Columbia were not available. *For this reason, trend data reported in this section excludes this jurisdiction.* Table 3-8 and Figure 3-12 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 3.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

As shown in the table and figure, the number of deaths in crashes that involved a drinking driver generally dropped from 1,054 to 593 in 2009, rose to 622 in 2010, decreased to 553 in 2011, and rose slightly to 563

in 2012. The percentage of alcohol-related fatalities generally decreased from 37.2% in 1995 to a low of 28.6% in 2005, eventually rose to 33.8% in 2010, and decreased to 29.9% in 2012.

As shown at the bottom of the table, during the 2006-2010 baseline period there was an average of 671 fatalities involving a drinking driver and they accounted for 32.7% of all fatalities. This means that the percent of fatalities involving a drinking driver decreased by 7.0% from 32.7% in the baseline period (2006-2010) to 30.4% in the 2011-2012 period. And in terms of the number of persons killed in crashes involving a drinking driver, there has been a 16.8% decrease from an average of 671 in the baseline period (2006-2010) to 558 in the 2011-2012 period.

Table 3-8
Number* and Percent of Motor Vehicle Deaths Involving a**
Drinking Driver: Canada, 1995-2012***

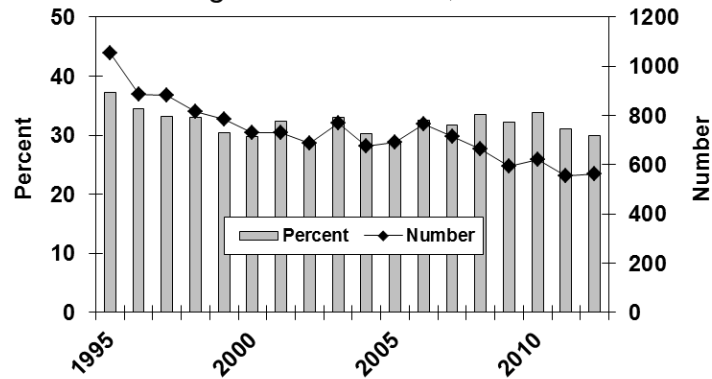
Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths Number	% of total	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	2832	1054	37.2	2785	1041	37.4
1996	2573	885	34.4	2540	876	34.5
1997	2648	880	33.2	2603	871	33.5
1998	2469	815	33.0	2415	803	33.3
1999	2576	783	30.4	2534	771	30.4
2000	2452	731	29.8	2388	718	30.1
2001	2257	731	32.4	2181	716	32.8
2002	2399	688	28.7	2293	667	29.1
2003	2327	768	33.0	2272	752	33.1
2004	2240	677	30.2	2184	663	30.4
2005	2409	689	28.6	2358	681	28.9
2006	2345	763	32.5	2303	757	32.9
2007	2250	713	31.7	2205	705	32.0
2008	1986	664	33.4	1951	655	33.6
2009	1842	593	32.2	1791	583	32.6
2010	1841	622	33.8	1806	614	34.0
2011	1787	553	30.9	1765	549	31.1
2012	1881	563	29.9	1850	558	30.2
2006-2010 baseline	2053	671	32.7	2011	663	33.0
2011-2012 period	1834	558	30.4	1807	554	30.7

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.

*** excludes British Columbia.

Figure 3-12
Number and Percent of Deaths Involving
a Drinking Driver: Canada, 1995-2012



3.6.2 Alcohol use among fatally injured drivers: 1987-2012. As mentioned earlier in Section 3.2, at the time this report was being prepared, 2011 and 2012 coroner data from British Columbia were not available. For this reason, trend data reported in this section excludes this jurisdiction. Data on alcohol use among fatally injured drivers over the 26-year period from 1987 to 2012 are shown in Table 3-9. Trends are illustrated in Figure 3-13 which shows changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol – represented by the white area; (2) had BACs below the legal limit – shown by the light grey area; and (3) had BACs over the legal limit – the dark grey area.

The number of fatally injured drivers with BACs over the legal limit (> 80 mg%) generally declined from 618 to 317 between 1987 and 2004, rose to 373 in 2005, fell to a low of 260 in 2011, and rose again to 280 in 2012. The percent of fatally injured drivers with BACs over the legal limit generally decreased from 43.3% to 27.7% between 1987 and 2004, rose to 32.5% in 2009, declined again to 28.1% in 2011, and rose slightly to 28.4% in 2012.

By contrast, the number of fatally injured drivers with zero BACs has fluctuated over this 26-year period, from 665 in 1987 to a high of 873 in 1999. In 2012, there were 658 fatally injured drivers with zero BACs. The percent of fatally injured drivers with zero BACs generally increased from 46.6% to 67.6% between 1987 and 1999, remained stable until 2007, decreased to 61.8% in 2009, and rose again to 66.8% in 2012.

The number of fatally injured drivers with BACs between 1-80 mg% generally declined from 145 to 69 between 1987 and 2005, rose to 85 in 2007, and decreased to 47 in 2012. The percent of fatally injured drivers with BACs between 1 and 80 mg% generally dropped from 10.2% in 1987 to 5.5% in 2005, rose in 2007 (7.2%), and decreased to its lowest level in 2012 (4.8%).

When compared to the 2006-2010 baseline period shown at the bottom of Table 3-9, the percentage of fatally injured drivers with zero BACs in the 2011-2012 period increased by 5.9% (from 62.6% to 66.3%). Among drivers with BACs from 1-80 mg%, there was a 17.2% decrease (from 6.4% to 5.3%). And among those with BACs over 80 mg%, there was an 8.4% decrease (from 30.9% to 28.3%).

Table 3-9
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Canada, 1987-2012

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	1942	1428	73.5	665	46.6	145	10.2	618	43.3
1988	1994	1528	76.6	745	48.8	168	11.0	615	40.2
1989	2084	1599	76.7	849	53.1	120	7.5	630	39.4
1990	1839	1441	78.4	799	55.4	122	8.5	520	36.1
1991	1772	1359	76.7	699	51.4	115	8.5	545	40.1
1992	1715	1345	78.4	714	53.1	108	8.0	523	38.9
1993	1771	1430	80.7	811	56.7	106	7.4	513	35.9
1994	1591	1326	83.3	747	56.3	105	7.9	474	35.7
1995	1637	1368	83.6	794	58.0	109	8.0	465	34.0
1996	1480	1215	82.1	727	59.8	80	6.6	408	33.6
1997	1547	1252	80.9	784	62.6	94	7.5	374	29.9
1998	1469	1211	82.4	747	61.7	73	6.0	391	32.3
1999	1552	1291	83.2	873	67.6	78	6.0	340	26.3
2000	1453	1206	83.0	785	65.1	77	6.4	344	28.5
2001	1403	1174	83.7	742	63.2	69	5.9	363	30.9
2002	1448	1217	84.0	809	66.5	71	5.8	337	27.7
2003	1429	1219	85.3	752	61.7	75	6.2	392	32.2
2004	1350	1143	84.7	754	66.0	72	6.3	317	27.7
2005	1497	1246	83.2	804	64.5	69	5.5	373	29.9
2006	1490	1237	83.0	784	63.4	84	6.8	369	29.8
2007	1408	1179	83.7	747	63.4	85	7.2	347	29.4
2008	1301	1127	86.6	698	61.9	67	5.9	362	32.1
2009	1195	988	82.7	611	61.8	56	5.7	321	32.5
2010	1158	979	84.5	609	62.2	62	6.3	308	31.5
2011	1123	926	82.5	611	66.0	55	5.9	260	28.1
2012	1172	986	84.1	658	66.7	47	4.8	281	28.5
2006-2010 baseline	1310	1102	(84.1)	690	(62.6)	71	(6.4)	341	(30.9)
2011-2012 period	1147	956	(83.3)	634	(66.3)	51	(5.3)	271	(28.3)

* excludes British Columbia.

Figure 3-13
Trends in Alcohol Use Among Driver
Fatalities: Canada, 1987-2012

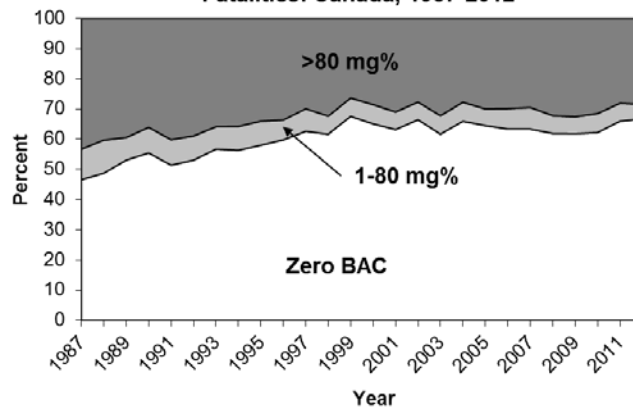


Table 3-10 and Figure 3-14 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2012. These results also differ from those reported above for two reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 3-2). Second, drivers are grouped in only two BAC categories: zero and positive.

As can be seen at the bottom of Table 3-10, the percentage of fatally injured drivers testing positive for alcohol from 2006-2010, the baseline period, is 37.3%. In the 2011-2012 period, 33.7% of fatally injured drivers tested positive for alcohol, which represents a 9.7% decrease from the baseline period.

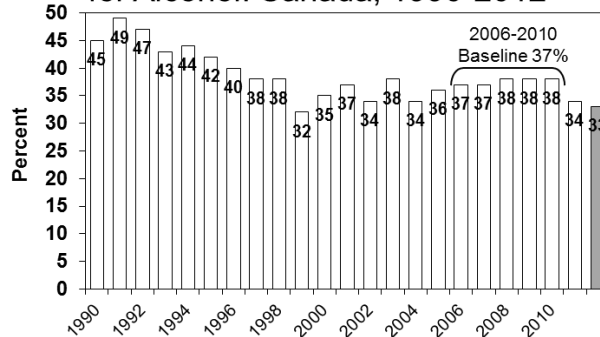
Table 3-10
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
Canada, 1990-2012**

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	1827	1011	(55.3)	816	(44.7)
1991	1765	907	(51.4)	858	(48.6)
1992	1715	909	(53.0)	806	(47.0)
1993	1771	1003	(56.6)	768	(43.4)
1994	1591	896	(56.3)	695	(43.7)
1995	1637	949	(58.0)	688	(42.0)
1996	1480	883	(59.7)	597	(40.3)
1997	1547	966	(62.4)	581	(37.6)
1998	1469	905	(61.6)	564	(38.4)
1999	1552	1049	(67.6)	503	(32.4)
2000	1453	945	(65.0)	508	(35.0)
2001	1404	888	(63.2)	516	(36.8)
2002	1447	962	(66.5)	485	(33.5)
2003	1429	882	(61.7)	547	(38.3)
2004	1350	891	(66.0)	459	(34.0)
2005	1496	965	(64.5)	531	(35.5)
2006	1490	944	(63.4)	546	(36.6)
2007	1408	892	(63.4)	516	(36.6)
2008	1301	806	(62.0)	495	(38.0)
2009	1195	740	(61.9)	455	(38.1)
2010	1158	723	(62.4)	435	(37.6)
2011	1123	739	(65.8)	384	(34.2)
2012	1172	783	(66.8)	389	(33.2)
2006-2010 baseline	1310	821	(62.7)	489	(37.3)
2011-2012 period	1147	761	(66.3)	386	(33.7)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol

** excludes British Columbia

Figure 3-14
Percent of Fatally Injured Drivers* Positive
for Alcohol: Canada, 1990-2012



* Numbers are estimates based on the BAC distribution of drivers tested for alcohol

3.6.3 Fatally injured pedestrians: 1987-2012. As mentioned earlier in Section 3.3, at the time this report was being prepared, 2011 and 2012 coroner data from British Columbia were not available. *For this reason, trend data reported in this section excludes this jurisdiction.* Data on alcohol use among fatally injured pedestrians over the 26-year period from 1987 to 2012 are shown in Table 3-11. Trends are illustrated in Figure 3-15 which shows changes in the percent of fatally injured pedestrians who: (1) showed no evidence of alcohol – represented by the white area; (2) had BACs below the legal limit – shown by the light grey area; and (3) had BACs over 80 mg% – the dark grey area.

The number of fatally injured pedestrians with a BAC over 80 mg% generally declined from a high of 135 in 1987 to 56 in 2008, rose to 77 in 2010, decreased to 43 in 2011, and rose again to 80 in 2012. The percent of fatally injured pedestrians with a BAC over 80 mg% generally declined from 40.4% in 1987 to 31.7% in 2007, rose to 41.8% in 2010, decreased to 35.1% in 2011, and rose again in 2012 (36.7%).

The number of fatally injured pedestrians with no evidence of alcohol generally decreased from 174 to 94 between 1987 and 2009, and rose again to 131 in 2012. The percent of fatally injured pedestrians with zero BACs has ranged from about 50% to 60% over this 26-year period. In 1987, 52.1% of fatally injured pedestrians showed no evidence of alcohol compared to 60.1% in 2012.

The number of fatally injured pedestrians with BACs between 1-80 mg% fluctuated over this 26-year period from 25 in 1987 to a low of six in 2010, increased to 14 in 2011, and decreased again to seven in 2012. The percent of fatally injured drivers with BACs between 1-80 mg% also fluctuated between 7.5% in 1987 and 3.2% in 2010, rose to 7.4% in 2011, and declined to a low of 3.2% in 2012.

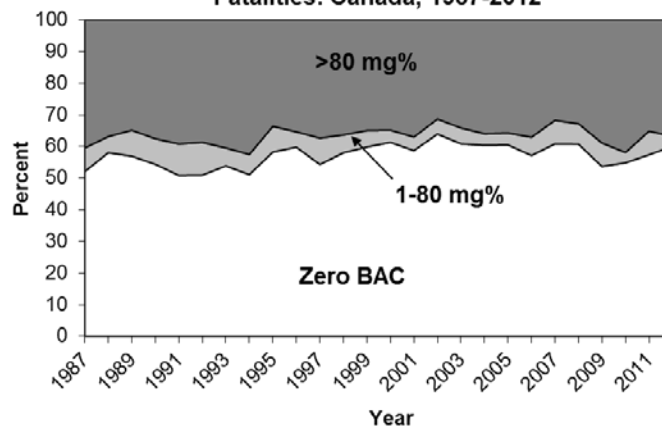
When compared to the 2006-2010 baseline period shown at the bottom of Table 3-11, the percentage of fatally injured pedestrians with zero BACs in the 2011-2012 period increased by 2.1% (from 57.4% to 58.6%). Among pedestrians with BACs from 1-80 mg%, there was an 8.4% decrease (from 5.9% to 5.4%). And among those with BACs over 80 mg%, there was a 1.9% decrease (from 36.7% to 36.0%).

Table 3-11
Alcohol Use Among Fatally Injured Pedestrians:
Canada*, 1987-2012

Year	Number of Pedestrians*	Pedestrians Tested		Pedestrians Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	649	334	51.5	174	52.1	25	7.5	135	40.4
1988	650	296	45.5	172	58.1	15	5.1	109	36.8
1989	574	293	51.0	167	57.0	24	8.2	102	34.8
1990	571	272	47.6	148	54.4	22	8.1	102	37.5
1991	511	281	55.0	143	50.9	28	10.0	110	39.1
1992	444	251	56.5	128	51.0	26	10.4	97	38.6
1993	474	245	51.7	132	53.9	14	5.7	99	40.4
1994	428	219	51.2	112	51.1	14	6.4	93	42.5
1995	424	259	61.1	151	58.3	21	8.1	87	33.6
1996	469	269	57.4	161	59.9	13	4.8	95	35.3
1997	436	252	57.8	137	54.4	21	8.3	94	37.3
1998	419	248	59.2	144	58.1	14	5.6	90	36.3
1999	402	232	57.7	139	59.9	12	5.2	81	34.9
2000	355	207	58.3	127	61.4	8	3.9	72	34.8
2001	345	211	61.2	124	58.8	9	4.3	78	37.0
2002	344	211	61.3	135	64.0	10	4.7	66	31.3
2003	371	220	59.3	134	60.9	11	5.0	75	34.1
2004	335	220	65.7	133	60.5	8	3.6	79	35.9
2005	339	213	62.8	129	60.6	8	3.8	76	35.7
2006	339	208	61.4	119	57.2	12	5.8	77	37.0
2007	344	202	58.7	123	60.9	15	7.4	64	31.7
2008	302	171	56.6	104	60.8	11	6.4	56	32.7
2009	314	175	55.7	94	53.7	13	7.4	68	38.9
2010	295	184	62.4	101	54.9	6	3.3	77	41.8
2011	324	188	58.0	108	57.4	14	7.4	66	35.1
2012	333	218	65.5	131	60.1	7	3.2	80	36.7
2006-2010 baseline	319	188	(58.9)	108	(57.4)	11	(5.9)	69	(36.7)
2011-2012 period	329	203	(61.7)	119	(58.6)	11	(5.4)	73	(36.0)

* excludes British Columbia

Figure 3-15
Trends in Alcohol Use Among Pedestrian
Fatalities: Canada, 1987-2012



3.6.4 Drivers in serious injury crashes: 2005-2012. Table 3-12 and Figure 3-16 show information on drivers involved in alcohol-related serious injury crashes. For most jurisdictions, serious injury collision data are available as early as 1995. However, these data were not available for British Columbia until 2005 and the Yukon until 1998. Thus, in order to provide data for the greatest number of cases, the data shown in this

table cover the 2005-2012 period. However, there are still some jurisdictions that did not have data available at the time this report was being prepared. These jurisdictions include Newfoundland and Labrador (2009-2011), and Nunavut (2011-2012). Thus Table 3-12 and Figure 3-16 exclude these two jurisdictions.

As can be seen, the incidence of alcohol-involvement in serious crashes has declined only slightly. Between 2005 and 2006 the number of drivers in serious injury crashes that involved alcohol rose from 3,673 to 3,768. This number gradually decreased to 2,282 in 2011 and remained at this level in 2012. The number of drivers in alcohol-related serious injury crashes from 2009 to 2012, however, is an underestimate since data exclude the following jurisdictions- Newfoundland and Labrador and Nunavut. The percentage of drivers in serious injury crashes that involved alcohol generally rose from 19.1% to 20.3% in 2006, decreased in 2008 (19.8%), rose in 2009 (20.1%), and decreased until 2012 (17.0%).

In the baseline period, an average of 19.9% of drivers in serious injury crashes were in an alcohol-involved crash. In the 2011-2012 period, the incidence of drivers in alcohol-involved crashes declined to 17.2%, a decrease of 13.6%.

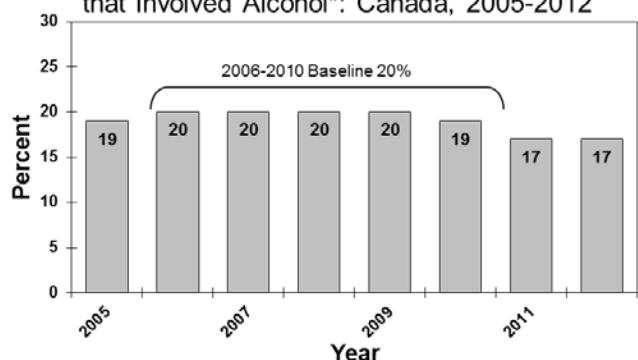
Table 3-12
Number and Percent of All Drivers in Serious Injury Crashes*
that Involved Alcohol: Canada, 2005-2012**

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
2005	19183	3673	(19.1)
2006	18587	3768	(20.3)
2007	17083	3464	(20.3)
2008	15687	3104	(19.8)
2009	14488	2912	(20.1)
2010	14471	2731	(18.9)
2011	13149	2282	(17.4)
2012	13395	2282	(17.0)
2006-2010 baseline	16063	3196	(19.9)
2011-2012 period	13272	2282	(17.2)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

** Excludes data from Newfoundland and Labrador and Nunavut.

Figure 3-16
Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol*: Canada, 2005-2012



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 3-13 and Figure 3-17 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those reported earlier in Section 3-4. Certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles – are excluded. And similar to Table 3-12, this table does not include 2012 data for Newfoundland and Labrador and Nunavut.

As can be seen, the incidence of alcohol-involvement in serious crashes has declined slightly. Between 2005 and 2006 the number of drivers of highway vehicles in serious injury crashes that involved alcohol rose from 3,493 to 3,600. This number gradually decreased to 2,159 in 2011 and rose slightly to 2,168 in 2012. Similar to Table 3-12, the number of drivers in alcohol-related serious injury crashes from 2009 to 2012 is an underestimate since data exclude Newfoundland and Labrador and Nunavut. The percentage of drivers of highway vehicles in serious injury crashes that involved alcohol rose from 19.5% in 2005 to 20.8% in 2007 before generally decreasing to 17.3% in 2012. In the baseline period (2006-2010), an average of 20.2% of drivers in serious injury crashes were in an alcohol-involved crash. In the 2011-2012 period, the incidence of drivers in alcohol-involved crashes was 17.3%, a 13.3% decrease.

Table 3-13

Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: Canada, 2005-2012***

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
2005	17873	3493	(19.5)
2006	17452	3600	(20.6)
2007	15986	3331	(20.8)
2008	14579	2934	(20.1)
2009	13498	2743	(20.3)
2010	13367	2537	(19.0)
2011	12223	2159	(17.7)
2012	12507	2168	(17.3)
2006-2010 baseline	14976	3029	(20.2)
2011-2012 period	12365	2164	(17.5)

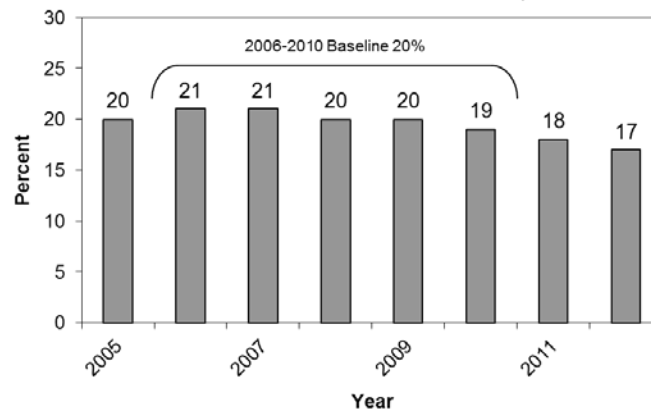
* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement.

*** Excludes data from Newfoundland and Labrador and Nunavut.

Figure 3-17

Percent of Drivers of Highway Vehicles in Serious Injury Crashes that Involved Alcohol: Canada, 2005-2012



3.6.5 Drug use among fatally injured drivers: 2000-2012. As mentioned earlier in Section 3.5, at the time this report was being prepared, 2011 and 2012 coroner data from British Columbia were not available. *For this reason, trend data reported in this section excludes this jurisdiction.* Data on drug use among fatally injured drivers of highway vehicles over the 13-year period from 2000 to 2012 are shown in Table 3-14. Trends are illustrated in Figure 3-18 which shows changes in the percent of fatally injured drivers who tested positive for drugs.

Unlike trends in the number of fatally injured drivers testing positive for alcohol, the corresponding trends in the number of drivers testing positive for drugs is more difficult to analyse since testing rates for drugs are less consistent than those for alcohol. For example, in 2000, only 36.3% of fatally injured drivers were tested for drugs compared to 77.4% in 2012.

The percent of fatally injured drivers testing positive for drugs rose from 34.7% in 2000 to 41.5% in 2002, stabilized at 36.1% in 2009, rose to 40.8% in 2011, and declined to 40.0% in 2012.

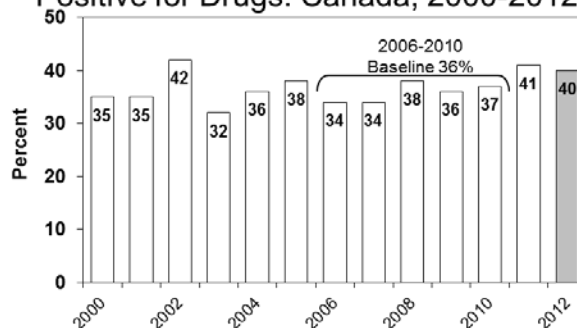
During the baseline period (2006-2010), an average of 35.6% of fatally injured drivers tested positive for drugs. In the 2011-2012 period, the incidence of fatally injured drivers testing positive for drugs rose to 40.4%, a 13.4% increase.

Table 3-14
Drug Use Among Fatally Injured Drivers* of Highway Vehicles:
Canada, 2000-2012

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative	(% Tested)	Positive	(% Tested)
2000	1453	528	36.3	345	65.3	183	34.7
2001	1403	582	41.5	376	64.6	206	35.4
2002	1448	639	44.1	374	58.5	265	41.5
2003	1429	636	44.5	435	68.4	201	31.6
2004	1350	520	38.5	331	63.7	189	36.3
2005	1497	655	43.8	404	61.7	251	38.3
2006	1490	842	56.5	555	65.9	287	34.1
2007	1408	865	61.4	573	66.2	292	33.8
2008	1301	747	57.4	466	62.4	281	37.6
2009	1195	670	56.1	428	63.9	242	36.1
2010	1158	644	55.6	405	62.9	239	37.1
2011	1123	818	72.8	484	59.2	334	40.8
2012	1172	907	77.4	544	60.0	363	40.0
2006-2010 baseline	1310	753	57.5	485	64.4	268	35.6
2011-2012 period	1147	863	75.2	514	59.6	349	40.4

* excludes British Columbia.

Figure 3-18
Percent of Fatally Injured Drivers
Positive for Drugs: Canada, 2000-2012



* Numbers are estimates based on the BAC distribution of drivers tested for alcohol

4.0 BRITISH COLUMBIA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in British Columbia. It describes data on:

- > people who were killed in alcohol-related crashes (Section 4.1);
- > alcohol use among fatally injured drivers (Section 4.2);
- > drivers involved in alcohol-related serious injury crashes (Section 4.3);
- > drug use among fatally injured drivers (Section 4.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 4.5).

4.1 Deaths in alcohol-related crashes

Table 4-1 presents information on people who died in alcohol-related crashes in British Columbia during 2010 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. *At the time this report was being prepared, 2011 and 2012 coroner data from British Columbia were not available. For this reason, 2010 data will be reported in this section.* Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, it can be seen that among persons dying within 12 months of the collision, 26 people aged 16-19 were killed in motor vehicle crashes in British Columbia during 2010. And, in 25 cases (96.2%) it was possible to determine if alcohol was a factor in the crash. The next column shows the number of people killed in crashes that were known to be alcohol-involved. For example, 15 people aged 16-19 died in alcohol-related crashes in British Columbia during 2010. The next column expresses this as a percentage – i.e., 60.0% of the 16-19 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 16-19 year olds represent 10.5% of all the people killed in alcohol-related crashes in British Columbia during 2010.

An examination of the section for persons dying within 30 days of the collision shows that 25 persons aged 16-19 died in motor vehicle crashes. In 24 of these cases (96.0%), it was possible to determine if alcohol was a factor in the crash. Among these persons, 15 (62.5%) were alcohol-related deaths. And 16-19 year olds accounted for 10.7% of people dying in alcohol-related crashes.

The totals at the bottom of the table provide a summary. As can be seen, 387 persons died within 12 months of a motor vehicle crash in British Columbia during 2010. In 365 (94.3%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 143 (39.2%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (387 x .392) it can be estimated that *in British Columbia during 2010, 152 persons died in alcohol-related crashes within 12 months of the collision.*

Among the 373 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 94.4% of the cases. Of these known cases, 140 (39.8%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (373 x .398) it can be estimated that *in British Columbia during 2010, 148 persons died in alcohol-related crashes within 30 days of the collision.*

Table 4-1
Deaths in Alcohol-Related Crashes: British Columbia, 2010

Persons Dying Within 12 Months of Collision							Persons Dying Within 30 Days of Collision						
Category of Victim	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			
		No.	% of total	No.	% of known	% of all ARDs		No.	% of total	No.	% of known	% of all ARDs	
<u>Age Group</u>													
<16	17	15	88.2	2	13.3	1.4	16	14	87.5	1	7.1	0.7	
16-19	26	25	96.2	15	60.0	10.5	25	24	96.0	15	62.5	10.7	
20-25	39	38	97.4	23	60.5	16.1	37	36	97.3	21	58.3	15.0	
26-35	59	57	96.6	35	61.4	24.5	58	56	96.6	35	62.5	25.0	
36-45	51	50	98.0	23	46.0	16.1	49	49	100.0	23	46.9	16.4	
46-55	75	73	97.3	29	39.7	20.3	74	72	97.3	29	40.3	20.7	
>55	120	107	89.2	16	15.0	11.2	114	101	88.6	16	15.8	11.4	
<u>Gender</u>													
Male	256	244	95.3	103	42.2	72.0	246	234	95.1	100	42.7	71.4	
Female	131	121	92.4	40	33.1	28.0	127	118	92.9	40	33.9	28.6	
<u>Victim Type</u>													
Driver/ Operator	229	216	94.3	80	37.0	55.9	222	210	94.6	78	37.1	55.7	
Passenger	95	89	93.7	39	43.8	27.3	95	89	93.7	39	43.8	27.9	
Pedestrian	63	60	95.2	24	40.0	16.8	56	53	94.6	23	43.4	16.4	
<u>Vehicle Occupied</u>													
Automobiles	155	144	92.9	60	41.7	42.0	154	143	92.9	60	42.0	42.9	
Trucks/Vans	103	99	96.1	38	38.4	26.6	100	96	96.0	37	38.5	26.4	
Motorcycles	37	36	97.3	11	30.6	7.7	36	35	97.2	11	31.4	7.9	
Other Hwy Vehicles	12	11	91.7	1	9.1	0.7	11	11	100.0	1	9.1	0.7	
Off-road Vehicles	17	15	88.2	9	60.0	6.3	16	14	87.5	8	57.1	5.7	
(Pedestrians)	63	60	95.2	24	40.0	16.8	56	53	94.6	23	43.4	16.4	
<u>Collision Location</u>													
Public Road	375	354	94.4	136	38.4	95.1	361	341	94.5	133	39.0	95.0	
Off-road	12	11	91.7	7	63.6	4.9	12	11	91.7	7	63.6	5.0	
TOTAL	387	365	94.3	143	39.2	100.0	373	352	94.4	140	39.8	100.0	

4.1.1 Victim age. Of all the people who died in alcohol-related crashes within 12 months of the collision, 24.5% (see last column in the first section) were aged 26-35; 20.3% were aged 46-55; 16.1% were aged 20-25 and 36-45; 11.2% were over age 55; 10.5% were aged 16-19; and 1.4% were under age 16.

The highest incidence of alcohol involvement occurred in the crashes in which a person aged 26-35 and 20-25 died (61.4% and 60.5%, respectively). The lowest incidence of alcohol involvement was found among the

oldest and youngest fatalities – 13.3% of persons under 16 and 15.0% of the fatalities over 55 years of age died in crashes involving alcohol.

4.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 72.0% were males. The incidence of alcohol in crashes in which a male died (42.2%) was greater than the incidence of alcohol in crashes in which a female died (33.1%).

4.1.3 Victim type. Of all the people who died in alcohol-related crashes within 12 months of the collision, 55.9% were drivers/operators of a vehicle; 27.3% were passengers; and 16.8% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (43.8%) occurred in the crashes in which a passenger died. Alcohol was involved in 40.0% of the crashes in which a pedestrian died and 37.0% of those in which a driver/operator died.

4.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes within 12 months of the collision, 42.0% were in an automobile; 26.6% were in a truck/van; 7.7% were motorcyclists; 6.3% were off-road vehicle occupants; and 0.7% were occupants of other highway vehicles.

Within each of these vehicle types, the incidence of alcohol involvement in which an automobile occupant died was greater than the incidence of alcohol in crashes in which a truck/van occupant or motorcyclist died (41.7% versus 38.4% and 30.6%). Among off-road vehicle occupants, 60.0% were in an alcohol-related crash.

4.1.5 Collision location. Of all the people who died in alcohol-related crashes within 12 months of the collision, 95.1% died in a collision which occurred on a public road and 4.9% died in an off-road collision. However, the incidence of alcohol involvement in which a victim died in an alcohol-related crash was greater for those dying in off-road collisions (63.3%) than it was for persons dying in a collision which occurred on a public road (38.4%).

4.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in British Columbia during 2010. *At the time this report was being prepared, 2011 and 2012 coroner data from British Columbia were not available. For this reason, 2010 data will be reported in this section.* Table 4-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time and death time (within 12 months vs. within 30 days of the collision).

The first column in the table shows the number of drivers killed. The next columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests: the first three of these present results for drivers who showed any evidence of alcohol; the last three columns present information on drivers who had BACs over the statutory limit of 80 mg%.

To illustrate, among 16-19 year olds there were 13 drivers killed during 2010; 11 of these fatally injured drivers (84.6%) were tested for alcohol. Of those who were tested, three (27.3%) were positive for alcohol.

This means that 16-19 year old fatally injured drinking drivers accounted for 4.8% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that three of the 11 (27.3%) fatally injured 16-19 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that all three of the drivers who were positive for alcohol had BACs in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, 16-19 year old drivers accounted for 5.8% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. British Columbia had a high testing rate in 2010, with 84.1% of fatally injured drivers being tested for alcohol use.

Table 4-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
British Columbia, 2010

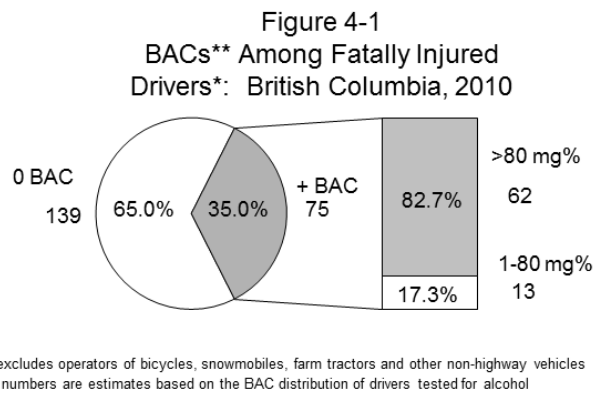
Category of Driver	No. of Drivers	Drivers Tested		Positive BAC			BAC >80 mg%		
		No.	% of total	No.	% of tested	% of all drivers with +BAC	No.	% of tested	% of all drivers with BAC >80 mg%
<u>Age Group</u>									
<16	1	1	100.0	0	0.0	0.0	0	0.0	0.0
16-19	13	11	84.6	3	27.3	4.8	3	27.3	5.8
20-25	19	15	78.9	8	53.3	12.7	8	53.3	15.4
26-35	35	32	91.4	18	56.3	28.6	15	46.9	28.8
36-45	32	27	84.4	13	48.1	20.6	11	40.7	21.2
46-55	49	42	85.7	13	31.0	20.6	12	28.6	23.1
>55	65	52	80.0	8	15.4	12.7	3	5.8	5.8
<u>Gender</u>									
Male	162	135	83.3	48	35.6	76.2	39	28.9	75.0
Female	52	45	86.5	15	33.3	23.8	13	28.9	25.0
<u>Vehicle Type</u>									
Automobiles	101	90	89.1	32	35.6	50.8	26	28.9	50.0
Truck/Van	70	56	80.0	22	39.3	34.9	19	33.9	36.5
Motorcycles	33	26	78.8	8	30.8	12.7	6	23.1	11.5
Tractor Trailer	8	8	100.0	1	12.5	1.6	1	12.5	1.9
Other Vehicle	2	0	0.0	0	0.0	0.0	0	0.0	0.0
<u>Collision Type</u>									
Single vehicle	121	97	80.2	51	52.6	81.0	45	46.4	86.5
Multiple vehicle	93	83	89.2	12	14.5	19.0	7	8.4	13.5
<u>Duration Between Crash and Death Time</u>									
Within 30 Days	208	180	86.5	63	35.0	100.0	52	28.9	100.0
> 30 Days	6	0	0.0	0	0.0	0.0	0	0.0	0.0
TOTAL	214	180	84.1	63	35.0	100.0	52	28.9	100.0

In British Columbia, 35.0% had been drinking and 52 of 63 (82.5%) fatally injured drinking drivers had BACs over 80 mg%. Although not shown in the table, more refined analyses by different BAC categories show that among tested drivers:

- > 65.0% had BACs of zero mg%;
- > 2.2% had BACs from 1-49 mg%;
- > 3.9% had BACs from 50-80 mg%

- > 7.8% had BACs from 81 to 160 mg%; and,
- > 21.1% had BACs over 160 mg%.

In Figure 4-1, the BAC distribution for tested fatally injured drivers is extrapolated to reflect the BAC distribution for all fatally injured drivers. In this figure, 75 of 214 (35.0%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 62 (82.7%) have BACs over 80 mg%.



According to the British Columbia member jurisdiction of CCMTA, where information is presented on blood alcohol concentration (BAC) levels of deceased drivers (e.g., Figure 3-2 on page 18, Figure 4-1 on page 47 reflecting British Columbia data), the following must be taken into account:

BAC values presented in these figures only represent BAC values for deceased drivers exclusively and therefore represent only a subset of the BAC levels of drivers involved in motor vehicle crashes that cause deaths and injuries. For example, where a driver is assigned alcohol as a contributing factor to a crash and that driver survives that crash but, another road user is killed (pedestrian, cyclist or another driver or occupants of any vehicle), that driver's BAC level is not reflected in the figures shown above or the similar figures assembled for other Canadian provinces and territories. Furthermore, where a driver is assigned alcohol as a contributing factor to a crash and that driver survives that crash but are themselves injured or another road user is injured (pedestrian, cyclist or any driver or occupants of any vehicle involved in the crash), that driver's BAC level is again NOT reflected in the figures 3-2, 4-1, or the similar figures assembled for other Canadian provinces and territories. This is a major and prevailing limitation of these data and the BAC values represented herein. This means that the BAC levels reflected in these tables do not reflect the full range of BAC levels of drivers involved in serious crashes and should not be relied upon to draw conclusions about BAC levels and motor vehicle crash risk. In order to understand BAC levels and motor vehicle crash risk, a number of research studies exist to do that. Based on an extensive amount of research, there is overwhelming evidence that even BAC levels as low as .02 impair driving abilities and at .04 to .05 BAC there is a clear relationship between crash risk and alcohol (see Zador et al. 2000; Blomberg et al. 2009; Moskowitz et al. 2000).

4.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 28.6% were aged 26-35; 20.6% were aged 36-45 and 46-55; 12.7% were aged 20-25 and over 55; and 4.8% were aged 16-19.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 28.8% were aged 26-35; 23.1% were aged 46-55; 21.2% were aged 36-45; 15.4% were aged 20-25; and 5.8% were aged 16-19 and over age 55.

When comparing the incidence of drinking and driving among fatally injured drivers by age group, fatally injured drivers aged 26-35 were the most likely to have been drinking (56.3%). By contrast, the lone tested driver under 16 had not been drinking and only 15.4% of the tested drivers aged over 55 had been drinking.

4.2.2 Gender differences. Males dominate the picture – they account for 76.2% of all the fatally injured drivers who had been drinking, and 75.0% of all of the fatally injured drivers who were legally impaired.

Males dominate the picture largely because they account for most of the drivers who are killed (162 of the 214 fatalities or 75.7% are males). Fatally injured male drivers were slightly more likely to have been drinking than female drivers (35.6% and 33.3%, respectively). And, 81.3% of the male and 86.7% of the female drivers who were drinking had BACs over the legal limit.

4.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 50.8% were automobile drivers; 34.9% were truck/van drivers; 12.7% were motorcyclists; and 1.6% were tractor-trailer drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 50.0% were automobile drivers, 36.5% were truck/van drivers; 11.5% were motorcyclists; and 1.9% were tractor-trailer drivers.

Within each of the vehicle types, 39.3% of fatally injured drivers of truck/vans, 35.6% of automobile drivers, 30.8% of motorcyclists, and 12.5% of tractor-trailer drivers were found to have been drinking.

4.2.4 Collision differences. Just over half of the drivers killed (121 of the 214) were involved in single-vehicle collisions but these crashes accounted for four-fifths of the drivers who had been drinking or were legally impaired (81.0% and 86.5%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Over half of the drivers involved in single-vehicle crashes (52.6%) were positive for alcohol, compared to only 14.5% of those involved in multiple-vehicle collisions.

4.2.5 Duration between crash and death time. Given that only six fatally injured drivers died more than 30 days after the collision, and none of these drivers were tested for alcohol, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time cannot be performed.

4.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in British Columbia. A “surrogate” or “indirect” measure is used to estimate alcohol

involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 4-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 2,173 drivers were involved in crashes in which someone was seriously injured, and among these 20.0% were alcohol-related crashes.

4.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 21.4% were aged 46-55, 20.5% were aged 26-35; and 19.4% were aged 20-25. Drivers under 16 and 16-19 respectively accounted for only 0.3% and 6.2% of those involved in alcohol-related serious injury crashes.

Almost one-third (31.0%) of the drivers aged 20-25 were involved in alcohol-related serious injury crashes. The lowest incidence of involvement in alcohol-related crashes was found for those under 16 years of age (0.0%) and over 55 (8.4%).

4.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 74.4% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (21.2% and 15.7%, respectively).

4.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 50.7% were automobile drivers; 31.6% were truck/van drivers; 8.3% were motorcyclists; 3.7% were tractor-trailer drivers; 3.5% were off-road vehicle drivers; and 1.4% were drivers of other highway vehicles.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers (23.1%), compared to 21.4% for drivers of other highway vehicles; 18.7% for truck/van drivers; 16.8% for tractor-trailer drivers; and 16.0% for motorcyclists. Among off-road vehicle drivers, 11.8% were involved in alcohol-related crashes.

4.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 68.4% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 37.0% of these drivers, compared to only 10.0% for drivers involved in multiple-vehicle crashes.

Table 4-3
Drivers in Alcohol-Related Serious Injury Crashes:
British Columbia, 2012

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	10	0	0.0	0.0
16-19	115	27	23.5	6.2
20-25	271	84	31.0	19.4
26-35	380	89	23.4	20.5
36-45	360	77	21.4	17.7
46-55	423	93	22.0	21.4
>55	560	47	8.4	10.8
unknown	54	17	31.5	3.9
<u>Gender</u>				
Male	1523	323	21.2	74.4
Female	605	95	15.7	21.9
unknown	45	16	35.6	3.7
<u>Vehicle Type</u>				
Auto	952	220	23.1	50.7
Truck/Van	733	137	18.7	31.6
Motorcycle	225	36	16.0	8.3
Tractor Trailer	95	16	16.8	3.7
Other Hwy. Vehicle	28	6	21.4	1.4
Off-Road	127	15	11.8	3.5
Unknown	13	4	30.8	0.9
<u>Collision Type</u>				
Single-Vehicle	803	297	37.0	68.4
Multiple-Vehicle	1370	137	10.0	31.6
TOTAL	2173	434	20.0	100.0

4.4 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in British Columbia during 2010. *At the time this report was being prepared, 2011 and 2012 coroner data from British Columbia were not available. For this reason, 2010 data will be reported in this section.* Table 4-4 shows the prevalence of drug use among fatally injured drivers of highway vehicles as well as the number of drivers who tested positive for various categories of drugs.

As can be seen, British Columbia had a high testing rate in 2010, with 80.4% of fatally injured drivers being tested for drug use.

Among fatally injured tested drivers, 80 out of 209 (38.3%) were positive for drugs. The most common category of drugs found within drivers testing positive for drug use was cannabis (52.1%). Other categories of drugs found in fatally injured drivers testing positive for drugs were CNS depressants (43.7%), CNS stimulants (28.2%), narcotic analgesics (14.1%), and dissociative anesthetics (2.8%).

Table 4-4
Drug Use Among Fatally Injured Drivers of
Highway Vehicles: British Columbia, 2010

Prevalence of Drug Use				
Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
214	172	(80.4)	71	(41.3)

Categories of Drugs Found Among Drivers Testing Positive		
Drug Category	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
Cannabis	37	(52.1)
CNS Depressants	31	(43.7)
CNS Stimulants	20	(28.2)
Narcotic Analgesics	10	(14.1)
Dissociative Anesthetics	2	(2.8)
Hallucinogens	0	(0.0)
Inhalants	0	(0.0)

* Percentages will not add up to 100% due to multiple drug types found in blood samples of some drivers.

4.5 Trends in alcohol and drug-impaired driving

Sections 4.1 through 4.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol; (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 4.4 examined drug use among fatally injured drivers in 2010. This section examines changes in these four indicators over time.

4.5.1 Deaths in alcohol-related crashes: 1995-2010. As mentioned earlier in Section 4.1, at the time this report was being prepared, 2011 and 2012 coroner data from British Columbia were not available. For this reason, 2010 data will be reported in this section. Table 4-5 and Figure 4-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2011. These results differ slightly from those in Section 4.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

As shown in the figure, the number of deaths in crashes that involved a drinking driver generally dropped from 241 to 134 between 1995 and 2003, increased to 161 in 2005, decreased to 143 in 2006, rose to 150 in 2007, fell to a low of 121 in 2009, and remained at 121 in 2010. The percentage of alcohol-related fatalities in British Columbia generally decreased from 47.6% in 1995 to its lowest level in 2003 (29.5%), rose to

36.9% in 2005, decreased to 33.6% in 2006, rose in 2007 (35.6%), decreased in 2009 (31.3%), and rose again to 32.7% in 2010.

As shown at the bottom of the table, during the 2006-2010 baseline period there was an average of 132 fatalities involving a drinking driver and they accounted for 33.4% of all fatalities. In 2010, the percent of fatalities involving a drinking driver was 32.7% and the number of persons killed in crashes involving a drinking driver was 121.

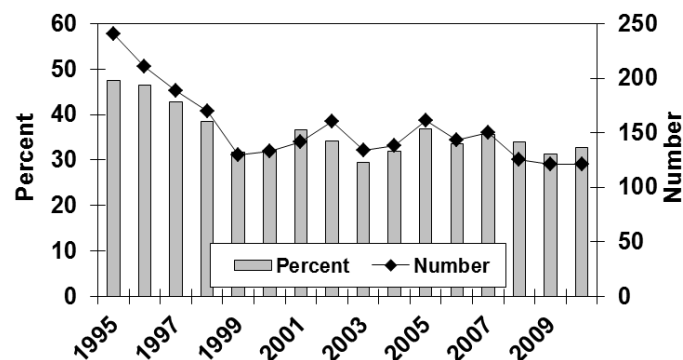
Table 4-5
Number* and Percent of Motor Vehicle Deaths Involving a Drinking Driver: British Columbia, 1995-2010**

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths		Number of Deaths	Alcohol-Related Deaths	
		Number	% of total		Number	% of total
1995	506	241	47.6	490	236	48.2
1996	455	211	46.4	447	206	46.1
1997	441	189	42.9	426	185	43.4
1998	440	171	38.9	432	171	39.6
1999	410	130	31.7	403	129	32.0
2000	413	133	32.2	404	133	32.9
2001	388	142	36.6	384	142	37.0
2002	469	160	34.1	456	158	34.6
2003	455	134	29.5	442	131	29.6
2004	433	138	31.9	427	134	31.4
2005	436	161	36.9	427	161	37.7
2006	426	143	33.6	409	138	33.7
2007	421	150	35.6	383	142	37.1
2008	369	125	33.9	359	124	34.5
2009	387	121	31.3	379	121	31.9
2010	370	121	32.7	356	119	33.4
2006-2010 baseline	395	132	33.4	377	129	34.2

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.

Figure 4-2
Number and Percent of Deaths Involving a Drinking Driver: British Columbia, 1995-2010



4.5.2 Alcohol use among fatally injured drivers: As mentioned earlier in Section 4.2, at the time this report was being prepared, 2011 and 2012 coroner data from British Columbia were not available. For this reason, 1987-2010 data will be reported in this section in Table 4-6. Trends are illustrated in Figure 4-3 which shows changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol (represented by the white area); (2) had BACs below the legal limit (shown by the light grey area); and (3) had BACs over the legal limit (the dark grey area). The data reported here are restricted to drivers who died in less than six hours after the crash (see Section 2.2.2).

As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally increased from 1989 (36.1%) to 1993 (50.4%), dropped to a low of 29.2% in 2004, rose to 36.6% in 2005, decreased in 2006 (32.6%), rose in 2007 (38.8%), and decreased in 2010 (28.9%). The percent of fatally injured drivers with zero BACs decreased from 1989 (55.0%) to its lowest point in 1992 (44.8%), generally increased until 2004 (62.2%), declined in 2005 (57.7%), increased in 2006 (60.0%), declined in 2007 (52.7%), and peaked in 2009 (65.1%), and decreased slightly in 2010 (64.8%). The percent of fatally injured drivers with BACs between 1 and 80 mg% was at its highest level in 1987 (10.2%), dropped to its lowest mark in 1991 (4.0%), remained stable from 1992 to 2005 (5.6%), rose in 2007 (8.5%), decreased in 2009 (4.2%), and rose again in 2010 (6.3%).

During the 2006-2010 baseline period, the percentage of fatally injured drivers was 59.7% for drivers with zero BACs, 6.5% for drivers with BACs from 1-80 mg%, and 33.9% for drivers with BACs over 80 mg%.

Table 4-6
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
British Columbia, 1987-2010

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	267	265	99.3	124	46.8	27	10.2	114	43.0
1988	284	270	95.1	138	51.1	22	8.1	110	40.7
1989	256	249	97.3	137	55.0	22	8.8	90	36.1
1990	288	282	97.9	146	51.8	27	9.6	109	38.7
1991	252	248	98.4	135	54.4	10	4.0	103	41.5
1992	233	223	95.7	100	44.8	15	6.7	108	48.4
1993	232	224	96.6	101	45.1	10	4.5	113	50.4
1994	260	252	96.9	138	54.8	21	8.3	93	36.9
1995	238	225	94.5	107	47.6	16	7.1	102	45.3
1996	202	197	97.5	98	49.7	13	6.6	86	43.7
1997	217	203	93.5	103	50.7	12	5.9	88	43.3
1998	211	204	96.7	118	57.8	16	7.8	70	34.3
1999	210	204	97.1	125	61.3	12	5.9	67	32.8
2000	218	205	94.0	128	62.4	11	5.4	66	32.2
2001	197	187	94.9	100	53.5	11	5.9	76	40.6
2002	255	224	87.8	130	58.0	13	5.8	81	36.2
2003	193	164	85.0	101	61.6	10	6.1	53	32.3
2004	241	209	86.7	130	62.2	18	8.6	61	29.2
2005	235	213	90.6	123	57.7	12	5.6	78	36.6
2006	198	190	96.0	114	60.0	14	7.4	62	32.6
2007	207	201	97.1	106	52.7	17	8.5	78	38.8
2008	208	188	90.4	108	57.4	9	4.8	71	37.8
2009	195	192	98.5	125	65.1	8	4.2	59	30.7
2010	170	159	93.5	103	64.8	10	6.3	46	28.9
2006-2010 baseline	196	186	(94.9)	111	(59.7)	12	(6.5)	63	(33.9)

* dying in less than six hours.

Figure 4-3
Trends in Alcohol Use Among Driver
Fatalities: British Columbia, 1987-2010

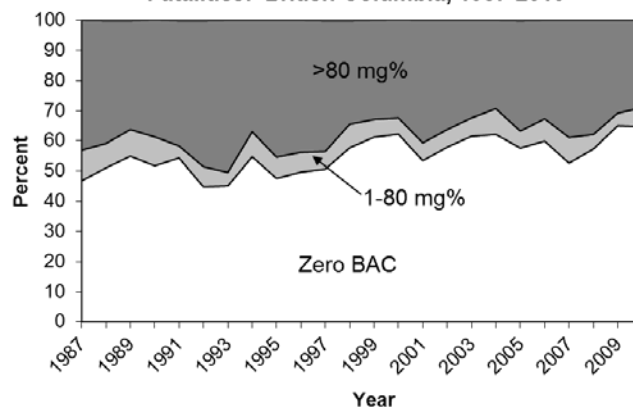


Table 4-7 and Figure 4-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2010. These results also differ from those reported above for several reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 4-1). Second, estimates are based on all fatally injured drivers, not just those who died in less than six hours from the

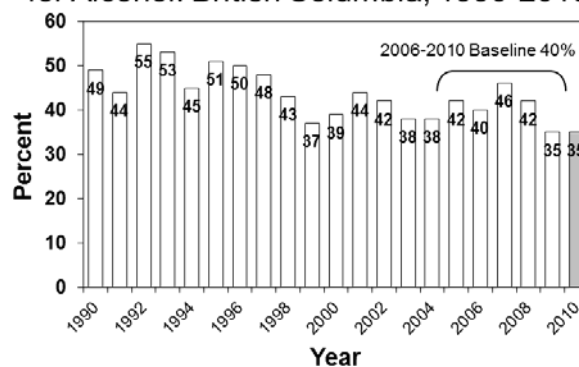
crash. Third, drivers are grouped in only two BAC categories: zero and positive. As can be seen in Table 4-6, the baseline percentage of fatally injured drivers testing positive for alcohol from 2006-2010 is 39.7%. In 2010, 35.0% of fatally injured drivers tested positive for alcohol.

Table 4-7
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
British Columbia, 1990-2010

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	354	180	(50.8)	174	(49.2)
1991	302	168	(55.6)	134	(44.4)
1992	266	120	(45.1)	146	(54.9)
1993	272	128	(47.1)	144	(52.9)
1994	295	162	(54.9)	133	(45.1)
1995	287	140	(48.8)	147	(51.2)
1996	248	125	(50.4)	123	(49.6)
1997	255	132	(51.8)	123	(48.2)
1998	245	139	(56.7)	106	(43.3)
1999	241	151	(62.7)	90	(37.3)
2000	257	157	(61.1)	100	(38.9)
2001	241	134	(55.6)	107	(44.4)
2002	297	171	(57.6)	126	(42.4)
2003	242	150	(62.0)	92	(38.0)
2004	283	176	(62.2)	107	(37.8)
2005	288	168	(58.3)	120	(41.7)
2006	248	149	(60.1)	99	(39.9)
2007	259	140	(54.1)	119	(45.9)
2008	234	135	(57.7)	99	(42.3)
2009	241	156	(64.7)	85	(35.3)
2010	214	139	(65.0)	75	(35.0)
2006-2010 baseline	239	144	(60.3)	95	(39.7)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol

Figure 4-4
Percent of Fatally Injured Drivers* Positive
for Alcohol: British Columbia, 1990-2010



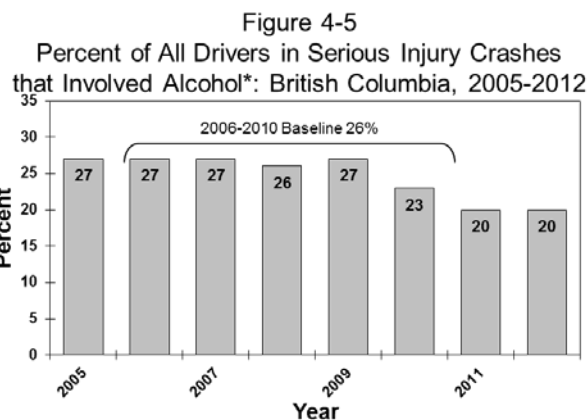
4.5.3 Drivers in serious injury crashes: In British Columbia, data are only available since 2005 to indicate the degree of injury severity for collision victims. Thus trend tables in this section include data from 2005 to 2012, as opposed to the 1995-2012 period reported for serious injury collisions in most other jurisdictions.

Table 4-8 and Figure 4-5 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (2006-2010), an average of 26.2% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 19.7% in the 2011-2012 period, a 24.8% decrease in the problem.

Table 4-8
Number and Percent of All Drivers in Serious Injury Crashes*
that Involved Alcohol: British Columbia, 2005-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
2005	2832	771	(27.2)
2006	2795	754	(27.0)
2007	2749	746	(27.1)
2008	2526	655	(25.9)
2009	2308	624	(27.0)
2010	2208	516	(23.4)
2011	1958	382	(19.5)
2012	2173	434	(20.0)
2006-2010 baseline	2517	659	(26.2)
2011-2012 period	2066	408	(19.7)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 4-9 and Figure 4-6 also show information on drivers involved in alcohol-related serious injury crashes. These results differ from those in Section 4.3 which reports drivers involved in alcohol-related serious injury crashes. These results also differ slightly from those found in Table 4-8 and Figure 4-5 above because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has increased slightly over this eight-year period. Between 2005 and 2009 the percentage of drivers in serious injury crashes that involved alcohol fluctuated, decreased to 19.8% in 2011, and rose to 20.5% in 2012.

As shown in Table 4-9, in the baseline period (2006-2010), an average of 26.5% of drivers in serious injury crashes were in an alcohol-involved crash. In the 2011-2012 period, the incidence of drivers in alcohol-involved serious injury crashes declined to 20.1%, an 24.2% decrease.

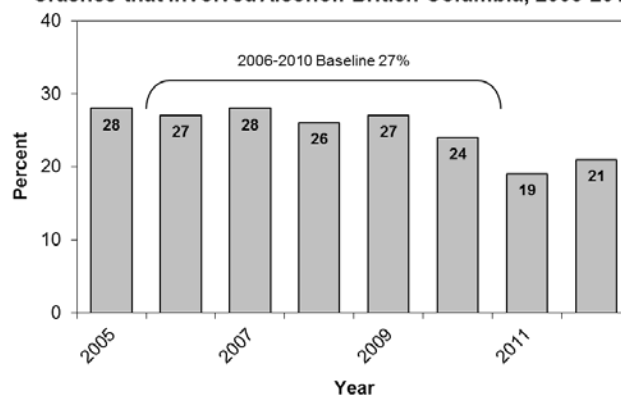
Table 4-9
Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: British Columbia, 2005-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
2005	2655	730	(27.5)
2006	2653	716	(27.0)
2007	2630	723	(27.5)
2008	2397	633	(26.4)
2009	2195	597	(27.2)
2010	2072	494	(23.8)
2011	1837	363	(19.8)
2012	2046	419	(20.5)
2006-2010 baseline	2389	633	(26.5)
2011-2012 period	1942	391	(20.1)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 4-6
Percent of Drivers of Highway Vehicles in Serious Injury Crashes that Involved Alcohol: British Columbia, 2005-2012



4.5.4 Drug use among fatally injured drivers: Table 4-10 and Figure 4-7 show data on drug use among fatally injured drivers over an 11-year period (2000-2010). At the time of publication, drug use data among fatally injured drivers in British Columbia for 2011 and 2012 was not yet available. Similar to Table 4-6, these results are based on fatally injured drivers of highway vehicles who died less than six hours after the crash (see Section 2.2.5).

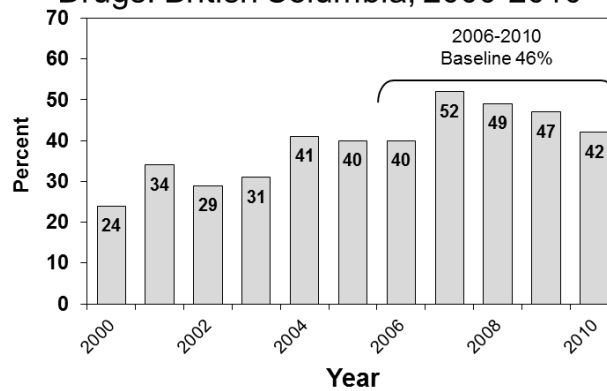
As can be seen at the bottom of Table 4-10, the percentage of fatally injured drivers testing positive for drugs from 2006-2010, the baseline period, is 46.4%. In 2010, 42.0% of fatally injured drivers tested positive for drugs.

Table 4-10
Drug Use Among Fatally Injured Drivers* of Highway Vehicles:
British Columbia, 2000-2010

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative	(% Tested)	Positive	(% Tested)
2000	218	134	61.5	102	76.1	32	23.9
2001	197	125	63.5	82	65.6	43	34.4
2002	255	128	50.2	91	71.1	37	28.9
2003	193	111	57.5	77	69.4	34	30.6
2004	241	198	82.2	116	58.6	82	41.4
2005	235	200	85.1	121	60.5	79	39.5
2006	199	183	92.0	109	59.6	74	40.4
2007	207	182	87.9	88	48.4	94	51.6
2008	208	186	89.4	95	51.1	91	48.9
2009	195	187	95.9	99	52.9	88	47.1
2010	170	157	92.4	91	58.0	66	42.0
2006-2010 baseline	196	179	91.3	96	53.6	83	46.4

* dying in less than six hours.

Figure 4-7
Percent of Fatally Injured Drivers Positive for
Drugs: British Columbia, 2000-2010



5.0 ALBERTA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in Alberta. It describes data on:

- > people who were killed in alcohol-related crashes (Section 5.1);
- > alcohol use among fatally injured drivers (Section 5.2);
- > drivers involved in alcohol-related serious injury crashes (Section 5.3);
- > drug use among fatally injured drivers (Section 5.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 5.5).

5.1 Deaths in alcohol-related crashes

Table 5-1 presents information on people who died in alcohol-related crashes in Alberta during 2012 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, 36 people age 16-19 were killed in motor vehicle crashes in Alberta during 2012. And, in 32 cases (88.9%) it was possible to determine if alcohol was a factor in the crash.

The next column shows the number of people killed in crashes that were known to be alcohol-involved. For example, 19 people aged 16-19 died in alcohol-related crashes in Alberta during 2012. The next column expresses this as a percentage – i.e., 59.4% of the 16-19 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 16-19 year olds represent 13.0% of all the people killed in alcohol-related crashes in Alberta during 2012.

The totals at the bottom of the table provide a summary. As can be seen, 366 persons died within 12 months of a motor vehicle crash in Alberta during 2012. In 337 (92.1%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 146 (43.3%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities ($366 \times .433$) it can be estimated that *in Alberta during 2012, 159 persons died in alcohol-related crashes within 12 months of the collision.*

Among the 365 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 92.3% of the cases. Of these known cases, 146 (43.3%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (365 x .433) it can be estimated that *in Alberta during 2012, 158 persons died in alcohol-related crashes within 30 days of the collision.*

5.1.1 Victim age. Of all the people who died in alcohol-related crashes within 12 months of the collision, 23.3% (see last column in the first section) were aged 20-25 and 26-35; 15.8% were aged 36-45; 14.4% were aged 46-55; 13.0% were aged 16-19; 9.6% were over age 55; and 0.7% were under 16.

The highest incidence of alcohol involvement occurred in the crashes in which a person aged 16-19 and 46-55 died (59.4% and 53.8%, respectively). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – 19.2% of persons over 55 and 10.0% of the fatalities under age 16 died in crashes involving alcohol.

Table 5-1
Deaths in Alcohol-Related Crashes: Alberta, 2012

	Persons Dying Within 12 Months of Collision						Persons Dying Within 30 Days of Collision					
Category of Victim	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)		
		No.	% of total	No.	% of known	% of all ARDs		No.	% of total	No.	% of known	% of all ARDs
<u>Age Group</u>												
<16	16	10	62.5	1	10.0	0.7	16	10	62.5	1	10.0	0.7
16-19	36	32	88.9	19	59.4	13.0	36	32	88.9	19	59.4	13.0
20-25	71	70	98.6	34	48.6	23.3	71	70	98.6	34	48.6	23.3
26-35	68	64	94.1	34	53.1	23.3	68	64	94.1	34	53.1	23.3
36-45	51	49	96.1	23	46.9	15.8	51	49	96.1	23	46.9	15.8
46-55	42	39	92.9	21	53.8	14.4	42	39	92.9	21	53.8	14.4
>55	82	73	89.0	14	19.2	9.6	81	73	90.1	14	19.2	9.6
<u>Gender</u>												
Male	265	247	93.2	116	47.0	79.5	265	247	93.2	116	47.0	79.5
Female	101	90	89.1	30	33.3	20.5	100	90	90.0	30	33.3	20.5
<u>Victim Type</u>												
Driver/ Operator	236	226	95.8	85	37.6	58.2	235	226	96.2	85	37.6	58.2
Passenger	67	60	89.6	29	48.3	19.9	67	60	89.6	29	48.3	19.9
Pedestrian	63	51	81.0	32	62.7	21.9	63	51	81.0	32	62.7	21.9
<u>Vehicle Occupied</u>												
Automobiles	118	113	95.8	38	33.6	26.0	118	113	95.8	38	33.6	26.0
Trucks/Vans	133	125	94.0	59	47.2	40.4	132	125	94.7	59	47.2	40.4
Motorcycles	21	19	90.5	7	36.8	4.8	21	19	90.5	7	36.8	4.8
Other Hwy Vehicles	12	12	100.0	2	16.7	1.4	12	12	100.0	2	16.7	1.4
Off-road Vehicles	19	17	89.5	8	47.1	5.5	19	17	89.5	8	47.1	5.5
(Pedestrians)	63	51	81.0	32	62.7	21.9	63	51	81.0	32	62.7	21.9
<u>Collision Location</u>												
Public Road	341	318	93.3	136	42.8	93.2	340	318	87.1	136	42.8	93.2
Off-road	25	19	76.0	10	52.6	6.8	25	19	76.0	10	52.6	6.8
TOTAL	366	337	92.1	146	43.3	100.0	365	337	92.3	146	43.3	100.0

5.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 79.5% were males. The incidence of alcohol in crashes in which a male died (47.0%) was greater than the incidence of alcohol in crashes in which a female died (33.3%).

5.1.3 Victim type. Of all the people who died in alcohol-related crashes within 12 months of the collision, 58.2% were drivers/operators of a vehicle; 21.9% were pedestrians; and 19.9% were passengers.

Within each of the principal victim types, the highest incidence of alcohol involvement (62.7%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 48.3% of the crashes in which a passenger died and 37.6% of those in which a driver/operator died.

5.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes within 12 months of the collision, 40.4% were in a truck/van; 26.0% were in an automobile; 5.5% were off-road vehicle occupants; 4.8% were motorcyclists; and 1.4% were occupants of other highway vehicles.

Within each of these vehicle types, the incidence of alcohol involvement in which a truck/van occupant died was greater than the incidence of alcohol in crashes in which a motorcyclist or automobile occupant died (47.2% versus 36.8% and 33.6%). Among fatally injured off-road vehicle occupants, 47.1% were involved in an alcohol-related crash.

5.1.5 Collision location. Of all the people who died in alcohol-related crashes within 12 months of the collision, 93.2% died in a collision which occurred on a public road and 6.8% died in an off-road collision. However, the incidence of alcohol involvement in which a victim died in an alcohol-related crash was greater for those dying in off-road collisions (52.6%) than it was for persons dying in a collision which occurred on a public road (42.8%).

5.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Alberta during 2012. Table 5-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time and death time (within 12 months vs. within 30 days of the collision).

The first column in the table shows the number of drivers killed. The next columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests – the first three of these present results for drivers who showed any evidence of alcohol; the last three columns present information on drivers who had BACs over the statutory limit of 80 mg%.

To illustrate, among 16-19 year olds there were 17 drivers killed during 2012; 16 of these fatally injured drivers (94.1%) were tested for alcohol. Of those who were tested, seven (43.8%) were positive for alcohol. This means that 16-19 year old fatally injured drinking drivers accounted for 9.9% of all drinking drivers who were killed.

Table 5-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Alberta, 2012

Alberta, 2012									
Category of Driver	No. of Drivers	Drivers Tested		Positive BAC			BAC >80 mg%		
		No.	% of total	No.	% of tested	% of all drivers with +BAC	No.	% of tested	% of all drivers with BAC >80 mg%
<u>Age Group</u>									
16-19	17	16	94.1	7	43.8	9.9	4	25.0	6.2
20-25	40	38	95.0	15	39.5	21.1	13	34.2	20.0
26-35	45	44	97.8	23	52.3	32.4	23	52.3	35.4
36-45	38	37	97.4	10	27.0	14.1	10	27.0	15.4
46-55	30	30	100.0	10	33.3	14.1	9	30.0	13.8
>55	50	47	94.0	6	12.8	8.5	6	12.8	9.2
<u>Gender</u>									
Male	174	169	97.1	63	37.3	88.7	58	34.3	89.2
Female	46	43	93.5	8	18.6	11.3	7	16.3	10.8
<u>Vehicle Type</u>									
Automobiles	88	85	96.6	25	29.4	35.2	24	28.2	36.9
Truck/Van	100	95	95.0	39	41.1	54.9	35	36.8	53.8
Motorcycles	21	21	100.0	6	28.6	8.5	5	23.8	7.7
Tractor Trailer	11	11	100.0	1	9.1	1.4	1	9.1	1.5
<u>Collision Type</u>									
Single vehicle	96	92	95.8	59	64.1	83.1	54	58.7	83.1
Multiple vehicle	124	120	96.8	12	10.0	16.9	11	9.2	16.9
<u>Duration Between Crash and Death Time</u>									
Within 30 Days	219	212	96.8	71	33.5	100.0	65	30.7	100.0
> 30 Days	1	0	0.0	0	0.0	0.0	0	0.0	0.0
TOTAL	220	212	96.4	71	33.5	100.0	65	30.7	100.0

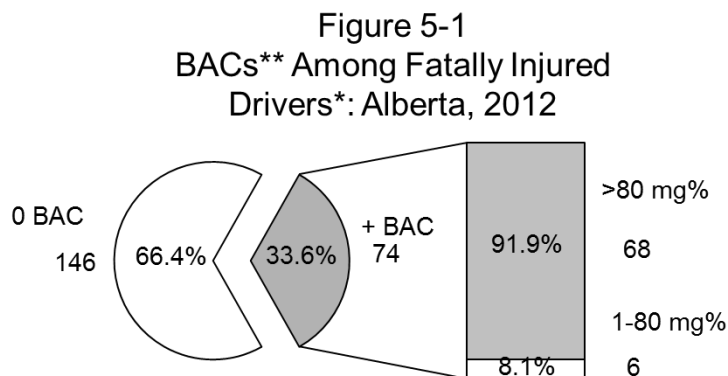
Then, in the final three columns, it can be seen that four of the 16 (25.0%) fatally injured 16-19 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that four of the seven drivers who were positive for alcohol had BACs in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. As can be seen, 16-19 year old drivers accounted for 6.2% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Alberta had a very high testing rate in 2012, with 96.4% of fatally injured drivers being tested for alcohol use.

In Alberta, 33.5% had been drinking and 65 of 71 (91.5%) fatally injured drinking drivers had BACs over 80 mg%. Although not shown in the table, more refined analyses by different BAC categories show that among tested drivers:

- > 66.5% had BACs of zero mg%;
- > 0.9% had BACs from 1-49 mg%;
- > 1.9% had BACs from 50-80 mg%
- > 8.0% had BACs from 81 to 160 mg%; and,
- > 22.6% had BACs over 160 mg%.

In Figure 5-1, the BAC distribution for tested fatally injured drivers is extrapolated to reflect the BAC distribution for all fatally injured drivers. In this figure, 74 of 220 (33.6%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 68 (91.9%) have BACs over 80 mg%.



* excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles
** numbers are estimates based on the BAC distribution of drivers tested for alcohol

5.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 32.4% were aged 26-35; 21.1% were aged 20-25; 14.1% were aged 36-45 and 46-55; 9.9% were aged 16-19; and 8.5% were over age 55.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 35.4% were aged 26-35; 20.0% were aged 20-25; 15.4% were aged 36-45; 13.8% were aged 46-55; and 9.2% were over 55. Of the fatally injured drivers who were over the legal limit, 6.2% were aged 16-19.

When comparing the incidence of drinking and driving among fatally injured drivers by age group, fatally injured drivers aged 26-35 were the most likely to have been drinking (52.3%). By contrast, only 12.8% of the tested drivers over age 55 had been drinking.

5.2.2 Gender differences. Males dominate the picture – they account for 88.7% of all the fatally injured drivers who had been drinking, and 89.2% of all of the fatally injured drivers who were legally impaired.

Males dominate the picture largely because they account for most of the drivers who are killed (174 of the 220 or 79.1% of the fatalities are males). Fatally injured male drivers were more likely to have been drinking than female drivers (37.3% and 18.6%, respectively). And, 92.1% of the male and 87.5% of the female drivers who were drinking had BACs over the legal limit.

5.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 54.9% were truck/van drivers; 35.2% were automobile drivers; 8.5% were motorcyclists and 1.4% were tractor-trailer drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 53.8% were truck/van drivers; 36.9% were automobile drivers; 7.7% were motorcyclists and 1.5% were tractor-trailer drivers.

Within each of the vehicle types, 41.1% of fatally injured truck/van drivers, 29.4% of automobile drivers, 28.6% of motorcyclists, and 9.1% of tractor-trailer drivers had been drinking.

5.2.4 Collision differences. Two-fifths of the drivers killed (96 of the 220) were involved in single-vehicle collisions but these crashes accounted for a majority of the drivers who had been drinking or were legally impaired (64.1% and 83.1%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Almost two-thirds of the drivers involved in single-vehicle crashes (64.1%) were positive for alcohol, compared to only 10.0% of those involved in multiple-vehicle collisions.

5.2.5 Duration between crash and death time. Given that only one fatally injured driver died more than 30 days after the collision and was not tested for alcohol, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time cannot be performed.

5.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in Alberta. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 5-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 3,286 drivers were involved in crashes in which someone was seriously injured, and among these 15.5% were alcohol-related crashes.

5.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 26.8% were aged 26-35, 20.1% were aged 20-25; and 14.8% were aged 36-45. Drivers under 16 and over 55 accounted for only 0.0% and 9.4%, respectively, of those involved in alcohol-related serious injury crashes.

Almost one-quarter of the drivers aged 16-19 were involved in alcohol-related serious injury crashes (26.1%). The lowest incidence of involvement in alcohol-related crashes was found for those under 16 (0.0%).

5.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 74.2% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (17.0% and 12.0%, respectively).

5.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 48.6% were truck/van drivers; 39.8% were automobile drivers; 5.7% were motorcyclists; 3.0% were off-road vehicle drivers; 2.4% were tractor-trailer drivers; and 0.4% were drivers of other highway vehicles.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers as 17.2% of these drivers were in crashes that involved alcohol, compared to 15.5% for truck/van drivers; 13.2% for motorcyclists; 10.7% for tractor-trailer drivers; and 10.1% for off-road vehicle drivers. Among drivers of other highway vehicles, 7.7% were involved in alcohol-related crashes.

**Table 5-3
Drivers in Alcohol-Related Serious Injury Crashes:
Alberta, 2012**

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	24	0	0.0	0.0
16-19	276	72	26.1	14.2
20-25	490	102	20.8	20.1
26-35	726	136	18.7	26.8
36-45	564	75	13.3	14.8
46-55	559	67	12.0	13.2
>55	601	48	8.0	9.4
unknown	46	8	17.4	1.6
<u>Gender</u>				
Male	2222	377	17.0	74.2
Female	1024	123	12.0	24.2
unknown	40	8	20.0	1.6
<u>Vehicle Type</u>				
Auto	1177	202	17.2	39.8
Truck/Van	1594	247	15.5	48.6
Motorcycle	220	29	13.2	5.7
Tractor Trailer	112	12	10.7	2.4
Other Hwy. Vehicle	26	2	7.7	0.4
Off-Road	148	15	10.1	3.0
Unknown	9	1	11.1	0.2
<u>Collision Type</u>				
Single-Vehicle	992	355	35.8	69.9
Multiple-Vehicle	2294	153	6.7	30.1
TOTAL	3286	508	15.5	100.0

5.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 69.9% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 35.8% of these drivers, compared to only 6.7% for drivers involved in multiple-vehicle crashes.

5.4 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in Alberta during 2012. Table 5-4 shows the prevalence of drug use among fatally injured drivers of highway vehicles as well as the number of drivers who tested positive for various categories of drugs.

As can be seen, Alberta had a high testing rate in 2012, with 90.9% of fatally injured drivers being tested for drug use.

Among fatally injured tested drivers, 82 out of 200 (41.0%) were positive for drugs. The most common category of drugs found within drivers testing positive for drug use was cannabis (43.9%). Other categories of drugs found in fatally injured drivers testing positive for drugs were narcotic analgesics (41.5%), CNS depressants (28.0%), CNS stimulants (24.4%), and dissociative anesthetics (4.9%).

Table 5-4
Drug Use Among Fatally Injured Drivers of
Highway Vehicles: Alberta, 2012

Prevalence of Drug Use				
Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
220	200	(90.9)	82	(41.0)

Categories of Drugs Found Among Drivers Testing Positive		
Drug Category	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
Cannabis	36	(43.9)
Narcotic Analgesics	34	(41.5)
CNS Depressants	23	(28.0)
CNS Stimulants	20	(24.4)
Dissociative Anesthetics	4	(4.9)
Hallucinogens	0	(0.0)
Inhalants	0	(0.0)

* Percentages will not add up to 100% due to multiple drug types found in blood samples of some drivers.

5.5 Trends in alcohol and drug-impaired driving

Sections 5.1 through 5.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol; (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 5.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

5.5.1 Deaths in alcohol-related crashes: 1995-2012. Table 5-5 and Figure 5-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 5.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on

deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

**Table 5-5
Number* and Percent of Motor Vehicle Deaths** Involving a
Drinking Driver: Alberta, 1995-2012**

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths		Number of Deaths	Alcohol-Related Deaths	
		Number	% of total		Number	% of total
1995	406	182	44.8	404	181	44.8
1996	357	161	45.1	350	158	45.1
1997	440	168	38.2	432	167	38.7
1998	422	163	38.6	415	161	38.8
1999	337	125	37.1	334	128	38.3
2000	362	133	36.7	354	132	37.3
2001	382	163	42.7	376	160	42.6
2002	368	127	34.5	363	124	34.2
2003	370	149	40.3	365	146	40.0
2004	382	130	34.0	376	129	34.3
2005	451	158	35.0	445	155	34.8
2006	436	167	38.3	433	167	38.6
2007	447	170	38.0	441	167	37.9
2008	400	152	38.0	399	151	37.8
2009	337	145	43.0	332	144	43.4
2010	340	139	40.9	337	138	40.9
2011	307	109	35.5	306	108	35.3
2012	333	123	36.9	332	123	37.0
2006-2010 baseline	392	155	39.5	388	153	39.4
2011-2012 period	320	116	36.3	319	116	36.4

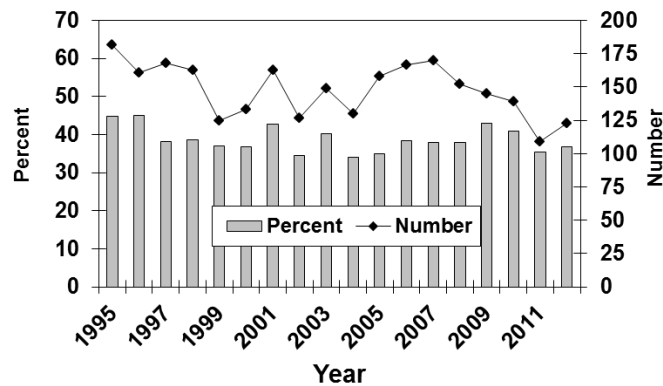
* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.

As shown in the figure, the number of deaths in crashes that involved a drinking driver generally decreased from a high of 182 in 1995 to 125 in 1999. The number fluctuated between 1999 and 2004, increased to 170 in 2007, dropped to a low of 109 in 2011, and rose again to 123 in 2012. The percentage of alcohol-related fatalities generally decreased from a high of 45.1% in 1996 to a low of 34.0% in 2004, eventually rose to 43.0% in 2009; decreased 35.5% in 2011, and rose again to 36.9% in 2012.

As shown at the bottom of the table, during the 2006-2010 baseline period, there was an average of 155 fatalities involving a drinking driver and they accounted for 39.5% of all fatalities. This means that the percent of fatalities involving a drinking driver decreased by 6.6% from 39.5% in the baseline period (2006-2010) to 36.9% in the 2011-2012 period. And, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 25.2% decrease from an average of 155 in the 2006-2010 baseline period to 116 in the 2011-2012 period.

Figure 5-2
Number and Percent of Deaths Involving
a Drinking Driver: Alberta, 1995-2012



5.5.2 Alcohol use among fatally injured drivers: Data on alcohol use among fatally injured drivers over the 26-year period from 1987-2012 are shown in Table 5-6. Trends are illustrated in Figure 5-3 which shows changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol (represented by the white area); (2) had BACs below the legal limit (shown by the light grey area); and (3) had BACs over the legal limit (the dark grey area). The data reported here are restricted to drivers who died in less than six hours after the crash (see Section 2.2.2).

As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (41.1%) to 2004 (28.5%), rose to 36.4% in 2007, dropped to 35.3% in 2008, rose slightly to 35.6% in 2009, decreased to 26.6% in 2011, and rose again in 2012 (31.8%). The percent of fatally injured drivers with zero BACs generally increased from 1987 (51.0%) to a peak of 67.9% in 1997, stabilized between 1999 and 2002, rose in 2004 (66.8%), decreased in 2007 (58.9%), rose in 2008 (60.1%) decreased in 2010 (58.3%), and rose again in 2012 (66.2%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1988 (9.3%), fell to 3.1% in 2001, rose in 2003 (7.0%), remained stable until 2008 (4.8%), rose until 2010 (7.8%), and decreased to its lowest level in 2012 (2.1%).

When compared to the 2006-2010 baseline period shown at the bottom of Table 5-6, the percentage of fatally injured drivers with zero BACs in the 2011-2012 period increased by 10.8% (from 59.3% to 65.7%). Among drivers with BACs from 1-80 mg%, there was a 21.4% decrease (from 5.6% to 4.4%). And among those with BACs over 80 mg%, there was a 15.3% decrease (from 35.2% to 29.8%).

Table 5-6
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Alberta, 1987-2012

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	265	253	95.5	129	51.0	20	7.9	104	41.1
1988	236	215	91.1	111	51.6	20	9.3	84	39.1
1989	235	229	97.4	130	56.8	10	4.4	89	38.9
1990	195	189	96.9	114	60.3	12	6.3	63	33.3
1991	192	180	93.8	99	55.0	11	6.1	70	38.9
1992	171	165	96.5	93	56.4	15	9.1	57	34.5
1993	185	177	95.7	117	66.1	15	8.5	45	25.4
1994	194	189	97.4	117	61.9	8	4.2	64	33.9
1995	201	195	97.0	131	67.2	9	4.6	55	28.2
1996	170	168	98.8	100	59.5	13	7.7	55	32.7
1997	231	224	97.0	152	67.9	11	4.9	61	27.2
1998	206	200	97.1	117	58.5	16	8.0	67	33.5
1999	188	188	100.0	121	64.4	9	4.8	58	30.9
2000	175	173	98.9	108	62.4	10	5.8	55	31.8
2001	199	194	97.5	119	61.3	6	3.1	69	35.6
2002	199	197	99.0	124	62.9	13	6.6	60	30.5
2003	207	201	97.1	117	58.2	14	7.0	70	34.8
2004	197	193	98.0	129	66.8	9	4.7	55	28.5
2005	254	248	97.6	150	60.5	10	4.0	88	35.5
2006	252	248	98.4	148	59.7	12	4.8	88	35.5
2007	235	231	98.3	136	58.9	11	4.8	84	36.4
2008	224	218	97.3	131	60.1	10	4.6	77	35.3
2009	192	191	99.5	112	58.6	11	5.8	68	35.6
2010	195	192	98.5	112	58.3	15	7.8	65	33.9
2011	170	167	98.2	109	65.3	13	7.8	45	26.9
2012	198	195	98.5	129	66.2	4	2.1	62	31.8
2006-2010 baseline	220	216	(98.2)	128	(59.3)	12	(5.6)	76	(35.2)
2011-2012 period	184	181	(98.4)	119	(65.7)	8	(4.4)	54	(29.8)

* dying in less than six hours.

Figure 5-3
Trends in Alcohol Use Among Driver
Fatalities: Alberta, 1987-2012

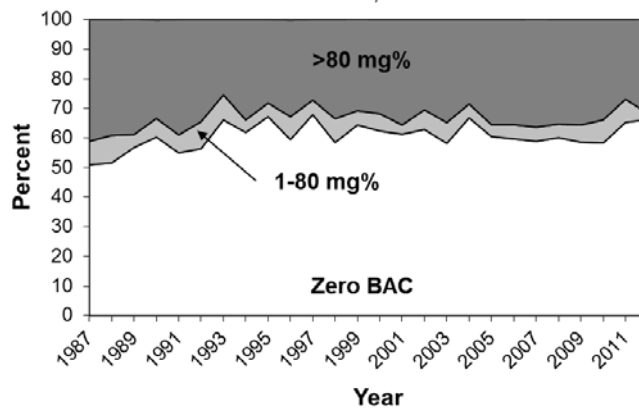


Table 5-7 and Figure 5-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2012. These results also differ from those reported above for several reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 5-1). Second,

estimates are based on all fatally injured drivers, not just those who died in less than six hours from the crash. Third, drivers are grouped in only two BAC categories: zero and positive.

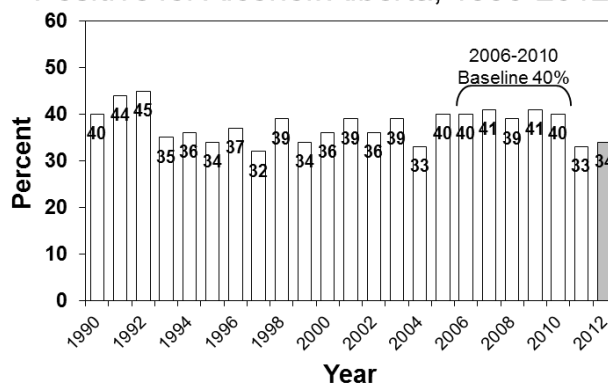
As can be seen at the bottom of Table 5-7, the percentage of fatally injured drivers testing positive for alcohol from 2006-2010, the baseline period, is 40.2%. In the 2011-2012 period, 33.2% of fatally injured drivers tested positive for alcohol, a 17.4% decrease from the baseline period.

Table 5-7
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
Alberta, 1990-2012

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	93	138	(148.4)	93	(100.0)
1991	225	126	(56.0)	99	(44.0)
1992	210	116	(55.2)	94	(44.8)
1993	216	141	(65.3)	75	(34.7)
1994	231	148	(64.1)	83	(35.9)
1995	225	148	(65.8)	77	(34.2)
1996	206	129	(62.6)	77	(37.4)
1997	257	174	(67.7)	83	(32.3)
1998	250	153	(61.2)	97	(38.8)
1999	215	142	(66.0)	73	(34.0)
2000	206	131	(63.6)	75	(36.4)
2001	228	138	(60.5)	90	(39.5)
2002	230	147	(63.9)	83	(36.1)
2003	238	144	(60.5)	94	(39.5)
2004	225	151	(67.1)	74	(32.9)
2005	288	173	(60.1)	115	(39.9)
2006	285	170	(59.6)	115	(40.4)
2007	268	159	(59.3)	109	(40.7)
2008	276	168	(60.9)	108	(39.1)
2009	220	129	(58.6)	91	(41.4)
2010	223	135	(60.5)	88	(39.5)
2011	190	128	(67.4)	62	(32.6)
2012	220	146	(66.4)	74	(33.6)
2006-2010 baseline	254	152	(59.8)	102	(40.2)
2011-2012 period	205	137	(66.8)	68	(33.2)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol

Figure 5-4
Percent of Fatally Injured Drivers*
Positive for Alcohol: Alberta, 1990-2012



5.5.3 Drivers in serious injury crashes: Table 5-8 and Figure 5-5 show information on drivers involved in alcohol-related serious injury crashes. As shown in Table 5-8, during the baseline period (2006-2010), an average of 19.8% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 16.0% in the 2011-2012 period, a 19.2% decrease in the problem.

Table 5-8
Number and Percent of All Drivers in Serious Injury Crashes*
that Involved Alcohol: Alberta, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	2762	669	(24.2)
1996	2964	603	(20.3)
1997	2970	741	(24.9)
1998	3454	843	(24.4)
1999	3298	755	(22.9)
2000	3408	760	(22.3)
2001	3670	851	(23.2)
2002	3899	811	(20.8)
2003	3768	758	(20.1)
2004	3845	792	(20.6)
2005	4024	829	(20.6)
2006	4588	981	(21.4)
2007	4139	826	(20.0)
2008	3996	788	(19.7)
2009	3744	709	(18.9)
2010	3778	698	(18.5)
2011	3198	530	(16.6)
2012	3286	508	(15.5)
2006-2010 baseline	4049	800	(19.8)
2011-2012 period	3242	519	(16.0)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 5-9 and Figure 5-6 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 5.3 and in Table 5-8 and Figure 5-5 above because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has been relatively stable. Between 1995 and 2005 the percentage of drivers in serious injury crashes that involved alcohol generally dropped from 24.4% to 20.6%, rose to 21.8% in 2006, and decreased again to 15.7% in 2012.

As shown Table 5-9, in the baseline period (2006-2010) an average of 19.7% of drivers in serious injury crashes were in an alcohol-involved crash. In the 2011-2012 period, the incidence of drivers in alcohol-involved crashes decreased to 16.2%, a 17.8% decrease.

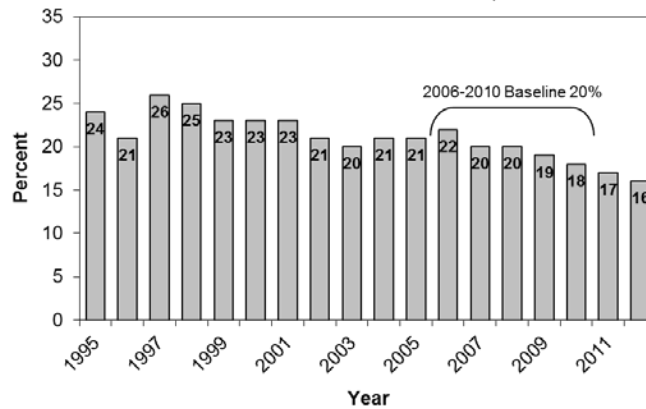
Table 5-9
Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: Alberta, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	2692	656	(24.4)
1996	3023	622	(20.6)
1997	2938	749	(25.5)
1998	3332	821	(24.6)
1999	3178	742	(23.3)
2000	3269	741	(22.7)
2001	3534	817	(23.1)
2002	3777	784	(20.8)
2003	3587	727	(20.3)
2004	3641	755	(20.7)
2005	3826	788	(20.6)
2006	4382	954	(21.8)
2007	3967	795	(20.0)
2008	3776	737	(19.5)
2009	3537	660	(18.7)
2010	3564	641	(18.0)
2011	3024	504	(16.7)
2012	3129	492	(15.7)
2006-2010 baseline	3845	757	(19.7)
2011-2012 period	3077	498	(16.2)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 5-6
Percent of Drivers of Highway Vehicles in Serious Injury
Crashes that Involved Alcohol: Alberta, 1995-2012



5.5.4 Drug use among fatally injured drivers: Table 5-10 and Figure 5-7 show data on drug use among fatally injured drivers over a 13-year period (2000-2012). Similar to Table 5-6, these results are based on fatally injured drivers of highway vehicles who died less than six hours after the crash (see Section 2.2.5).

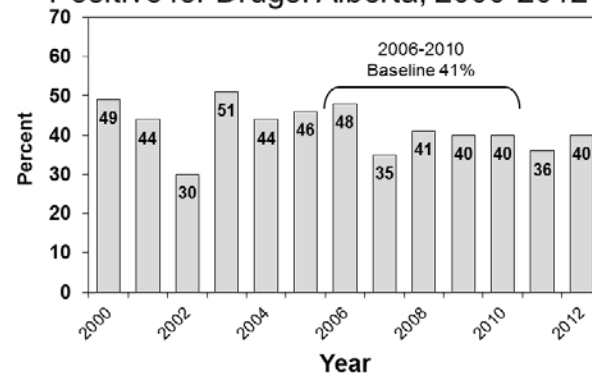
As can be seen at the bottom of Table 5-10, the percentage of fatally injured drivers testing positive for drugs from 2006-2010, the baseline period, is 40.5%. The percentage of fatally injured drivers testing positive for drugs was 36.1% in 2011 and 40.4% in 2012. From 2011 to 2012, the average percentage of fatally injured drivers testing positive for drugs was 38.6%, a 4.7% decrease from the baseline period.

Table 5-10
Drug Use Among Fatally Injured Drivers* of Highway Vehicles:
Alberta, 2000-2012

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative	(% Tested)	Positive	(% Tested)
2000	175	41	23.4	21	51.2	20	48.8
2001	199	32	16.1	18	56.3	14	43.8
2002	199	47	23.6	33	70.2	14	29.8
2003	207	47	22.7	23	48.9	24	51.1
2004	197	34	17.3	19	55.9	15	44.1
2005	254	57	22.4	31	54.4	26	45.6
2006	252	168	66.7	88	52.4	80	47.6
2007	235	211	89.8	138	65.4	73	34.6
2008	224	204	91.1	120	58.8	84	41.2
2009	192	182	94.8	109	59.9	73	40.1
2010	195	186	95.4	111	59.7	75	40.3
2011	170	158	92.9	101	63.9	57	36.1
2012	198	183	92.4	109	59.6	74	40.4
2006-2010 baseline	220	190	86.4	113	59.5	77	40.5
2011-2012 period	184	171	92.9	105	61.4	66	38.6

* dying in less than six hours.

Figure 5-7
Percent of Fatally Injured Drivers
Positive for Drugs: Alberta, 2000-2012



6.0 SASKATCHEWAN

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in Saskatchewan during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 6.1);
- > alcohol use among fatally injured drivers (Section 6.2);
- > drivers involved in alcohol-related serious injury crashes (Section 6.3);
- > drug use among fatally injured drivers (Section 6.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 6.5).

6.1 Deaths in alcohol-related crashes

Table 6-1 presents information on people who died in alcohol-related crashes in Saskatchewan during 2012 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, it can be seen that among persons dying within 12 months of the collision, 18 people aged 16-19 were killed in motor vehicle crashes in Saskatchewan during 2012. And, in 17 cases (94.4%) it was possible to determine if alcohol was a factor in the crash. The next column shows the number of people killed in crashes that were known to be alcohol-involved. There were nine people aged 16-19 who died in alcohol-related crashes in Saskatchewan during 2012. The next column expresses this as a percentage – i.e., 52.9% of the 16-19 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 16-19 year olds represent 10.2% of all the people killed in alcohol-related crashes in Saskatchewan during 2012.

An examination of the section for persons dying within 30 days of the collision shows that 18 persons aged 16-19 died in motor vehicle crashes. In 17 of these cases (94.4%), it was possible to determine if alcohol was a factor in the crash. Among these persons, nine (52.9%) were alcohol-related deaths. And 16-19 year olds accounted for 10.5% of people dying in alcohol-related crashes.

The totals at the bottom of the table provide a summary. As can be seen, 203 persons died within 12 months of a motor vehicle crash in Saskatchewan during 2012. In 191 (94.1%) of these cases, it was possible

to determine if alcohol was a factor. Of these known cases, 88 (46.1%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (203 x .461) it can be estimated that *in Saskatchewan during 2012, 94 persons died in alcohol-related crashes within 12 months of the collision.*

Among the 200 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 94.0% of the cases. Of these known cases, 86 (45.7%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (200 x .457) it can be estimated that *in Saskatchewan during 2012, 91 persons died in alcohol-related crashes within 30 days of the collision.*

Table 6-1
Deaths in Alcohol-Related Crashes: Saskatchewan, 2012

Category of Victim	Persons Dying Within 12 Months of Collision						Persons Dying Within 30 Days of Collision					
	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)		
		No.	% of total	No.	% of known	% of all ARDs		No.	% of total	No.	% of known	% of all ARDs
<u>Age Group</u>												
<16	12	8	66.7	1	0.0	1.1	12	8	66.7	1	0.0	1.2
16-19	18	17	94.4	9	52.9	10.2	18	17	94.4	9	52.9	10.5
20-25	28	27	96.4	15	55.6	17.0	28	27	96.4	15	55.6	17.4
26-35	40	40	100.0	28	70.0	31.8	40	40	100.0	28	70.0	32.6
36-45	36	33	91.7	16	48.5	18.2	35	32	91.4	15	46.9	17.4
46-55	30	28	93.3	11	39.3	12.5	29	27	93.1	11	40.7	12.8
>55	39	38	97.4	8	21.1	9.1	38	37	97.4	7	18.9	8.1
<u>Gender</u>												
Male	141	132	93.6	65	49.2	73.9	140	131	93.6	65	49.6	75.6
Female	62	59	95.2	23	39.0	26.1	60	57	95.0	21	36.8	24.4
<u>Victim Type</u>												
Driver/ Operator	114	111	97.4	45	40.5	51.1	113	110	97.3	45	40.9	52.3
Passenger	62	57	91.9	25	43.9	28.4	61	56	91.8	24	42.9	27.9
Pedestrian	27	23	85.2	18	78.3	20.5	26	22	84.6	17	77.3	19.8
<u>Vehicle Occupied</u>												
Automobiles	71	69	97.2	26	37.7	29.5	71	69	97.2	26	37.7	30.2
Trucks/Vans	81	76	93.8	34	44.7	38.6	80	75	93.8	33	44.0	38.4
Motorcycles	7	7	100.0	1	14.3	1.1	6	6	100.0	1	16.7	1.2
Other Hwy Vehicles	3	3	100.0	0	0.0	0.0	3	3	100.0	0	0.0	0.0
Off-road Vehicles	14	13	92.9	9	69.2	10.2	14	13	92.9	9	69.2	10.5
(Pedestrians)	27	23	85.2	18	78.3	20.5	26	22	84.6	17	77.3	19.8
<u>Collision Location</u>												
Public Road	177	170	96.0	68	40.0	77.3	174	167	96.0	66	39.5	76.7
Off-road	26	21	80.8	20	95.2	22.7	26	21	80.8	20	95.2	23.3
TOTAL	203	191	94.1	88	46.1	100.0	200	188	94.0	86	45.7	100.0

6.1.1 Victim age. Of all the people who died in alcohol-related crashes within 12 months of the collision, 31.8% (see last column in the first section) were aged 26-35; 18.2% were aged 36-45; 17.0% were aged 20-25; 12.5% were aged 46-55; 10.2% were aged 16-19; 9.1% were over age 55; and 1.1% were under 16.

The highest incidence of alcohol involvement occurred in the crashes in which a person aged 26-35 and 20-25 died (70.0% and 55.6%, respectively). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – 0.0% of persons under 16 and 21.1% of the fatalities over 55 years of age died in crashes involving alcohol.

6.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 73.9% were males. The incidence of alcohol in crashes in which a male died (49.2%) was greater than the incidence of alcohol in crashes in which a female died (39.0%).

6.1.3 Victim type. Of all the people who died in alcohol-related crashes within 12 months of the collision, 51.1% were drivers/operators of a vehicle; 28.4% were passengers; and 20.5% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (78.3%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 43.9% of the crashes in which a passenger died and 40.5% of those in which a driver/operator died.

6.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes within 12 months of the collision, 38.6% were truck/van occupants; 29.5% were automobile occupants; 10.2% were off-road vehicle occupants; and 1.1% were motorcyclists.

Within each of these vehicle types, the incidence of alcohol involvement in which an off-road vehicle occupant died (69.2%) was greater than the incidence of alcohol crashes in which a truck/van occupant, automobile occupant or motorcyclist died (44.7%, 37.7% and 14.3%, respectively).

6.1.5 Collision location. Of all the people who died in alcohol-related crashes within 12 months of the collision, 77.3% died in a collision which occurred on a public road and 22.7% died in an off-road collision. However, the incidence of alcohol involvement in which a victim died in an alcohol-related crash was much greater for those dying in off-road collisions (95.2%) than it was for persons dying in a collision which occurred on a public road (40.0%).

6.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured within 12 months of the collision in Saskatchewan during 2012. Table 6-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time and death time (within 12 months vs. within 30 days of the collision).

The first column in the table shows the number of drivers killed. The next columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests: the first three of these present results for drivers who showed any evidence of alcohol; the last three columns present information on drivers who had BACs over the statutory limit of 80 mg%.

To illustrate, among 20-25 year olds there were 11 drivers killed during 2012; all 11 of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, six (54.5%) were positive for alcohol. This means that fatally injured drinking drivers aged 20-25 accounted for 18.2% of all drinking drivers who were killed.

Table 6-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Saskatchewan, 2012

Saskatchewan, 2012									
Category of Driver	No. of Drivers	Drivers Tested		Positive BAC			BAC >80 mg%		
		No.	% of total	No.	% of tested	% of all drivers with +BAC	No.	% of tested	% of all drivers with BAC >80 mg%
<u>Age Group</u>									
16-19	6	6	100.0	2	33.3	6.1	2	33.3	6.9
20-25	11	11	100.0	6	54.5	18.2	5	45.5	17.2
26-35	21	21	100.0	11	52.4	33.3	11	52.4	37.9
36-45	20	20	100.0	5	25.0	15.2	5	25.0	17.2
46-55	19	18	94.7	6	33.3	18.2	5	27.8	17.2
>55	24	19	79.2	3	15.8	9.1	1	5.3	3.4
<u>Gender</u>									
Male	80	76	95.0	26	34.2	78.8	24	31.6	82.8
Female	21	19	90.5	7	36.8	21.2	5	26.3	17.2
<u>Vehicle Type</u>									
Automobiles	43	39	90.7	12	30.8	36.4	10	25.6	34.5
Truck/Van	48	46	95.8	20	43.5	60.6	18	39.1	62.1
Motorcycles	7	7	100.0	1	14.3	3.0	1	14.3	3.4
Tractor Trailer	2	2	100.0	0	0.0	0.0	0	0.0	0.0
Other Hwy. Veh.	1	1	100.0	0	0.0	0.0	0	0.0	0.0
<u>Collision Type</u>									
Single vehicle	39	38	97.4	22	57.9	66.7	22	57.9	75.9
Multiple vehicle	62	57	91.9	11	19.3	33.3	7	12.3	24.1
<u>Duration Between Crash and Death Time</u>									
Within 30 Days	100	94	94.0	33	35.1	100.0	29	30.9	100.0
> 30 Days	1	1	100.0	0	0.0	0.0	0	0.0	0.0
TOTAL	101	95	94.1	33	34.7	100.0	29	30.5	100.0

Then, in the final three columns, it can be seen that five of the 11 (45.5%) fatally injured drivers aged 20-25 who were tested for alcohol had BACs in excess of 80 mg%. This means that five of the six drivers who were positive for alcohol had BACs in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, drivers aged 20-25 accounted for 17.2% of all the drivers with BACs over the legal limit.

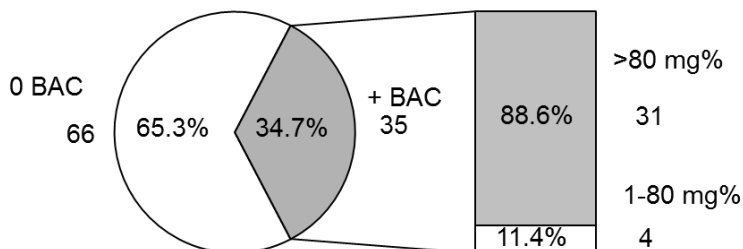
The main findings are shown by the totals at the bottom of the table. Saskatchewan had a very high testing rate in 2012, with 94.1% of fatally injured drivers being tested for alcohol use.

In Saskatchewan, 34.7% had been drinking and 29 of 33 (87.9%) fatally injured drinking drivers had BACs over 80 mg%. Although not shown in the table, more refined analyses by different BAC categories show that among tested drivers:

- > 65.3% had BACs of zero mg%;
- > 3.2% had BACs from 1-49 mg%;
- > 1.1% had BACs from 50-80 mg%
- > 5.3% had BACs from 81 to 160 mg%; and,
- > 25.3% had BACs over 160 mg%.

In Figure 6-1, the BAC distribution for tested fatally injured drivers is extrapolated to reflect the BAC distribution for all fatally injured drivers. In this figure 35 of 101 (34.7%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 31 (88.6%) have BACs over 80 mg%.

Figure 6-1
BACs** Among Fatally Injured Drivers*: Saskatchewan, 2012



* excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles

** numbers are estimates based on the BAC distribution of drivers tested for alcohol

6.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 33.3% were aged 26-35; 18.2% were aged 20-25 and 46-55; 15.2% were aged 36-45; 9.1% were over 55; and 6.1% were aged 16-19.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 37.9% were aged 26-35; 17.2% were aged 20-25, 36-45 and 46-55; 6.9% were aged 16-19; and 3.4% were over 55 years of age.

When comparing the incidence of drinking and driving among fatally injured drivers by age group, fatally injured drivers aged 20-25 were the most likely to have been drinking (54.5%). By contrast, only 15.8% of the tested drivers over age 55 had been drinking.

6.2.2 Gender differences. Males dominate the picture – they account for 78.8% of all the fatally injured drivers who had been drinking, and 82.8% of all of the fatally injured drivers who were legally impaired.

Males dominate the picture largely because they account for most of the drivers who are killed (80 of the 101 drivers are males). However, fatally injured female drivers were slightly more likely to have been drinking than male drivers (36.8% and 34.2%, respectively). And, 92.3% of the male and 71.4% of the female drivers who were drinking had BACs over the legal limit.

6.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 60.6% were truck/van drivers; 36.4% were automobile drivers; and 3.0% were motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 62.1% were truck/van drivers, 34.5% were automobile drivers; and 3.4% were motorcyclists.

Within each of the vehicle types, 43.5% of truck/van drivers, 30.8% of automobile drivers, and 14.3% of motorcyclists were found to have been drinking. Neither of the tractor-trailer drivers nor the lone other highway vehicle driver had been drinking.

6.2.4 Collision differences. Less than two-fifths of the drivers killed (39 of the 101) were involved in single-vehicle collisions but these crashes accounted for over two-thirds of the drivers who had been drinking or were legally impaired (66.7% and 75.9%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Over half of the drivers involved in single-vehicle crashes (57.9%) were positive for alcohol, compared to only 19.3% of those involved in multiple-vehicle collisions.

6.2.5 Duration between crash and death time. Only one fatally injured driver died more than 30 days after the collision, and this person tested negative for alcohol. Thus, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time cannot be performed.

6.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in Saskatchewan. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 6-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 479 drivers were involved in crashes in which someone was seriously injured, and among these 28.2% were alcohol-related crashes.

6.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 25.2% were aged 20-25, 23.7% were aged 26-35; and 16.3% were aged 16-19. Drivers under 16 and over 55 accounted for only 0.0% and 5.9% respectively of those involved in alcohol-related serious injury crashes.

Two-fifths of the drivers aged 16-19 and 20-25 were involved in alcohol-related serious injury crashes (41.5% and 40.5%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for those aged under 16 and over 55 (0.0% and 11.1%, respectively).

**Table 6-3
Drivers in Alcohol-Related Serious Injury Crashes:
Saskatchewan, 2012**

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	6	0	0.0	0.0
16-19	53	22	41.5	16.3
20-25	84	34	40.5	25.2
26-35	85	32	37.6	23.7
36-45	73	12	16.4	8.9
46-55	90	19	21.1	14.1
>55	72	8	11.1	5.9
unknown	16	8	50.0	5.9
<u>Gender</u>				
Male	332	99	29.8	73.3
Female	130	28	21.5	20.7
unknown	17	8	47.1	5.9
<u>Vehicle Type</u>				
Auto	153	62	40.5	45.9
Truck/Van	211	56	26.5	41.5
Motorcycle	37	6	16.2	4.4
Tractor Trailer	47	5	10.6	3.7
Other Hwy. Vehicle	3	0	0.0	0.0
Off-Road	24	5	20.8	3.7
Unknown	4	1	25.0	0.7
<u>Collision Type</u>				
Single-Vehicle	195	98	50.3	72.6
Multiple-Vehicle	284	37	13.0	27.4
TOTAL	479	135	28.2	100.0

6.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 73.3% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (29.8% and 21.5%, respectively).

6.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 45.9% were automobile drivers; 41.5% were truck/van drivers; 4.4% were motorcyclists; and 3.7% were tractor-trailer drivers and off-road vehicle drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers – 40.5% of these drivers were in crashes that involved alcohol, compared to 26.5% for truck/van drivers; 20.8% for off-road vehicle drivers; 16.2% for motorcyclists; and 10.6% for tractor-trailer drivers.

6.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 72.6% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 50.3% of these drivers, compared to only 13.0% for drivers involved in multiple-vehicle crashes.

6.4 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in Saskatchewan during 2012. Table 6-4 shows the prevalence of drug use among fatally injured drivers of highway vehicles as well as the number of drivers who tested positive for various categories of drugs.

As can be seen, Saskatchewan had a high testing rate in 2012, with 88.1% of fatally injured drivers being tested for drug use.

Table 6-4
Drug Use Among Fatally Injured Drivers of
Highway Vehicles: Saskatchewan, 2012

Prevalence of Drug Use				
Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
101	89	(88.1)	34	(38.2)

Categories of Drugs Found Among Drivers Testing Positive		
Drug Category	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
CNS Depressants	14	(41.2)
Cannabis	11	(32.4)
CNS Stimulants	6	(17.6)
Narcotic Analgesics	5	(14.7)
Hallucinogens	0	(0.0)
Dissociative Anesthetics	0	(0.0)
Inhalants	0	(0.0)

* Percentages will not add up to 100% due to multiple drug types found in blood samples of some drivers.

Among fatally injured tested drivers, 34 out of 89 (38.2%) were positive for drugs. The most common category of drugs found within drivers testing positive for drug use was CNS depressants (41.2%). Other categories of drugs found in fatally injured drivers testing positive for drugs were cannabis (32.4%), CNS stimulants (17.6%), and narcotic analgesics (14.7%).

6.5 Trends in alcohol and drug-impaired driving

Sections 6.1 through 6.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol (within 12 months and 30 days of the collision); (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 6.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

6.5.1 Deaths in alcohol-related crashes: 1995-2012. Table 6-5 and Figure 6-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 6.1 for two reasons. First, deaths that occur in crashes that involve a drinking

pedestrian are not necessarily classified as alcohol- related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

Table 6-5
Number* and Percent of Motor Vehicle Deaths Involving a**
Drinking Driver: Saskatchewan, 1995-2011

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths Number	% of total	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	146	64	43.8	144	64	44.4
1996	127	52	40.9	126	51	40.5
1997	155	54	34.8	154	54	35.1
1998	147	62	42.2	146	61	41.8
1999	178	79	44.4	177	78	44.1
2000	143	49	34.3	142	49	34.5
2001	147	70	47.6	145	69	47.6
2002	131	45	34.4	130	45	34.6
2003	137	55	40.1	136	54	39.7
2004	121	44	36.4	121	44	36.4
2005	147	46	31.3	144	46	31.9
2006	126	49	38.9	123	49	39.8
2007	132	54	40.9	131	54	41.2
2008	145	74	51.0	144	73	50.7
2009	155	63	40.6	154	63	40.9
2010	155	68	43.9	155	68	43.9
2011	146	62	42.5	145	62	42.8
2012	172	62	36.0	169	59	34.9
2006-2010 baseline	143	62	43.4	141	61	43.3
2011-2012 period	159	62	39.0	157	61	38.9

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

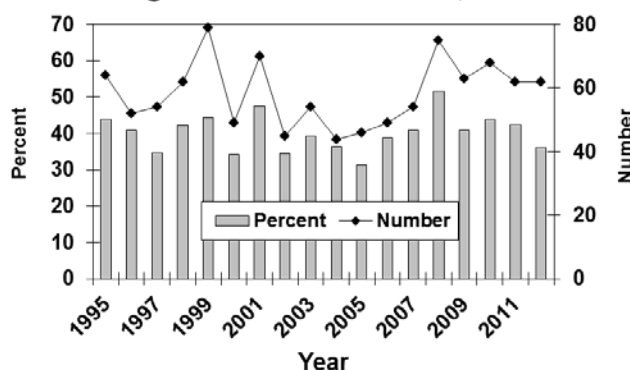
** only on public roadways involving principal vehicle types.

As shown in the table and figure, the number of deaths in crashes that involved a drinking driver generally decreased from 64 in 1995 to a low of 44 in 2004, increased to 74 in 2008, decreased to 63 in 2009, rose to 68 in 2010, and decreased again to 62 in 2011 and 2012. The percentage of alcohol-related fatalities generally decreased from 43.8% in 1995 to a low of 31.3% in 2005, peaked at 51.0% in 2008, and generally decreased to 36.0% in 2012.

As shown at the bottom of the table, during the 2006-2010 baseline period there was an average of 62 fatalities involving a drinking driver and they accounted for 43.4% of all fatalities. This means that the percent of fatalities involving a drinking driver decreased by 10.1% from 43.4% in the baseline period (2006-2010) to 39.0% in the 2011-2012 period. And, in terms of the number of persons killed in crashes involving a

drinking driver, there has been no change in the average of 62 in the baseline period (2006-2010) to 62 in the 2011-2012 period.

Figure 6-2
Number and Percent of Deaths Involving
a Drinking Driver: Saskatchewan, 1995-2012



6.5.2 Alcohol use among fatally injured drivers: Data on alcohol use among fatally injured drivers over the 26-year period from 1987-2012 are shown in Table 6-6. Trends are illustrated in Figure 6-3 which shows changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol (represented by the white area); (2) had BACs below the legal limit (shown by the light grey area); and (3) had BACs over the legal limit (the dark grey area). The data reported here are restricted to drivers who died in less than six hours after the crash (see Section 2.2.2).

As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (52.9%) to its lowest mark in 2006 (30.6%), rose in 2008 (49.4%), and generally decreased until 2012 (31.0%). The percent of fatally injured drivers with zero BACs increased from 1987 (40.0%) to its highest mark in 2000 (65.7%), remained relatively stable until 2007 (61.4%), declined in 2008 (45.8%), rose until 2010 (58.3%), decreased in 2011 (52.1%), and rose again in 2012 (64.3%). The percent of fatally injured drivers with BACs from 1-80 mg% peaked in 1991 (14.1%), dropped to its lowest mark in 1998 (1.4%), fluctuated until 2003 (3.7%), generally rose until 2006 (8.3%), and remained relatively stable until 2012 (4.8%).

When compared to the 2006-2010 baseline period shown at the bottom of Table 6-6, the percentage of fatally injured drivers with zero BACs in the 2011-2012 period increased by 5.1% (from 55.4% to 58.2%). Among drivers with BACs from 1-80 mg%, there was a 15.0% decrease (from 6.0% to 5.1%). And among those with BACs over 80 mg%, there was a 4.9% decrease (from 38.6% to 36.7%).

Table 6-6
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Saskatchewan, 1987-2012

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	94	85	90.4	34	40.0	6	7.1	45	52.9
1988	88	86	97.7	44	51.2	12	14.0	30	34.9
1989	110	103	93.6	51	49.5	7	6.8	45	43.7
1990	80	78	97.5	44	56.4	5	6.4	29	37.2
1991	83	78	94.0	37	47.4	11	14.1	30	38.5
1992	66	63	95.5	32	50.8	4	6.3	27	42.9
1993	80	79	98.8	47	59.5	6	7.6	26	32.9
1994	68	68	100.0	41	60.3	8	11.8	19	27.9
1995	77	76	98.7	40	52.6	5	6.6	31	40.8
1996	68	67	98.5	40	59.7	4	6.0	23	34.3
1997	65	64	98.5	38	59.4	5	7.8	21	32.8
1998	73	73	100.0	45	61.6	1	1.4	27	37.0
1999	86	84	97.7	45	53.6	8	9.5	31	36.9
2000	73	67	91.8	44	65.7	2	3.0	21	31.3
2001	88	82	93.2	41	50.0	6	7.3	35	42.7
2002	62	58	93.5	30	51.7	4	6.9	24	41.4
2003	84	81	96.4	48	59.3	3	3.7	30	37.0
2004	62	60	96.8	34	56.7	4	6.7	22	36.7
2005	70	62	88.6	38	61.3	4	6.5	20	32.3
2006	79	72	91.1	44	61.1	6	8.3	22	30.6
2007	86	83	96.5	51	61.4	5	6.0	27	32.5
2008	87	83	95.4	38	45.8	4	4.8	41	49.4
2009	94	93	98.9	51	54.8	5	5.4	37	39.8
2010	89	84	94.4	49	58.3	4	4.8	31	36.9
2011	76	73	96.1	38	52.1	3	4.1	32	43.8
2012	89	84	94.4	54	64.3	4	4.8	26	31.0
2006-2010 baseline	87	83	(95.4)	46	(55.4)	5	(6.0)	32	(38.6)
2011-2012 period	83	79	(95.2)	46	(58.2)	4	(5.1)	29	(36.7)

* dying in less than six hours.

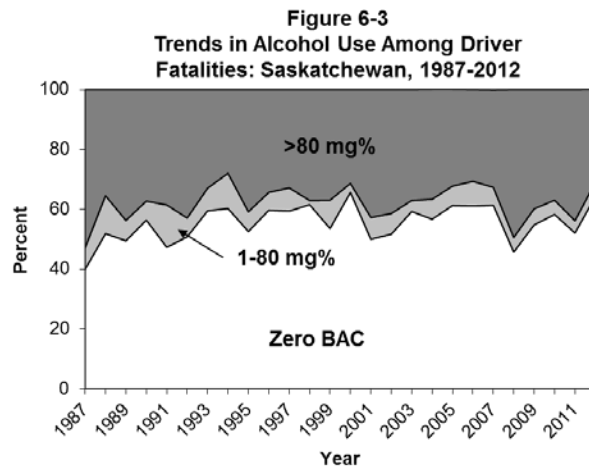


Table 6-7 and Figure 6-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2012. These results also differ from those reported above for several reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 6-1). Second, estimates are based on all fatally injured drivers, not just those who died in less than six hours from the crash. Third, drivers are grouped in only two BAC categories: zero and positive.

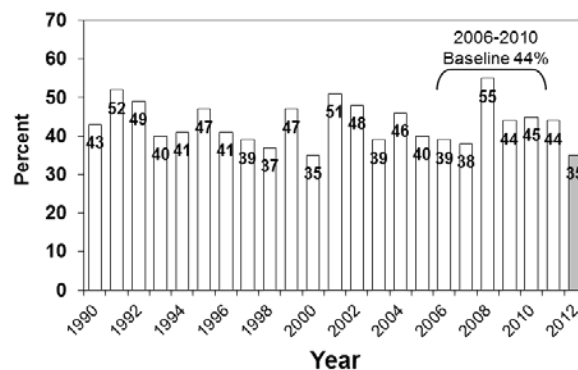
As can be seen at the bottom of Table 6-7, the percentage of fatally injured drivers testing positive for alcohol from 2006-2010, the baseline period, is 44.3%. In the 2011-2012 period, 39.6% of fatally injured drivers tested positive for alcohol, an 10.6% decrease from the baseline period.

Table 6-7
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
Saskatchewan, 1990-2012

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	93	53	(57.0)	40	(43.0)
1991	88	42	(47.7)	46	(52.3)
1992	74	38	(51.4)	36	(48.6)
1993	90	54	(60.0)	36	(40.0)
1994	79	47	(59.5)	32	(40.5)
1995	81	43	(53.1)	38	(46.9)
1996	73	43	(58.9)	30	(41.1)
1997	78	48	(61.5)	30	(38.5)
1998	85	54	(63.5)	31	(36.5)
1999	96	51	(53.1)	45	(46.9)
2000	83	54	(65.1)	29	(34.9)
2001	99	49	(49.5)	50	(50.5)
2002	75	39	(52.0)	36	(48.0)
2003	92	56	(60.9)	36	(39.1)
2004	72	39	(54.2)	33	(45.8)
2005	82	49	(59.8)	33	(40.2)
2006	88	54	(61.4)	34	(38.6)
2007	97	60	(61.9)	37	(38.1)
2008	96	43	(44.8)	53	(55.2)
2009	103	58	(56.3)	45	(43.7)
2010	100	55	(55.0)	45	(45.0)
2011	90	50	(55.6)	40	(44.4)
2012	101	66	(65.3)	35	(34.7)
2006-2010 baseline	97	54	(55.7)	43	(44.3)
2011-2012 period	96	58	(60.4)	38	(39.6)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol

Figure 6-4
Percent of Fatally Injured Drivers* Positive
for Alcohol: Saskatchewan, 1990-2012



6.5.3 Drivers in serious injury crashes: Table 6-8 and Figure 6-5 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (2006-2010), an average of 29.5% of drivers in serious injury crashes were in an alcohol-involved crash. This percentage decreased to 26.3% in 2011, then rose to 28.2% in 2012. From 2011 to 2012, an average of 27.3% of drivers in serious injury crashes were in an alcohol-involved crash. This represents a 6.8% decrease in the problem compared to the 2006-2010 baseline period.

Table 6-8
Number and Percent of All Drivers in Serious Injury Crashes*
that Involved Alcohol: Saskatchewan, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	949	233	(24.6)
1996	700	180	(25.7)
1997	889	205	(23.1)
1998	744	192	(25.8)
1999	809	204	(25.2)
2000	734	193	(26.3)
2001	614	171	(27.9)
2002	634	184	(29.0)
2003	705	189	(26.8)
2004	639	163	(25.5)
2005	469	129	(27.5)
2006	540	145	(26.9)
2007	519	159	(30.6)
2008	576	188	(32.6)
2009	567	157	(27.7)
2010	528	154	(29.2)
2011	486	128	(26.3)
2012	479	135	(28.2)
2006-2010 baseline	546	161	(29.5)
2011-2012 period	483	132	(27.3)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 6-9 and Figure 6-6 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 6.3 and in Table 6-8 and Figure 6-5 above because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has increased gradually until 2002, declined until 2004, and generally increased in the past six years. Between 1995 and 2002 the percentage of all drivers in serious injury crashes that involved alcohol generally rose from 25.0% to 29.5%, peaked at 33.2% in 2008, decreased to 27.7% in 2009, rose to 28.9% in 2010, decreased in 2011 (27.8%), and rose again in 2012 (28.6%).

In the baseline period (2006-2010), an average of 29.5% of highway vehicle drivers in serious injury crashes were in an alcohol-involved crash. From 2011 to 2012, the average percentage of drivers in alcohol-involved crashes declined to 28.3%, a 4.1% decrease from the baseline period.

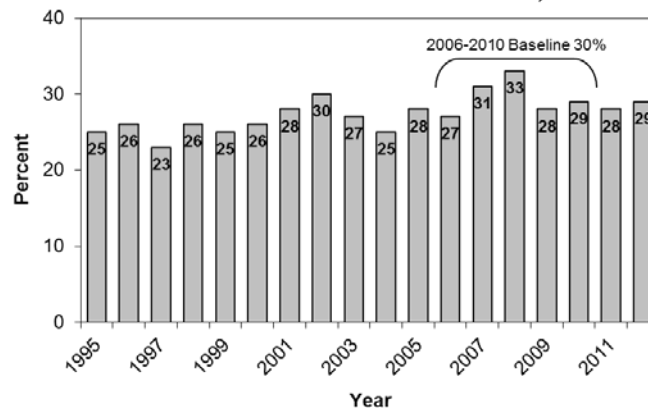
Table 6-9
Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: Saskatchewan, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	885	221	(25.0)
1996	656	168	(25.6)
1997	843	197	(23.4)
1998	703	185	(26.3)
1999	757	195	(25.8)
2000	693	183	(26.4)
2001	583	164	(28.1)
2002	599	177	(29.5)
2003	667	177	(26.5)
2004	606	154	(25.4)
2005	443	122	(27.5)
2006	507	136	(26.8)
2007	492	151	(30.7)
2008	542	180	(33.2)
2009	528	146	(27.7)
2010	492	142	(28.9)
2011	460	128	(27.8)
2012	451	129	(28.6)
2006-2010 baseline	512	151	(29.5)
2011-2012 period	456	129	(28.3)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 6-6
Percent of Drivers of Highway Vehicles in Serious Injury
Crashes that Involved Alcohol: Saskatchewan, 1995-2012



6.5.4 Drug use among fatally injured drivers: Table 6-10 and Figure 6-7 show data on drug use among fatally injured drivers over a 13-year period (2000-2012). Similar to Table 6-6, these results are based on fatally injured drivers of highway vehicles who died less than six hours after the crash (see Section 2.2.5).

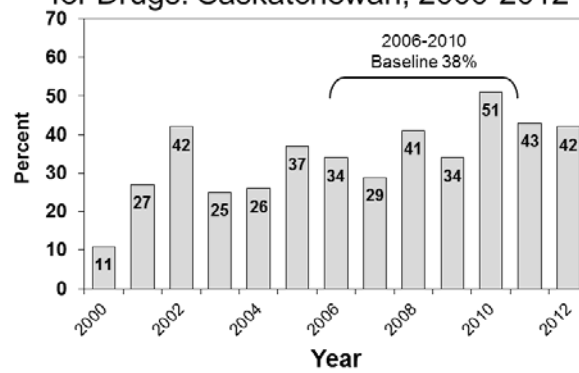
As can be seen at the bottom of Table 6-10, the percentage of fatally injured drivers testing positive for drugs from 2006-2010, the baseline period, is 37.8%. The percentage of fatally injured drivers testing positive for drugs was 42.5% in 2011 and 42.0% in 2012. From 2011 to 2012, the average percentage of fatally injured drivers testing positive for drugs was 42.3%, an 11.9% increase from the baseline period.

Table 6-10
Drug Use Among Fatally Injured Drivers* of Highway Vehicles:
Saskatchewan, 2000-2012

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative	(% Tested)	Positive	(% Tested)
2000	73	62	84.9	55	88.7	7	11.3
2001	88	79	89.8	58	73.4	21	26.6
2002	62	55	88.7	32	58.2	23	41.8
2003	84	80	95.2	60	75.0	20	25.0
2004	62	55	88.7	41	74.5	14	25.5
2005	70	60	85.7	38	63.3	22	36.7
2006	79	71	89.9	47	66.2	24	33.8
2007	86	83	96.5	59	71.1	24	28.9
2008	87	83	95.4	49	59.0	34	41.0
2009	94	92	97.9	61	66.3	31	33.7
2010	89	83	93.3	41	49.4	42	50.6
2011	76	73	96.1	42	57.5	31	42.5
2012	89	81	91.0	47	58.0	34	42.0
2006-2010 baseline	87	82	94.3	51	62.2	31	37.8
2011-2012 period	83	78	94.0	45	57.7	33	42.3

* dying in less than six hours.

Figure 6-7
Percent of Fatally Injured Drivers Positive
for Drugs: Saskatchewan, 2000-2012



7.0 MANITOBA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in Manitoba during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 7.1);
- > alcohol use among fatally injured drivers (Section 7.2);
- > drivers involved in alcohol-related serious injury crashes (Section 7.3);
- > drug use among fatally injured drivers (Section 7.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 7.5).

7.1 Deaths in alcohol-related crashes

Table 7-1 presents information on people who died in alcohol-related crashes in Manitoba during 2012 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, it can be seen that among persons dying within 12 months of the collision, 19 people aged 26-35 were killed in motor vehicle crashes in Manitoba during 2012. And, in 19 cases (100.0%) it was possible to determine if alcohol was a factor in the crash. The next column shows the number of people killed in crashes that were known to be alcohol-involved. Thirteen people aged 26-35 died in alcohol-related crashes in Manitoba during 2012. The next column expresses this as a percentage – i.e., 68.4% of the 26-35 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 26-35 year olds represent 26.0% of all the people killed in alcohol-related crashes in Manitoba during 2012.

An examination of the section for persons dying within 30 days of the collision shows that 19 persons aged 26-35 died in motor vehicle crashes. In 19 of these cases (100.0%), it was possible to determine if alcohol was a factor in the crash. Among these persons, 13 (68.4%) were alcohol-related deaths. And 26-35 year olds accounted for 26.0% of people dying in alcohol-related crashes.

The totals at the bottom of the table provide a summary. As can be seen, 115 persons died within 12 months of a motor vehicle crash in Manitoba during 2012. In 110 (95.7%) of these cases, it was possible to

determine if alcohol was a factor. Of these known cases, 50 (45.5%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (115 x .455) it can be estimated that *in Manitoba during 2012, 53 persons died in alcohol-related crashes within 12 months of the collision.*

Among the 110 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 97.3% of the cases. Of these known cases, 50 (46.7%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (110 x .467) it can be estimated that *in Manitoba during 2012, 51 persons died in alcohol-related crashes within 30 days of the collision.*

Table 7-1
Deaths in Alcohol-Related Crashes: Manitoba, 2012

Deaths in Alcohol-Related Crashes: Manitoba, 2012												
Persons Dying Within 12 Months of Collision							Persons Dying Within 30 Days of Collision					
Category of Victim	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)		
		No.	% of total	No.	% of known	% of all ARDs		No.	% of total	No.	% of known	% of all ARDs
Age Group												
<16	10	9	90.0	0	0.0	0.0	9	8	88.9	0	0.0	0.0
16-19	15	15	100.0	8	53.3	16.0	15	15	100.0	8	53.3	16.0
20-25	20	19	95.0	13	68.4	26.0	20	19	95.0	13	68.4	26.0
26-35	19	19	100.0	13	68.4	26.0	19	19	100.0	13	68.4	26.0
36-45	12	11	91.7	9	81.8	18.0	11	11	100.0	9	81.8	18.0
46-55	12	10	83.3	4	40.0	8.0	11	10	90.9	4	40.0	8.0
>55	27	27	100.0	3	11.1	6.0	25	25	100.0	3	12.0	6.0
Gender												
Male	77	73	94.8	43	58.9	86.0	73	71	97.3	43	60.6	86.0
Female	38	37	97.4	7	18.9	14.0	37	36	97.3	7	19.4	14.0
Victim Type												
Driver/ Operator	68	67	98.5	33	49.3	66.0	67	66	98.5	33	50.0	66.0
Passenger	28	28	100.0	11	39.3	22.0	27	27	100.0	11	40.7	22.0
Pedestrian	18	15	83.3	6	40.0	12.0	15	14	93.3	6	42.9	12.0
Unknown	1	0	0.0	0	0.0	0.0	1	0	0.0	0	0.0	0.0
Vehicle Occupied												
Automobiles	48	48	100.0	18	37.5	36.0	46	46	100.0	18	39.1	36.0
Trucks/Vans	28	28	100.0	14	50.0	28.0	28	28	100.0	14	50.0	28.0
Other Vehicles*	20	18	90.0	11	61.1	22.0	20	18	90.0	11	61.1	22.0
(Pedestrians)	18	15	83.3	6	40.0	12.0	15	14	93.3	6	42.9	12.0
Unknown	1	1	100.0	1	100.0	2.0	1	1	100.0	1	0.0	2.0
Collision Location												
Public Road	99	98	99.0	43	43.9	86.0	95	95	100.0	43	45.3	86.0
Off-road	16	12	75.0	7	58.3	14.0	15	12	80.0	7	58.3	14.0
TOTAL	115	110	95.7	50	45.5	100.0	110	107	97.3	50	46.7	100.0

* Motorcyclists and off-road vehicle occupants have been aggregated to ensure that an individual will not be identified.

7.1.1 Victim age. Of all the people who died in alcohol-related crashes within 12 months of the collision, 26.0% (see last column of the first section) were aged 20-25 and 26-35; 18.0% were aged 36-45; 16.0% were aged 16-19; 8.0% were aged 46-55; and 6.0% were over age 55.

The highest incidence of alcohol involvement occurred in the crashes in which a person aged 36-45 died (81.8%). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities as only 0.0% of fatalities among those under 16 and 11.1% of the fatalities over 55 years of age died in crashes involving alcohol.

7.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 86.0% were males. The incidence of alcohol in crashes in which a male died (58.9%) was greater than the incidence of alcohol in crashes in which a female died (18.9%).

7.1.3 Victim type. Of all the people who died in alcohol-related crashes within 12 months of the collision, 66.0% were drivers/operators of a vehicle; 22.0% were passengers; and 12.0% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (49.3%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 40.0% of the crashes in which a pedestrian died and 39.3% of those in which a passenger died.

7.1.4 Type of vehicle occupied. Motorcyclists and off-road vehicle occupants have been regrouped into 'other vehicles' to ensure that individuals cannot be identified. Of all the people who died in alcohol-related crashes within 12 months of the collision, 36.0% were automobile occupants; 28.0% were truck/van occupants; and 22.0% were occupants of other vehicles.

Within each of these vehicle types, the incidence of alcohol involvement in which an occupant of another vehicle died was greater than the incidence of alcohol in crashes in which a truck/van occupant or automobile occupant died (61.1% versus 50.0% and 37.5%).

7.1.5 Collision location. Of all the people who died in alcohol-related crashes within 12 months of the collision, 86.0% died in a collision which occurred on a public road and 14.0% died in an off-road collision. However, the incidence of alcohol involvement in which a victim died in an alcohol-related crash was greater for those dying in off-road collisions (58.3%) than it was for persons dying in collisions on public roads (43.9%).

7.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured within 12 months of the collision in Manitoba during 2012. Table 7-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time and death time (within 12 months vs. within 30 days of the collision).

The first column in the table shows the number of drivers killed. The next columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests – the first three of these present results for drivers who showed any evidence of alcohol; the last three columns present information on drivers who had BACs over the statutory limit of 80 mg%.

To illustrate, among those aged 16-19 there were five drivers killed during 2012; all five of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, two (40.0%) were positive for alcohol. This means fatally injured drinking drivers aged 16-19 accounted for 8.3% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that one (20.0%) fatally injured driver aged 16-19 who was tested for alcohol had a BAC in excess of 80 mg%. This means that one of the two drivers who were positive for alcohol had a BAC in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, drivers aged 16-19 accounted for 5.9% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Manitoba had a very high testing rate in 2012, with 92.6% of fatally injured drivers being tested for alcohol use.

Table 7-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Manitoba, 2012

Category of Driver	No. of Drivers	Drivers Tested		Positive BAC			BAC >80 mg%		
		No.	% of total	No.	% of tested	% of all drivers with +BAC	No.	% of tested	% of all drivers with BAC >80 mg%
<u>Age Group</u>									
16-19	5	5	100.0	2	40.0	8.3	1	20.0	5.9
20-25	10	9	90.0	4	44.4	16.7	2	22.2	11.8
26-35	12	12	100.0	9	75.0	37.5	7	58.3	41.2
36-45	6	6	100.0	5	83.3	20.8	3	50.0	17.6
46-55	6	5	83.3	2	40.0	8.3	2	40.0	11.8
>55	15	13	86.7	2	15.4	8.3	2	15.4	11.8
<u>Gender</u>									
Male	37	34	91.9	21	61.8	87.5	16	47.1	94.1
Female	17	16	94.1	3	18.8	12.5	1	6.3	5.9
<u>Vehicle Type</u>									
Automobiles	33	29	87.9	11	37.9	45.8	7	24.1	41.2
Other Hwy Veh.*	21	21	100.0	13	61.9	54.2	10	47.6	58.8
<u>Collision Type</u>									
Single vehicle	26	25	96.2	18	72.0	75.0	14	56.0	82.4
Multiple vehicle	28	25	89.3	6	24.0	25.0	3	12.0	17.6
<u>Duration Between Crash and Death Time</u>									
Within 30 Days	53	50	94.3	24	48.0	100.0	17	34.0	100.0
> 30 Days	1	0	0.0	0	0.0	0.0	0	0.0	0.0
TOTAL	54	50	92.6	24	48.0	100.0	17	34.0	100.0

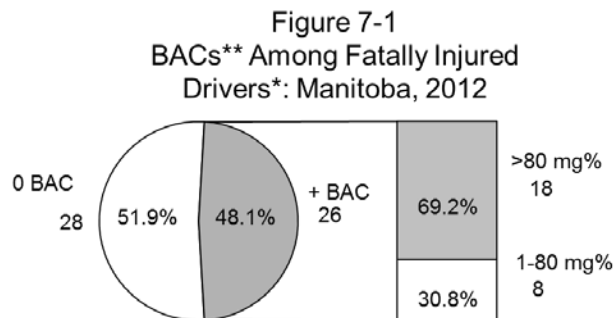
* Truck/van drivers and motorcyclists have been aggregated to ensure that an individual will not be identified.

In Manitoba, 48.0% had been drinking and 17 of 24 (70.8%) fatally injured drinking drivers had BACs over 80 mg%. Although not shown in the table, more refined analyses by different BAC categories show that among tested drivers:

- > 52.0% had BACs of zero mg%;
- > 10.0% had BACs from 1-49 mg%;
- > 4.0% had BACs from 50-80 mg%
- > 4.0% had BACs from 81 to 160 mg%; and,

> 30.0% had BACs over 160 mg%.

In Figure 7-1, the BAC distribution for tested fatally injured drivers is extrapolated to reflect the BAC distribution for all fatally injured drivers. In this figure, 26 of 54 (48.1%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 18 (69.2%) have BACs over 80 mg%.



* excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles
** numbers are estimates based on the BAC distribution of drivers tested for alcohol

7.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 37.5% were aged 26-35; 20.8% were aged 36-45; 16.7% were aged 20-25; and 8.3% were aged 16-19, 46-55 and over 55.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 41.2% were aged 26-35; 17.6% were aged 36-45; 11.8% were aged 20-25, 46-55 and over 55; and 5.9% were aged 16-19.

When comparing the incidence of drinking and driving among fatally injured drivers by age group, fatally injured drivers aged 36-45 were the most likely to have been drinking (83.3%). By contrast, 15.4% of the tested drivers over age 55 had been drinking.

7.2.2 Gender differences. Males dominate the picture as they account for 87.5% of all the fatally injured drivers who had been drinking and 94.1% of all of the fatally injured drivers who were legally impaired.

Males dominate the picture largely because they account for 37 of the 54 drivers (68.5%) who are killed. Fatally injured male drivers were more likely to have been drinking than female drivers (61.8% and 18.8%, respectively). And, 76.2% of the male drivers and 33.3% of the female drivers who were drinking had BACs over the legal limit.

7.2.3 Vehicle differences. Truck/van drivers and motorcyclists have been regrouped into 'other highway vehicles' to ensure that individuals cannot be identified. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 54.2% were drivers of other highway vehicles and 45.8% were automobile drivers. Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 58.8% were drivers of other highway vehicles and 41.2% were automobile drivers.

Within each of the vehicle types, 61.9% of fatally injured drivers of other highway vehicles and 37.9% of automobile drivers had been drinking.

7.2.4 Collision differences. Less than half of the drivers killed (26 of the 54) were involved in single-vehicle collisions but these crashes accounted for a vast majority of the drivers who had been drinking or were legally impaired (75.0% and 82.4%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Almost three-quarters of the drivers involved in single-vehicle crashes (72.0%) were positive for alcohol compared to 24.0% of those involved in multiple-vehicle collisions.

7.2.5 Duration between crash and death time. Given that only one fatally injured driver died more than 30 days after the collision, and this driver was not tested for alcohol, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time cannot be performed.

7.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in Manitoba. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 7-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 448 drivers were involved in crashes in which someone was seriously injured, and among these 10.7% were alcohol-related crashes.

7.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 29.2% were aged 20-25; 18.8% were aged 26-35 and over 55; and 14.6% were aged 16-19 and 36-45. Drivers aged 46-55 accounted for 4.2% of those involved in alcohol-related serious injury crashes.

Approximately one-fifth of the drivers aged 20-25 were involved in alcohol-related serious injury crashes (20.3%). The lowest incidence of involvement in alcohol-related crashes was found for those under 16 (0.0%).

7.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 66.7% were males. The incidence of involvement in alcohol-related serious injury crashes was greater for males than for females (11.9% and 8.9%).

7.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 62.5% were automobile drivers; 31.3% were truck/van drivers; 4.2% were motorcyclists; and 2.1% were off-road vehicle drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for motorcyclists (12.5%) compared to 11.8% for automobile drivers; 10.0% for off-road vehicle drivers, and 9.0% for truck/van drivers.

Table 7-3
Drivers in Alcohol-Related Serious Injury Crashes:
Manitoba, 2012

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	1	0	0.0	0.0
16-19	41	7	17.1	14.6
20-25	69	14	20.3	29.2
26-35	86	9	10.5	18.8
36-45	61	7	11.5	14.6
46-55	71	2	2.8	4.2
>55	119	9	7.6	18.8
<u>Gender</u>				
Male	269	32	11.9	66.7
Female	179	16	8.9	33.3
<u>Vehicle Type</u>				
Auto	254	30	11.8	62.5
Truck/Van	167	15	9.0	31.3
Motorcycle	16	2	12.5	4.2
Other Hwy. Vehicle	1	0	0.0	0.0
Off-Road	10	1	10.0	2.1
<u>Collision Type</u>				
Single-Vehicle	137	42	30.7	87.5
Multiple-Vehicle	311	6	1.9	12.5
TOTAL	448	48	10.7	100.0

7.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 87.5% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 30.7% of these drivers, compared to only 1.9% for drivers involved in multiple-vehicle crashes.

7.4 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in Manitoba during 2012. Table 7-4 shows the prevalence of drug use among fatally injured drivers of highway vehicles as well as the number of drivers who tested positive for various categories of drugs.

As can be seen, Manitoba had a very high testing rate in 2012, with 92.6% of fatally injured drivers being tested for drug use.

Among fatally injured tested drivers, 24 out of 50 (48.0%) were positive for drugs. The most common category of drugs found within drivers testing positive for drug use was CNS depressants (58.3%). Other categories of drugs found in fatally injured drivers testing positive for drugs were narcotic analgesics (37.5%), and CNS stimulants (25.0%).

Table 7-4
Drug Use Among Fatally Injured Drivers of
Highway Vehicles: Manitoba, 2012

Prevalence of Drug Use

Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
54	50	(92.6)	24	(48.0)

Categories of Drugs Found Among Drivers Testing Positive

Drug Category	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
CNS Depressants	14	(58.3)
Narcotic Analgesics	9	(37.5)
CNS Stimulants	6	(25.0)
Cannabis	0	(0.0)
Hallucinogens	0	(0.0)
Dissociative Anesthetics	0	(0.0)
Inhalants	0	(0.0)

* Percentages will not add up to 100% due to multiple drug types found in blood samples of some drivers.

7.5 Trends in alcohol and drug-impaired driving

Sections 7.1 through 7.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol; (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 7.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

7.5.1 Deaths in alcohol-related crashes: 1995-2012. Table 7-5 and Figure 7-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 7.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

As shown in the table and figure, the number of deaths in crashes that involved a drinking driver generally dropped from 46 to a low of 29 between 1995 and 2001. The number of alcohol-related fatalities generally increased to 46 in 2007, decreased to 34 in 2009, rose to 42 in 2011, and decreased to 38 in 2012. The percentage of alcohol-related fatalities increased from 34.8% in 1995 to 40.2% in 2003, decreased to a low of 28.0% in 2005, peaked in 2008 (55.7%), decreased to 38.2% in 2009, rose to 42.0% in 2010, decreased to 37.5% in 2011, and rose to 38.4% in 2012.

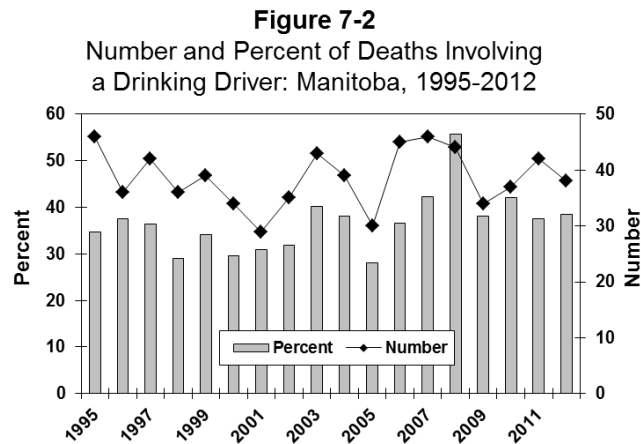
As shown at the bottom of the table, during the 2006-2010 baseline period there was an average of 41 fatalities involving a drinking driver and they accounted for 41.8% of all fatalities. This means that the percent of fatalities involving a drinking driver decreased by 9.8% from 41.8% in the baseline period (2006-2010) to 37.7% in the 2011-2012 period. In terms of the number of persons killed in crashes involving a drinking driver, there was a 2.4% decrease from an average of 41 in the baseline period (2006-2010) to 40 in the 2011-2012 period.

Table 7-5
Number* and Percent of Motor Vehicle Deaths Involving a**
Drinking Driver: Manitoba, 1995-2012

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths Number	% of total	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	132	46	34.8	129	45	34.9
1996	96	36	37.5	95	36	37.9
1997	115	42	36.5	115	42	36.5
1998	124	36	29.0	119	35	29.4
1999	114	39	34.2	113	39	34.5
2000	115	34	29.6	111	34	30.6
2001	94	29	30.9	93	29	31.2
2002	110	35	31.8	109	35	32.1
2003	107	43	40.2	105	42	40.0
2004	102	39	38.2	98	39	39.8
2005	107	30	28.0	107	30	28.0
2006	123	45	36.6	119	44	37.0
2007	109	46	42.2	107	45	42.1
2008	79	44	55.7	78	44	56.4
2009	89	34	38.2	88	34	38.6
2010	88	37	42.0	87	36	41.4
2011	112	42	37.5	109	41	37.6
2012	99	38	38.4	95	37	38.9
2006-2010 baseline	98	41	41.8	96	41	42.7
2011-2012 period	106	40	37.7	102	39	38.2

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.



7.5.2 Alcohol use among fatally injured drivers: Data on alcohol use among fatally injured drivers over the 26-year period from 1987-2012 are shown in Table 7-6. Trends are illustrated in Figure 7-3 which shows changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol (represented by the white area); (2) had BACs below the legal limit (shown by the light grey area); and (3) had BACs over the legal limit (the dark grey area). The data reported here are restricted to drivers who died in less than six hours after the crash (see Section 2.2.2).

As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (60.0%) to a low of 18.8% in 2005, fluctuated until 2010 (35.0%), decreased in 2011 (22.8%), and rose again in 2012 (31.1%). The percent of fatally injured drivers with zero BACs generally increased from a low of 33.0% in 1987 to its highest level in 2005 (79.2%), decreased in 2008 (38.1%), generally increased until 2011 (70.2%), and decreased again in 2012 (53.3%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1994 (18.9%), dropped to a low of 1.9% in 2001, generally increased until 2008 (16.7%), decreased until 2011 (7.0%), and rose again in 2012 (15.6%).

When compared to the 2006-2010 baseline period shown at the bottom of Table 7-6, the percentage of fatally injured drivers with zero BACs in the 2011-2012 period increased by 16.5% (from 53.8% to 62.7%). Among drivers with BACs from 1-80 mg%, there was a 2.1% increase (from 9.6% to 9.8%) and among those with BACs over 80 mg%, there was a 24.7% decrease (from 36.5% to 27.5%).

Table 7-6
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Manitoba, 1987-2012

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	67	60	89.6	20	33.3	4	6.7	36	60.0
1988	64	58	90.6	23	39.7	5	8.6	30	51.7
1989	70	66	94.3	32	48.5	10	15.2	24	36.4
1990	54	49	90.7	25	51.0	1	2.0	23	46.9
1991	63	54	85.7	22	40.7	6	11.1	26	48.1
1992	50	44	88.0	21	47.7	2	4.5	21	47.7
1993	59	41	69.5	18	43.9	3	7.3	20	48.8
1994	57	53	93.0	23	43.4	10	18.9	20	37.7
1995	62	52	83.9	31	59.6	8	15.4	13	25.0
1996	37	36	97.3	17	47.2	3	8.3	16	44.4
1997	56	54	96.4	30	55.6	7	13.0	17	31.5
1998	54	54	100.0	34	63.0	3	5.6	17	31.5
1999	53	52	98.1	34	65.4	3	5.8	15	28.8
2000	56	55	98.2	33	60.0	4	7.3	18	32.7
2001	56	52	92.9	32	61.5	1	1.9	19	36.5
2002	54	52	96.3	33	63.5	2	3.8	17	32.7
2003	54	53	98.1	27	50.9	4	7.5	22	41.5
2004	48	45	93.8	25	55.6	2	4.4	18	40.0
2005	48	48	100.0	38	79.2	1	2.1	9	18.8
2006	63	63	100.0	38	60.3	3	4.8	22	34.9
2007	59	58	98.3	32	55.2	2	3.4	24	41.4
2008	42	42	100.0	16	38.1	7	16.7	19	45.2
2009	58	56	96.6	32	57.1	7	12.5	17	30.4
2010	41	40	97.6	22	55.0	4	10.0	14	35.0
2011	57	57	100.0	40	70.2	4	7.0	13	22.8
2012	46	45	97.8	24	53.3	7	15.6	14	31.1
2006-2010 baseline	53	52	(98.1)	28	(53.8)	5	(9.6)	19	(36.5)
2011-2012 period	51	51	(100.0)	32	(62.7)	5	(9.8)	14	(27.5)

* dying in less than six hours.

Figure 7-3
Trends in Alcohol Use Among Driver
Fatalities: Manitoba, 1987-2012

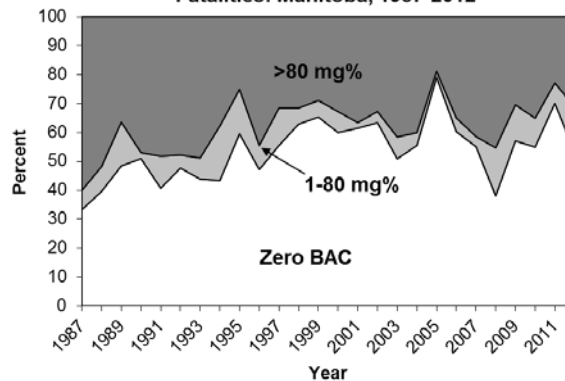


Table 7-7 and Figure 7-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2012. These results also differ from those reported above for several reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 7-1). Second, estimates are based on all fatally injured drivers, not just those who died in less than six hours from the crash. Third, drivers are grouped in only two BAC categories: zero and positive.

As can be seen at the bottom of Table 7-7, the percentage of fatally injured drivers testing positive for alcohol from 2006-2010, the baseline period, is 45.8%. In the 2011-2012 period, 38.6% of fatally injured drivers tested positive for alcohol, a 15.7% decrease from the baseline period.

Table 7-7
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
Manitoba, 1990-2012

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	64	32	(50.0)	32	(50.0)
1991	72	31	(43.1)	41	(56.9)
1992	58	29	(50.0)	29	(50.0)
1993	68	35	(51.5)	33	(48.5)
1994	64	29	(45.3)	35	(54.7)
1995	70	42	(60.0)	28	(40.0)
1996	48	21	(43.8)	27	(56.3)
1997	65	39	(60.0)	26	(40.0)
1998	67	44	(65.7)	23	(34.3)
1999	60	40	(66.7)	20	(33.3)
2000	67	42	(62.7)	25	(37.3)
2001	62	39	(62.9)	23	(37.1)
2002	59	37	(62.7)	22	(37.3)
2003	62	29	(46.8)	33	(53.2)
2004	57	34	(59.6)	23	(40.4)
2005	55	42	(76.4)	13	(23.6)
2006	72	44	(61.1)	28	(38.9)
2007	69	39	(56.5)	30	(43.5)
2008	47	18	(38.3)	29	(61.7)
2009	63	35	(55.6)	28	(44.4)
2010	45	26	(57.8)	19	(42.2)
2011	61	43	(70.5)	18	(29.5)
2012	54	28	(51.9)	26	(48.1)
2006-2010 baseline	59	32	(54.2)	27	(45.8)
2011-2012 period	57	35	(61.4)	22	(38.6)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol



7.5.3 Drivers in serious injury crashes: Table 7-8 and Figure 7-5 show information on drivers involved in alcohol-related serious injury crashes. As shown in Table 7-8, during the baseline period (2006-2010), an average of 18.3% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 13.2% in the 2011-2012 period, a 27.9% decrease in the problem.

Table 7-8

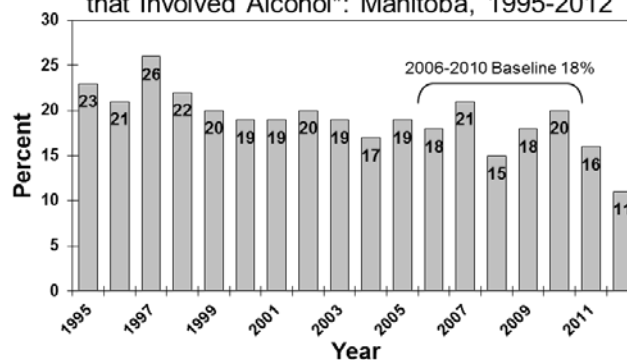
Number and Percent of All Drivers in Serious Injury Crashes*
that Involved Alcohol: Manitoba, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	771	175	(22.7)
1996	818	175	(21.4)
1997	650	168	(25.8)
1998	682	153	(22.4)
1999	619	123	(19.9)
2000	610	114	(18.7)
2001	622	116	(18.6)
2002	540	109	(20.2)
2003	546	103	(18.9)
2004	574	97	(16.9)
2005	511	97	(19.0)
2006	549	96	(17.5)
2007	486	104	(21.4)
2008	450	69	(15.3)
2009	469	85	(18.1)
2010	398	78	(19.6)
2011	417	65	(15.6)
2012	448	48	(10.7)
2006-2010 baseline	470	86	(18.3)
2011-2012 period	433	57	(13.2)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 7-5

Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol*: Manitoba, 1995-2012



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 7-9 and Figure 7-6 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 7.3 and in Table 7-8 and Figure 7-5 above because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has generally declined. Between 1995 and 2004 the percentage of all drivers in serious injury crashes that involved alcohol generally decreased from 22.9% to 17.3%, rose to 22.1% in 2007, decreased to 15.6% in 2008, rose to 18.8% in 2009, and decreased again to 10.7% in 2012.

In the baseline period (2006-2010), an average of 18.4% of drivers in serious injury crashes were in an alcohol-involved crash. During the 2011-2012 period, the incidence of drivers in alcohol-involved crashes dropped to 13.1%, a 28.8% decrease.

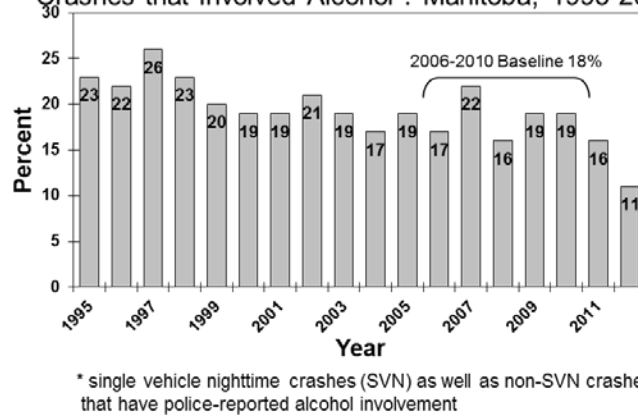
Table 7-9
Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: Manitoba, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	743	170	(22.9)
1996	804	174	(21.6)
1997	630	162	(25.7)
1998	657	151	(23.0)
1999	595	120	(20.2)
2000	587	110	(18.7)
2001	597	115	(19.3)
2002	525	108	(20.6)
2003	532	102	(19.2)
2004	550	95	(17.3)
2005	482	92	(19.1)
2006	526	91	(17.3)
2007	467	103	(22.1)
2008	437	68	(15.6)
2009	452	85	(18.8)
2010	341	63	(18.5)
2011	403	63	(15.6)
2012	438	47	(10.7)
2006-2010 baseline	445	82	(18.4)
2011-2012 period	421	55	(13.1)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 7-6
Percent of Drivers of Highway Vehicles in Serious Injury
Crashes that Involved Alcohol*: Manitoba, 1995-2012



7.5.4 Drug use among fatally injured drivers: Table 7-10 and Figure 7-7 show data on drug use among fatally injured drivers over a 13-year period (2000-2012). Similar to Table 7-6, these results are based on fatally injured drivers of highway vehicles who died less than six hours after the crash (see Section 2.2.5).

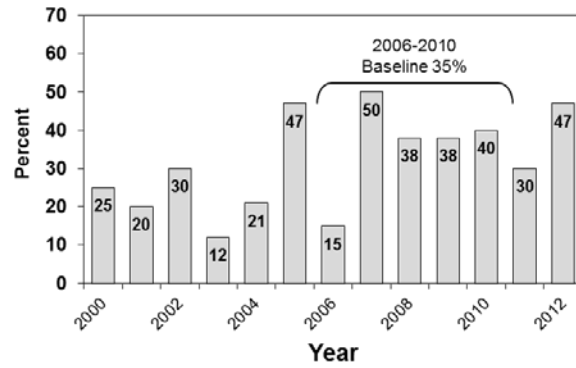
As can be seen at the bottom of Table 7-10, the percentage of fatally injured drivers testing positive for drugs from 2006-2010, the baseline period, is 35.3%. In the 2011-2012 period, 38.0% of fatally injured drivers tested positive for drugs, a 7.6% increase from the baseline period.

Table 7-10
Drug Use Among Fatally Injured Drivers of Highway Vehicles:
Manitoba, 2000-2012

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative : (% Tested)	Positive : (% Tested)		
2000	56	53	94.6	40	75.5	13	24.5
2001	56	49	87.5	39	79.6	10	20.4
2002	54	50	92.6	35	70.0	15	30.0
2003	54	52	96.3	46	88.5	6	11.5
2004	47	43	91.5	34	79.1	9	20.9
2005	48	47	97.9	25	53.2	22	46.8
2006	63	61	96.8	52	85.2	9	14.8
2007	59	58	98.3	29	50.0	29	50.0
2008	42	40	95.2	25	62.5	15	37.5
2009	58	56	96.6	35	62.5	21	37.5
2010	41	40	97.6	24	60.0	16	40.0
2011	57	56	98.2	39	69.6	17	30.4
2012	46	45	97.8	24	53.3	21	46.7
2006-2010 baseline	53	51	96.2	33	64.7	18	35.3
2011-2012 period	51	50	98.0	31	62.0	19	38.0

* dying in less than six hours.

Figure 7-7
Percent of Fatally Injured Drivers
Positive for Drugs: Manitoba, 2000-2012



8.0 ONTARIO

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in Ontario during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 8.1);
- > alcohol use among fatally injured drivers (Section 8.2);
- > drivers involved in alcohol-related serious injury crashes (Section 8.3);
- > drug use among fatally injured drivers (Section 8.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 8.5).

8.1 Deaths in alcohol-related crashes

Table 8-1 presents information on people who died in alcohol-related crashes in Ontario during 2012 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, it can be seen that among persons dying within 12 months of the collision, 102 people aged 26-35 were killed in motor vehicle crashes in Ontario during 2012. And, in 94 cases (92.2%) it was possible to determine if alcohol was a factor in the crash. The next column shows the number of people killed in crashes that were known to be alcohol-involved. In 2012, 46 people aged 26-35 died in alcohol-related crashes in Ontario. The next column expresses this as a percentage – i.e., 48.9% of the 26-35 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 26-35 year olds represent 22.2% of all the people killed in alcohol-related crashes in Ontario during 2012.

An examination of the section for persons dying within 30 days of the collision shows that 102 persons aged 26-35 died in motor vehicle crashes. In 94 of these cases (92.2%), it was possible to determine if alcohol was a factor in the crash. Among these persons, 46 (48.9%) were alcohol-related deaths. And 26-35 year olds accounted for 22.2% of people dying in alcohol-related crashes.

The totals at the bottom of the table provide a summary. As can be seen, 728 persons died within 12 months of a motor vehicle crash in Ontario during 2012. In 651 (89.4%) of these cases, it was possible to

determine if alcohol was a factor. Of these known cases, 207 (31.8%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (728 x .318) it can be estimated that *in Ontario during 2012, 231 persons died in alcohol-related crashes within 12 months of the collision.*

Among the 712 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 90.4% of the cases. Of these known cases, 207 (32.1%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (712 x .321) it can be estimated that *in Ontario during 2012, 229 persons died in alcohol-related crashes within 30 days of the collision.*

Table 8-1
Deaths in Alcohol-Related Crashes: Ontario, 2012

Deaths in Alcohol-Related Crashes: Ontario, 2012												
	Persons Dying Within 12 Months of Collision						Persons Dying Within 30 Days of Collision					
Category of Victim	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)		
		No.	% of total	No.	% of known	% of all ARDs		No.	% of total	No.	% of known	% of all ARDs
<u>Age Group</u>												
<16	25	20	80.0	2	10.0	1.0	25	20	80.0	2	10.0	1.0
16-19	62	56	90.3	18	32.1	8.7	62	56	90.3	18	32.1	8.7
20-25	103	98	95.1	49	50.0	23.7	103	98	95.1	49	50.0	23.7
26-35	102	94	92.2	46	48.9	22.2	102	94	92.2	46	48.9	22.2
36-45	76	70	92.1	33	47.1	15.9	76	70	92.1	33	47.1	15.9
46-55	114	100	87.7	34	34.0	16.4	113	100	88.5	34	34.0	16.4
>55	246	213	86.6	25	11.7	12.1	231	206	89.2	25	12.1	12.1
<u>Gender</u>												
Male	511	454	88.8	167	36.8	80.7	497	449	90.3	167	37.2	80.7
Female	217	197	90.8	40	20.3	19.3	215	195	90.7	40	20.5	19.3
<u>Victim Type</u>												
Driver/ Operator	433	401	92.6	141	35.2	68.1	426	398	93.4	141	35.4	68.1
Passenger	145	124	85.5	34	27.4	16.4	143	123	86.0	34	27.6	16.4
Pedestrian	150	126	84.0	32	25.4	15.5	143	123	86.0	32	26.0	15.5
<u>Vehicle Occupied</u>												
Automobiles	300	276	92.0	89	32.2	43.0	294	274	93.2	89	32.5	43.0
Trucks/Vans	120	107	89.2	36	33.6	17.4	119	106	89.1	36	34.0	17.4
Motorcycles	65	61	93.8	16	26.2	7.7	64	60	93.8	16	26.7	7.7
Other Hwy. Vehicles	15	12	80.0	1	8.3	0.5	15	12	80.0	1	8.3	0.5
Offroad Vehicles	77	69	89.6	33	47.8	15.9	77	69	89.6	33	47.8	15.9
(Pedestrians)	150	126	84.0	32	25.4	15.5	143	123	86.0	32	26.0	15.5
Unknown	1	0	0.0	0	0.0	0.0	0	0	0.0	0	0.0	0.0
<u>Collision Location</u>												
Public Road	671	612	91.2	186	30.4	89.9	659	606	92.0	186	30.7	89.9
Offroad	57	39	68.4	21	53.8	10.1	53	38	71.7	21	55.3	10.1
TOTAL	728	651	89.4	207	31.8	100.0	712	644	90.4	207	32.1	100.0

8.1.1 Victim age. Of all the people who died in alcohol-related crashes within 12 months of the collision, 23.7% (see last column in the first section) were aged 20-25; 22.2% were aged 26-35; 16.4% were aged 46-55; 15.9% were aged 36-45; 12.1% were over age 55; 8.7% were aged 16-19; and 1.0% were under 16.

The highest incidence of alcohol involvement occurred in the crashes in which a person aged 20-25 and 26-35 died (50.0% and 48.9% respectively). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – 10.0% of persons under 16 and 11.7% of the fatalities over 55 years of age died in crashes involving alcohol.

8.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 80.7% were males. The incidence of alcohol in crashes in which a male died (36.8%) was greater than the incidence of alcohol in crashes in which a female died (20.3%).

8.1.3 Victim type. Of all the people who died in alcohol-related crashes within 12 months of the collision, 68.1% were driver/operators of a vehicle; 16.4% were passengers; and 15.5% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (35.2%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 27.4% of the crashes in which a passenger died and 25.4% of the crashes in which a pedestrian died.

8.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes within 12 months of the collision, 43.0% were in an automobile; 17.4% were truck/van occupants; 15.9% were off-road vehicle occupants; and 7.7% were motorcyclists.

Within each of these vehicle types, the incidence of alcohol involvement in which a truck/van occupant died was greater than the incidence of alcohol in crashes in which an automobile occupant or motorcyclist died (33.6% versus 32.2% and 26.2%). Among off-road vehicle occupants, 47.8% were involved in an alcohol-related crash.

8.1.5 Collision location. Of all the people who died in alcohol-related crashes within 12 months of the collision, 89.9% died in a collision which occurred on a public road and 10.1% died in an off-road collision. However, the incidence of alcohol involvement in which a victim died in an alcohol-related crash was greater for those dying in off-road collisions (53.8%) than it was for persons dying in a collision which occurred on a public road (30.4%).

8.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured within 12 months of the collision in Ontario during 2012. Table 8-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time and death time (within 12 months vs. within 30 days of the collision).

The first column in the table shows the number of drivers killed. The next columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests: the first three of these present results for drivers who showed any evidence of alcohol; the last three columns present information on drivers who had BACs over the statutory limit of 80 mg%.

To illustrate, among 20-25 year olds there were 54 drivers killed during 2012; 50 of these fatally injured drivers (92.6%) were tested for alcohol. Of those who were tested, 21 (42.0%) were positive for alcohol. This means that 20-25 year old fatally injured drinking drivers accounted for 21.9% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that 18 of the 50 (36.0%) fatally injured 20-25 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that 18 of the 21 drivers who were

positive for alcohol had BACs in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, 20-25 year old drivers accounted for 22.2% of all the drivers with BACs over the legal limit.

Table 8-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Ontario, 2012

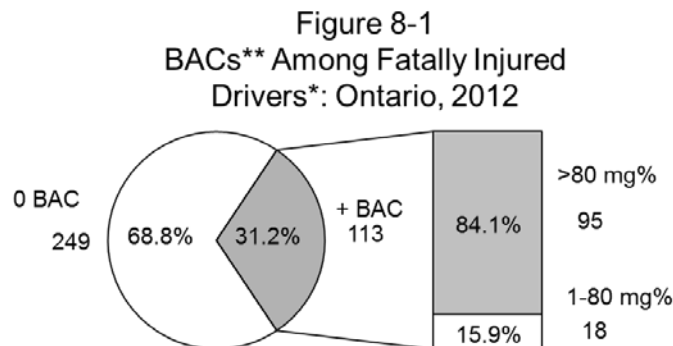
Category of Driver	No. of Drivers	Drivers Tested		Positive BAC			BAC >80 mg%		
		No.	% of total	No.	% of tested	% of all drivers with +BAC	No.	% of tested	% of all drivers with BAC >80 mg%
<u>Age Group</u>									
16-19	18	15	83.3	5	33.3	5.2	3	20.0	3.7
20-25	54	50	92.6	21	42.0	21.9	18	36.0	22.2
26-35	65	61	93.8	28	45.9	29.2	25	41.0	30.9
36-45	49	43	87.8	17	39.5	17.7	14	32.6	17.3
46-55	61	53	86.9	17	32.1	17.7	15	28.3	18.5
>55	115	87	75.7	8	9.2	8.3	6	6.9	7.4
<u>Gender</u>									
Male	276	237	85.9	79	33.3	82.3	65	27.4	80.2
Female	86	72	83.7	17	23.6	17.7	16	22.2	19.8
<u>Vehicle Type</u>									
Automobiles	215	179	83.3	58	32.4	60.4	51	28.5	63.0
Truck/Van	72	65	90.3	24	36.9	25.0	21	32.3	25.9
Motorcycles	64	54	84.4	13	24.1	13.5	8	14.8	9.9
Tractor Trailer	11	11	100.0	1	9.1	1.0	1	9.1	1.2
<u>Collision Type</u>									
Single vehicle	160	130	81.3	62	47.7	64.6	55	42.3	67.9
Multiple vehicle	202	179	88.6	34	19.0	35.4	26	14.5	32.1
<u>Duration Between Crash and Death Time</u>									
Within 30 Days	358	309	86.3	96	31.1	100.0	81	26.2	100.0
> 30 Days	4	0	0.0	0	0.0	0.0	0	0.0	0.0
TOTAL	362	309	85.4	96	31.1	100.0	81	26.2	100.0

The main findings are shown by the totals at the bottom of the table. Ontario had a high testing rate in 2012, with 85.4% of fatally injured drivers being tested for alcohol use.

In Ontario, 31.1% had been drinking and 81 of 96 (84.4%) fatally injured drinking drivers had BACs over 80 mg%. Although not shown in the table, more refined analyses by different BAC categories show that among tested drivers:

- > 68.9% had BACs of zero mg%;
- > 3.6% had BACs from 1-49 mg%;
- > 1.3% had BACs from 50-80 mg%
- > 5.2% had BACs from 81 to 160 mg%; and,
- > 21.0% had BACs over 160 mg%.

In Figure 8-1, the BAC distribution for tested fatally injured drivers is extrapolated to reflect the BAC distribution for all fatally injured drivers. In this figure, 113 of 362 (31.2%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 95 (84.1%) have BACs over 80 mg%.



* excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles
 ** numbers are estimates based on the BAC distribution of drivers tested for alcohol

8.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 29.2% were aged 26-35; 21.9% were aged 20-25; 17.7% were aged 36-45 and 46-55; 8.3% were over 55; and 5.2% were aged 16-19.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 30.9% were aged 26-35; 22.2% were aged 20-25; 18.5% were aged 46-55; 17.3% were aged 36-45; 7.4% were aged over 55; and 3.7% were aged 16-19.

When comparing the incidence of drinking and driving among fatally injured drivers by age group, fatally injured drivers aged 26-35 were the most likely to have been drinking (45.9%). By contrast, only 9.2% of the tested drivers aged over 55 had been drinking.

8.2.2 Gender differences. Males dominate the picture as they account for 82.3% of all the fatally injured drivers who had been drinking and 80.2% of all of the fatally injured drivers who were legally impaired.

Males dominate the picture largely because they account for most of the drivers who are killed (276 of the 362 drivers are males). Fatally injured male drivers were more likely to have been drinking than female drivers (33.3% and 23.6%, respectively). And, 82.3% of the male and 94.1% of the female drivers who were drinking had BACs over the legal limit.

8.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 60.4% were automobile drivers; 25.0% were truck/van drivers; 13.5% were motorcyclists; and 1.0% were tractor-trailer drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 63.0% were automobile drivers, 25.9% were truck/van drivers; 9.9% were motorcyclists; and 1.2% were tractor-trailer drivers.

Within each of the vehicle types, 36.9% of truck/van drivers, 32.4% of fatally injured automobile drivers, 24.1% of motorcyclists; and 9.1% of tractor-trailer drivers had been drinking.

8.2.4 Collision differences. Less than half of the drivers killed (160 of the 362) were involved in single-vehicle collisions but these crashes accounted for two-thirds of the drivers who had been drinking or were legally impaired (64.6% and 67.9%, respectively).

The reason for this apparent disparity is because alcohol is over represented in single-vehicle crashes. Almost half of the drivers involved in single-vehicle crashes (47.7%) were positive for alcohol, compared to only 19.0% of those involved in multiple-vehicle collisions.

8.2.5 Duration between crash and death time. Given that only four fatally injured drivers died more than 30 days after the collision, and none of these drivers were tested for alcohol, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time cannot be performed.

8.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in Ontario. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 8-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 3,450 drivers were involved in crashes in which someone was seriously injured, and among these 14.6% were alcohol-related crashes.

8.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 27.2% were aged 26-35, 21.3% were aged 20-25 and 15.3% were aged 36-45. Drivers under 16 accounted for 0.2% and drivers aged 16-19 accounted for only 8.3% of those involved in alcohol-related serious injury crashes.

One-quarter of the drivers under 16 years of age and 16-19 were involved in alcohol-related serious injury crashes (25.0% and 24.3%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for those over 55 (6.8%).

8.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 77.7% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (16.4% and 10.5%, respectively).

**Table 8-3
Drivers in Alcohol-Related Serious Injury Crashes:
Ontario, 2012**

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	4	1	25.0	0.2
16-19	173	42	24.3	8.3
20-25	465	107	23.0	21.3
26-35	651	137	21.0	27.2
36-45	588	77	13.1	15.3
46-55	669	73	10.9	14.5
>55	754	51	6.8	10.1
unknown	146	15	10.3	3.0
<u>Gender</u>				
Male	2383	391	16.4	77.7
Female	1062	111	10.5	22.1
unknown	5	1	20.0	0.2
<u>Vehicle Type</u>				
Auto	2109	342	16.2	68.0
Truck/Van	672	91	13.5	18.1
Motorcycle	324	33	10.2	6.6
Tractor Trailer	94	15	16.0	3.0
Other Hwy. Vehicle	56	7	12.5	1.4
Off-Road	183	10	5.5	2.0
Unknown	12	5	41.7	1.0
<u>Collision Type</u>				
Single-Vehicle	1014	366	36.1	72.8
Multiple-Vehicle	2436	137	5.6	27.2
TOTAL	3450	503	14.6	100.0

8.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 68.0% were automobile drivers; 18.1% were truck/van drivers; 6.6% were motorcyclists and 3.0% were tractor-trailer drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers – 16.2% of these drivers were in crashes that involved alcohol, compared to 16.0% of tractor-trailer; 13.5% of truck/van drivers; 12.5% for drivers of other highway vehicles and 10.2% for motorcyclists. Among off-road vehicle drivers, 5.5% were involved in alcohol-related crashes.

8.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 72.8% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 36.1% of these drivers, compared to only 5.6% for drivers involved in multiple-vehicle crashes.

8.4 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in Ontario during 2012. Table 8-4 shows the prevalence of drug use among fatally injured drivers of highway vehicles as well as the number of drivers who tested positive for various categories of drugs.

As can be seen, Ontario had a high testing rate in 2012, with 73.2% of fatally injured drivers being tested for drug use.

Among fatally injured tested drivers, 125 out of 265 (47.2%) were positive for drugs. The most common category of drugs found within drivers testing positive for drug use was cannabis (57.6%). Other categories of drugs found in fatally injured drivers testing positive for drugs were CNS depressants (38.4%), CNS stimulants (17.6%), narcotic analgesics (16.8%), dissociative anesthetics (2.4%), and hallucinogens (0.8%).

Table 8-4
Drug Use Among Fatally Injured Drivers of
Highway Vehicles: Ontario, 2012

Prevalence of Drug Use

Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
362	265	(73.2)	125	(47.2)

Categories of Drugs Found Among Drivers Testing Positive

Drug Category	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
Cannabis	72	(57.6)
CNS Depressants	48	(38.4)
CNS Stimulants	22	(17.6)
Narcotic Analgesics	21	(16.8)
Dissociative Anesthetics	3	(2.4)
Hallucinogens	1	(0.8)
Inhalants	0	(0.0)

* Percentages will not add up to 100% due to multiple drug types found in blood samples of some drivers.

8.5 Trends in alcohol and drug-impaired driving

Sections 8.1 through 8.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol; (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 8.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

8.5.1 Deaths in alcohol-related crashes: 1995-2012. Table 8-5 and Figure 8-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 8.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is

an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

As shown in the figure, the number of deaths in crashes that involved a drinking driver generally dropped from 399 to 210 between 1995 and 2005. The number of deaths decreased to 169 in 2009, rose to 181 in 2010, decreased to a low of 138 in 2011, and rose again to 169 in 2012. The percentage of alcohol-related fatalities generally declined from 37.7% in 1995 to 25.6% in 2002, rose to 28.9% in 2006, decreased to 26.9% in 2009, rose to 28.9% in 2010, dropped to a low of 24.6% in 2011, and rose again to 26.0% in 2012.

As shown at the bottom of the table, during the 2006-2010 baseline period there was an average of 199 fatalities involving a drinking driver and they accounted for 28.2% of all fatalities. Thus, it can be seen that the percent of fatalities involving a drinking driver decreased by 9.9% from 28.2% in the baseline period (2006-2010) to 25.4% in the 2011-2012 period. And, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 22.6% decrease from an average of 199 in the baseline period (2006-2010) to 154 in the 2011-2012 period.

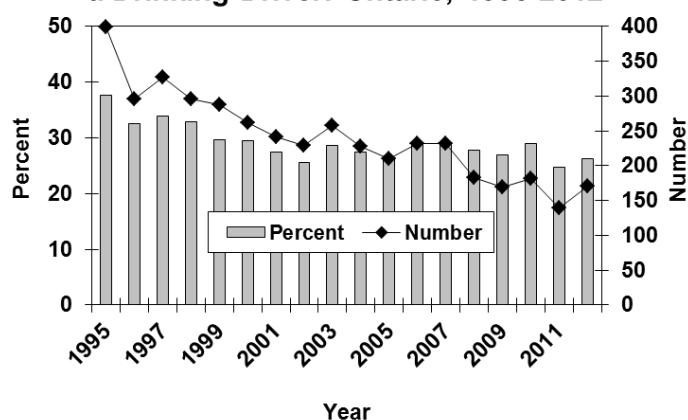
Table 8-5
Number* and Percent of Motor Vehicle Deaths Involving a**
Drinking Driver: Ontario, 1995-2012

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths Number	% of total	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	1057	399	37.7	1042	391	37.5
1996	911	296	32.5	903	293	32.4
1997	964	327	33.9	941	319	33.9
1998	900	295	32.8	872	289	33.1
1999	966	287	29.7	940	282	30.0
2000	886	261	29.5	841	252	30.0
2001	878	241	27.4	822	230	28.0
2002	895	229	25.6	823	215	26.1
2003	903	258	28.6	883	253	28.7
2004	825	227	27.5	793	214	27.0
2005	802	210	26.2	777	205	26.4
2006	803	232	28.9	782	228	29.2
2007	805	232	28.8	783	229	29.2
2008	660	183	27.7	636	179	28.1
2009	628	169	26.9	601	163	27.1
2010	627	181	28.9	612	179	29.2
2011	560	138	24.6	550	137	24.9
2012	651	169	26.0	640	168	26.3
2006-2010 baseline	705	199	28.2	683	196	28.7
2011-2012 period	606	154	25.4	595	153	25.7

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.

Figure 8-2
Number and Percent of Deaths Involving
a Drinking Driver: Ontario, 1995-2012



8.5.2 Alcohol use among fatally injured drivers: Data on alcohol use among fatally injured drivers over the 26-year period from 1987-2012 are shown in Table 8-6. Trends are illustrated in Figure 8-3 which shows changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol (represented by the white area); (2) had BACs below the legal limit (shown by the light grey area); and (3) had BACs over the legal limit (the dark grey area). The data reported here are restricted to drivers who died in less than six hours after the crash (see Section 2.2.2).

As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (39.6%) to 2008 (21.1%), rose until 2010 (26.6%) decreased in 2011 (22.8%), and rose again in 2012 (25.4%). The percent of fatally injured drivers with zero BACs generally increased from 1987 (53.0%) to its highest level in 2008 (74.2%), decreased until 2010 (69.2%) rose in 2011 (71.5%), and decreased again in 2012 (69.5%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1988 (12.5%), dropped in 2001 (4.3%), rose in 2003 (5.9%), dropped in 2005 (4.8%), rose in 2007 (8.5%), decreased to its lowest mark in 2009 (3.9%), rose in 2011 (5.7%), and decreased again in 2012 (5.0%).

When compared to the 2006-2010 baseline period, the percentage of fatally injured drivers with zero BACs in the 2011-2012 period increased by 0.9% (from 69.6% to 70.2%). Among drivers with BACs from 1-80 mg%, there was an 8.3% decrease (from 6.0% to 5.5%). Among drivers with BACs over 80 mg%, there was no change (from 24.4% to 24.4%).

Table 8-6
Alcohol Use Among Fatally Injured Drivers:
Ontario, 1987-2012

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	613	540	88.1	286	53.0	40	7.4	214	39.6
1988	555	521	93.9	281	53.9	65	12.5	175	33.6
1989	642	586	91.3	345	58.9	49	8.4	192	32.8
1990	545	486	89.2	287	59.1	37	7.6	162	33.3
1991	531	462	87.0	255	55.2	37	8.0	170	36.8
1992	538	473	87.9	256	54.1	37	7.8	180	38.1
1993	604	519	85.9	287	55.3	41	7.9	191	36.8
1994	548	508	92.7	287	56.5	38	7.5	183	36.0
1995	532	480	90.2	278	57.9	42	8.8	160	33.3
1996	424	402	94.8	255	63.4	32	8.0	115	28.6
1997	478	434	90.8	282	65.0	34	7.8	118	27.2
1998	427	399	93.4	257	64.4	26	6.5	116	29.1
1999	487	443	91.0	316	71.3	24	5.4	103	23.3
2000	418	406	97.1	280	69.0	27	6.7	99	24.4
2001	424	419	98.8	293	69.9	18	4.3	108	25.8
2002	418	407	97.4	294	72.2	20	4.9	93	22.9
2003	435	421	96.8	288	68.4	25	5.9	108	25.7
2004	427	422	98.8	296	70.1	24	5.7	102	24.2
2005	387	374	96.6	260	69.5	18	4.8	96	25.7
2006	384	370	96.4	248	67.0	28	7.6	94	25.4
2007	429	414	96.5	283	68.4	35	8.5	96	23.2
2008	339	322	95.0	239	74.2	15	4.7	68	21.1
2009	294	280	95.2	196	70.0	11	3.9	73	26.1
2010	307	289	94.1	200	69.2	12	4.2	77	26.6
2011	275	263	95.6	188	71.5	15	5.7	60	22.8
2012	295	279	94.6	194	69.5	14	5.0	71	25.4
2006-2010 baseline	351	335	(95.4)	233	(69.6)	20	(6.0)	82	(24.4)
2011-2012 period	285	272	(95.4)	191	(70.2)	15	(5.5)	66	(24.4)

* dying in less than six hours.

Figure 8-3
Trends in Alcohol Use Among Driver
Fatalities: Ontario, 1987-2012

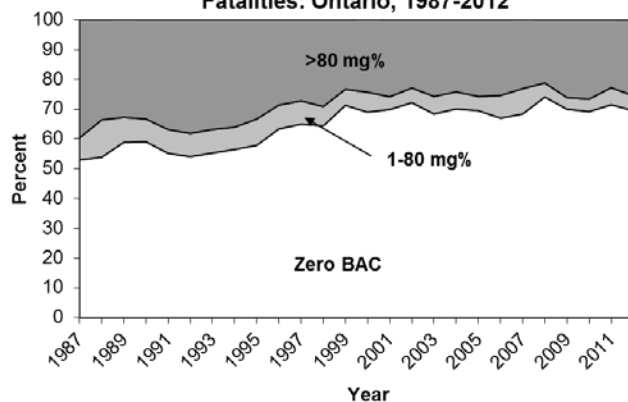


Table 8-7 and Figure 8-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2012. These results also differ from those reported above for several reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 8-1). Second, estimates are based on all fatally injured drivers, not just those who died in less than six hours from the crash. Third, drivers are grouped in only two BAC categories: zero and positive.

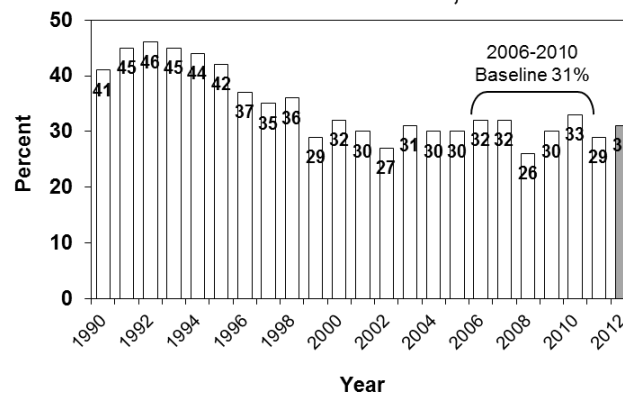
As can be seen in Table 8-7, the baseline percentage of fatally injured drivers testing positive for alcohol from 2006-2010 is 30.5%. In the 2011-2012 period, 30.3% of fatally injured drivers tested positive for alcohol, a 0.7% decrease from the baseline period.

Table 8-7
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
Ontario, 1990-2012

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	656	388	(59.1)	268	(40.9)
1991	662	362	(54.7)	300	(45.3)
1992	678	364	(53.7)	314	(46.3)
1993	711	391	(55.0)	320	(45.0)
1994	628	354	(56.4)	274	(43.6)
1995	630	367	(58.3)	263	(41.7)
1996	523	330	(63.1)	193	(36.9)
1997	594	384	(64.6)	210	(35.4)
1998	523	337	(64.4)	186	(35.6)
1999	568	401	(70.6)	167	(29.4)
2000	517	354	(68.5)	163	(31.5)
2001	521	366	(70.2)	155	(29.8)
2002	518	378	(73.0)	140	(27.0)
2003	518	357	(68.9)	161	(31.1)
2004	503	352	(70.0)	151	(30.0)
2005	481	337	(70.1)	144	(29.9)
2006	462	314	(68.0)	148	(32.0)
2007	498	341	(68.5)	157	(31.5)
2008	425	313	(73.6)	112	(26.4)
2009	366	256	(69.9)	110	(30.1)
2010	394	265	(67.3)	129	(32.7)
2011	331	235	(71.0)	96	(29.0)
2012	362	249	(68.8)	113	(31.2)
2006-2010 baseline	429	298	(69.5)	131	(30.5)
2011-2012 period	347	242	(69.7)	105	(30.3)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol

Figure 8-4
Percent of Fatally Injured Drivers*
Positive for Alcohol: Ontario, 1990-2012



8.5.3 Drivers in serious injury crashes: Table 8-8 and Figure 8-5 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (2006-2010), an average of 16.6% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 14.9% in the 2011-2012 period, resulting in a 10.2% decrease in the problem.

Table 8-8

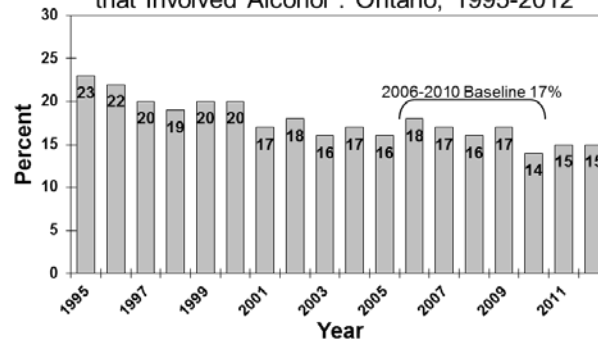
Number and Percent of All Drivers in Serious Injury Crashes* that Involved Alcohol: Ontario, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	6800	1538	(22.6)
1996	6221	1355	(21.8)
1997	5673	1134	(20.0)
1998	5722	1074	(18.8)
1999	5692	1113	(19.6)
2000	5329	1047	(19.6)
2001	5435	934	(17.2)
2002	6165	1092	(17.7)
2003	5327	858	(16.1)
2004	4797	809	(16.9)
2005	4970	811	(16.3)
2006	4319	780	(18.1)
2007	4535	779	(17.2)
2008	4163	679	(16.3)
2009	3489	580	(16.6)
2010	3493	497	(14.2)
2011	3421	519	(15.2)
2012	3450	503	(14.6)
2006-2010 baseline	4000	663	(16.6)
2011-2012 period	3436	511	(14.9)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 8-5

Percent of All Drivers in Serious Injury Crashes that Involved Alcohol*: Ontario, 1995-2012



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 8-9 and Figure 8-6 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 8.3 and in Table 8-8 and Figure 8-5 above because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has been relatively stable. Between 1995 and 2003 the percentage of drivers in serious injury crashes that involved alcohol generally decreased from 22.9% to 16.3%, reached 18.3% in 2006, decreased to a low of 14.5% in 2010, rose to 15.4% in 2011, and decreased again to 15.0% in 2012.

As shown in Table 8-9, in the baseline period (2006-2010) an average of 16.9% of drivers in serious injury crashes were in an alcohol-involved crash. During the 2011-2012 period, the incidence of drivers in alcohol-involved crashes dropped to 15.2%, a 10.1% decrease from the baseline period.

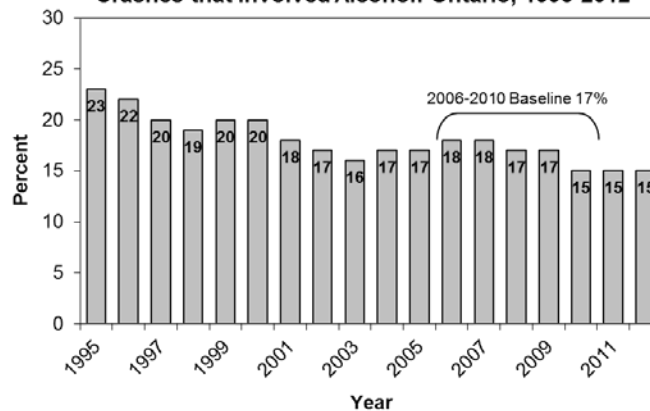
Table 8-9
Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: Ontario, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	6568	1504	(22.9)
1996	6003	1326	(22.1)
1997	5442	1106	(20.3)
1998	5402	1026	(19.0)
1999	5486	1088	(19.8)
2000	5126	1030	(20.1)
2001	5199	916	(17.6)
2002	5468	939	(17.2)
2003	5086	829	(16.3)
2004	4568	787	(17.2)
2005	4724	783	(16.6)
2006	4155	759	(18.3)
2007	4312	763	(17.7)
2008	3949	654	(16.6)
2009	3306	556	(16.8)
2010	3292	477	(14.5)
2011	3243	499	(15.4)
2012	3262	489	(15.0)
2006-2010 baseline	3803	642	(16.9)
2011-2012 period	3253	494	(15.2)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 8-6
Percent of Drivers of Highway Vehicles in Serious Injury
Crashes that Involved Alcohol: Ontario, 1995-2012



8.5.4 Drug use among fatally injured drivers: Table 8-10 and Figure 8-7 show data on drug use among fatally injured drivers over a 13-year period (2000-2012). Similar to Table 8-6, these results are based on fatally injured drivers of highway vehicles who died less than six hours after the crash (see Section 2.2.5).

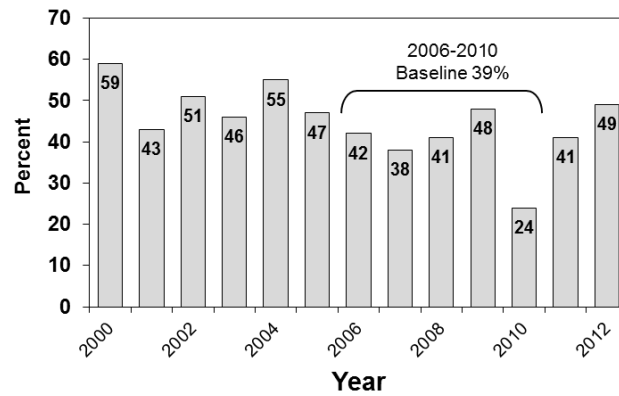
As can be seen at the bottom of Table 8-10, the percentage of fatally injured drivers testing positive for drugs from 2006-2010, the baseline period, is 38.8%. In the 2011-2012 period, 45.3% of fatally injured drivers tested positive for drugs, a 16.8% increase from the baseline period.

Table 8-10
Drug Use Among Fatally Injured Drivers of Highway Vehicles:
Ontario, 2000-2012

Year	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative	(% Tested)	Positive	(% Tested)
2000	418	63	15.1	26	41.3	37	58.7
2001	424	95	22.4	54	56.8	41	43.2
2002	418	96	23.0	47	49.0	49	51.0
2003	434	110	25.3	59	53.6	51	46.4
2004	427	111	26.0	50	45.0	61	55.0
2005	387	135	34.9	72	53.3	63	46.7
2006	384	147	38.3	86	58.5	61	41.5
2007	429	170	39.6	105	61.8	65	38.2
2008	339	39	11.5	23	59.0	16	41.0
2009	294	29	9.9	15	51.7	14	48.3
2010	312	38	12.2	29	76.3	9	23.7
2011	275	221	80.4	130	58.8	91	41.2
2012	295	251	85.1	128	51.0	123	49.0
2006-2010 baseline	352	85	24.1	52	61.2	33	38.8
2011-2012 period	285	236	82.8	129	54.7	107	45.3

* dying in less than six hours.

Figure 8-7
Percent of Fatally Injured Drivers
Positive for Drugs: Ontario, 2000-2012



9.0 QUEBEC

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in Quebec during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 9.1);
- > alcohol use among fatally injured drivers (Section 9.2);
- > drivers involved in alcohol-related serious injury crashes (Section 9.3);
- > drug use among fatally injured drivers (Section 9.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 9.5).

9.1 Deaths in alcohol-related crashes

Table 9-1 presents information on people who died in alcohol-related crashes in Quebec during 2012 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, it can be seen that among persons dying within 12 months of the collision, 63 people aged 26-35 were killed in motor vehicle crashes in Quebec during 2012. And, in 60 cases (95.2%) it was possible to determine if alcohol was a factor in the crash. The next column shows the number of people killed in crashes that were known to be alcohol-involved. In 2012, 24 people aged 26-35 died in alcohol-related crashes in Quebec. The next column expresses this as a percentage – i.e., 40.0% of the 26-35 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 26-35 year olds represent 18.5% of all the people killed in alcohol-related crashes in Quebec during 2012.

An examination of the section for persons dying within 30 days of the collision shows that 62 persons aged 26-35 died in motor vehicle crashes. In 59 of these cases (95.2%), it was possible to determine if alcohol was a factor in the crash. Among these persons, 24 (40.7%) were alcohol-related deaths. And 26-35 year olds accounted for 18.5% of people dying in alcohol-related crashes.

The totals at the bottom of the table provide a summary. As can be seen, 511 persons died within 12 months of a motor vehicle crash in Quebec during 2012. In 474 (92.8%) of these cases, it was possible to

determine if alcohol was a factor. Of these known cases, 130 (27.4%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (511 x .274) it can be estimated that *in Quebec during 2012, 140 persons died in alcohol-related crashes within 12 months of the collision.*

Among the 503 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 92.8% of the cases. Of these known cases, 130 (27.8%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (503 x .278) it can be estimated that *in Quebec during 2012, 140 persons died in alcohol-related crashes within 30 days of the collision.*

9.1.1 Victim age. Of all the people who died in alcohol-related crashes within 12 months of the collision, 23.8% (see last column in the first section) were aged 20-25; 21.5% were aged 46-55; 18.5% were aged 26-35; 14.6% were aged 36-45; 11.5% were over age 55; and 10.0% were aged 16-19.

Table 9-1
Deaths in Alcohol-Related Crashes: Quebec, 2012

	Persons Dying Within 12 Months of Collision						Persons Dying Within 30 Days of Collision					
Category of Victim	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)		
		No.	% of total	No.	% of known	% of all ARDs		No.	% of total	No.	% of known	% of all ARDs
Age Group												
<16	18	13	72.2	0	0.0	0.0	18	13	72.2	0	0.0	0.0
16-19	48	47	97.9	13	27.7	10.0	48	47	97.9	13	27.7	10.0
20-25	75	69	92.0	31	44.9	23.8	75	69	92.0	31	44.9	23.8
26-35	63	60	95.2	24	40.0	18.5	62	59	95.2	24	40.7	18.5
36-45	53	50	94.3	19	38.0	14.6	52	49	94.2	19	38.8	14.6
46-55	90	84	93.3	28	33.3	21.5	88	82	93.2	28	34.1	21.5
>55	164	151	92.1	15	9.9	11.5	160	148	92.5	15	10.1	11.5
Gender												
Male	370	345	93.2	104	30.1	80.0	364	340	93.4	104	30.6	80.0
Female	141	129	91.5	26	20.2	20.0	139	127	91.4	26	20.5	20.0
Victim Type												
Driver/ Operator	371	349	94.1	100	28.7	76.9	365	344	94.2	100	29.1	76.9
Passenger	88	78	88.6	19	24.4	14.6	88	78	88.6	19	24.4	14.6
Pedestrian	52	47	90.4	11	23.4	8.5	50	45	90.0	11	24.4	8.5
Vehicle Occupied												
Automobiles	254	232	91.3	65	28.0	50.0	251	230	91.6	65	28.3	50.0
Trucks/Vans	72	68	94.4	20	29.4	15.4	70	66	94.3	20	30.3	15.4
Motorcycles	47	45	95.7	7	15.6	5.4	47	45	95.7	7	15.6	5.4
Other Hwy. Vehicles	10	9	90.0	1	11.1	0.8	9	8	88.9	1	12.5	0.8
Offroad Vehicles	76	73	96.1	26	35.6	20.0	76	73	96.1	26	35.6	20.0
(Pedestrians)	52	47	90.4	11	23.4	8.5	50	45	90.0	11	24.4	8.5
Collision Location												
Public Road	454	421	92.7	115	27.3	88.5	448	415	92.6	115	27.7	88.5
Offroad	57	53	93.0	15	28.3	11.5	55	52	94.5	15	28.8	11.5
TOTAL	511	474	92.8	130	27.4	100.0	503	467	92.8	130	27.8	100.0

The highest incidence of alcohol involvement occurred in the crashes in which persons aged 20-25 and 26-35 died (44.9% and 40.0% respectively). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities as 0.0% of persons under 16 and 9.9% of the fatalities over 55 years of age died in crashes involving alcohol.

9.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 80.0% were males. The incidence of alcohol in crashes in which a male died (30.1%) was greater than the incidence of alcohol in crashes in which a female died (20.2%).

9.1.3 Victim type. Of all the people who died in alcohol-related crashes within 12 months of the collision, 76.9% were drivers/operators of a vehicle; 14.6% were passengers; and 8.5% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (28.7%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 24.4% of the crashes in which a passenger died and 23.4% of those in which a pedestrian died.

9.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes within 12 months of the collision, 50.0% were in an automobile; 20.0% were off-road vehicle occupants; 15.4% were truck/van occupants; 5.4% were motorcyclists; and 0.8% were occupants of other highway vehicles.

Within each of these vehicle types, the incidence of alcohol involvement in which a truck/van occupant died was slightly greater than the incidence of alcohol in crashes in which an automobile occupant died (29.4% versus 28.0%). Among off-road vehicle occupants, 35.6% died in an alcohol-related crash compared to 15.6% of motorcyclists.

9.1.5 Collision location. Of all the people who died in alcohol-related crashes within 12 months of the collision, 88.5% died in a collision which occurred on a public road and 11.5% died in an off-road collision. However, the incidence of alcohol involvement in which a victim died in an alcohol-related crash was slightly greater for those dying in off-road collisions (28.3%) than it was for persons dying in collisions on public roads (27.3%).

9.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured within 12 months of the collision in Quebec during 2012. Table 9-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time and death time (within 12 months vs. within 30 days of the collision).

The first column in the table shows the number of drivers killed. The next columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests – the first three of these present results for drivers who showed any evidence of alcohol; the last three columns present information on drivers who had BACs over the statutory limit of 80 mg%.

To illustrate, among 16-19 year olds there were 27 drivers killed during 2012; 17 of these fatally injured drivers (63.0%) were tested for alcohol. Of those who were tested, five (29.4%) were positive for alcohol. This means that 16-19 year old fatally injured drinking drivers accounted for 7.6% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that five of the 15 (29.4%) fatally injured 16-19 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that all five of the drivers who were

positive for alcohol had BACs in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, 16-19 year old drivers accounted for 8.8% of all the drivers with BACs over the legal limit.

Table 9-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Quebec, 2012

Quebec, 2012

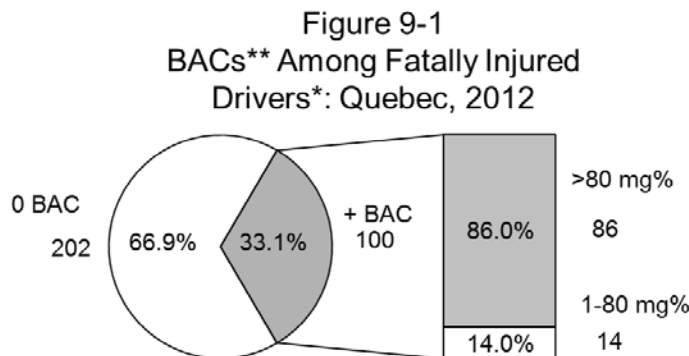
Category of Driver	No. of Drivers	Drivers Tested		Positive BAC			BAC >80 mg%		
		No.	% of total	No.	% of tested	% of all drivers with +BAC	No.	% of tested	% of all drivers with BAC >80 mg%
<u>Age Group</u>									
16-19	27	17	63.0	5	29.4	7.6	5	29.4	8.8
20-25	52	36	69.2	18	50.0	27.3	15	41.7	26.3
26-35	41	27	65.9	14	51.9	21.2	11	40.7	19.3
36-45	34	25	73.5	9	36.0	13.6	9	36.0	15.8
46-55	52	37	71.2	15	40.5	22.7	13	35.1	22.8
>55	96	58	60.4	5	8.6	7.6	4	6.9	7.0
<u>Gender</u>									
Male	236	160	67.8	54	33.8	81.8	46	28.8	80.7
Female	66	40	60.6	12	30.0	18.2	11	27.5	19.3
<u>Vehicle Type</u>									
Automobiles	194	125	64.4	41	32.8	62.1	36	28.8	63.2
Truck/Van	60	45	75.0	17	37.8	25.8	16	35.6	28.1
Motorcycles	40	24	60.0	7	29.2	10.6	5	20.8	8.8
Tractor Trailer	7	5	71.4	1	20.0	1.5	0	0.0	0.0
Other Hwy. Veh.	1	1	100.0	0	0.0	0.0	0	0.0	0.0
<u>Collision Type</u>									
Single vehicle	140	92	65.7	42	45.7	63.6	40	43.5	70.2
Multiple vehicle	162	108	66.7	24	22.2	36.4	17	15.7	29.8
<u>Duration Between Crash and Death Time</u>									
Within 30 Days	297	199	67.0	66	33.2	100.0	57	28.6	100.0
> 30 Days	5	1	20.0	0	0.0	0.0	0	0.0	0.0
TOTAL	302	200	66.2	66	33.0	100.0	57	28.5	100.0

The main findings are shown by the totals at the bottom of the table. Quebec had a low testing rate in 2012, with 65.9% of fatally injured drivers being tested for alcohol use.

In Quebec, 33.2% had been drinking and 57 of 66 (86.4%) fatally injured drinking drivers had BACs over 80 mg%. Although not shown in the table, more refined analyses by different BAC categories show that among tested drivers:

- > 66.8% had BACs of zero mg%;
- > 3.0% had BACs from 1-49 mg%;
- > 1.5% had BACs from 50-80 mg%;
- > 10.6% had BACs from 81 to 160 mg%; and,
- > 18.1% had BACs over 160 mg%.

In Figure 9-1, the BAC distribution for tested fatally injured drivers is extrapolated to reflect the BAC distribution for all fatally injured drivers. In this figure, 100 of 302 (33.1%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 86 (86.0%) have BACs over 80 mg%.



* excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles
 ** numbers are estimates based on the BAC distribution of drivers tested for alcohol

9.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with positive BAC), 27.3% were aged 20-25; 22.7% were aged 46-55; 21.2% were aged 26-35; 13.6% were aged 36-45; and 7.6% were aged 16-19 and over 55.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 26.3% were aged 20-25; 22.8% were aged 46-55; 19.3% were aged 26-35; 15.8% were aged 36-45; 8.8% were aged 16-19; and 7.0% were over 55.

When comparing the incidence of drinking and driving among fatally injured drivers by age group, fatally injured drivers aged 26-35 were the most likely to have been drinking (51.9%). By contrast, only 8.8% of the tested drivers over 55 had been drinking.

9.2.2 Gender differences. Males dominate the picture as they account for 81.8% of all the fatally injured drivers who had been drinking and 80.7% of all of the fatally injured drivers who were legally impaired.

Males dominate the picture largely because they account for most of the drivers who are killed (236 of the 302 fatalities or 78.1% are males). Fatally injured male drivers were more likely to have been drinking than female drivers (34.0% and 30.0%, respectively). And, 85.2% of the male and 91.7% of the female drivers who were drinking had BACs over the legal limit.

9.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 62.1% were automobile drivers; 25.8% were truck/van drivers; 10.6% were motorcyclists; and 1.5% were tractor-trailer drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 63.2% were automobile drivers; 28.1% were truck/van drivers; and 8.8% were motorcyclists.

Within each of the vehicle types, 37.8% of fatally injured truck/van drivers, 32.8% of automobile drivers, 29.2% of motorcyclists, and 20.0% of tractor-trailer drivers had been drinking. The lone driver of another highway vehicle had not been drinking.

9.2.4 Collision differences. Less than half of the drivers killed (141 of the 302) were involved in single-vehicle collisions but these crashes accounted for two-thirds of the drivers who had been drinking or were legally impaired (65.2% and 70.2%, respectively). The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Almost half of the drivers involved in single-vehicle crashes (46.7%) were positive for alcohol, compared to only 21.5% of those involved in multiple-vehicle collisions.

9.2.5 Duration between crash and death time. Given that only six fatally injured drivers died more than 30 days after the collision, and only one of these drivers was tested for alcohol, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time cannot be performed.

9.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in Quebec. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 9-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes.

The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown by the totals at the bottom of the table, 2,848 drivers were involved in crashes in which someone was seriously injured, and among these 17.6% were alcohol-related crashes.

9.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 23.7% were aged 20-25, 17.9% were aged 26-35; and 12.0% were aged 36-45. Drivers under 16 accounted for only 1.4% of those involved in alcohol-related serious injury crashes.

Over one-quarter of the drivers aged 20-25 were involved in alcohol-related serious injury crashes (28.5%). The lowest incidence of involvement in alcohol-related crashes was found for those over 55 (8.5%).

9.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 75.5% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (19.4% and 11.7%, respectively).

9.3.3 Type of vehicle driven. Drivers of automobiles and light trucks have been merged in this table as Quebec has regrouped these vehicle types into one category in its collision data since March 2010. Of all the

drivers involved in alcohol-related serious injury crashes, 80.7% were automobile-truck/van drivers; 10.0% were off-road vehicle drivers; and 6.4% were motorcyclists.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile-truck/van drivers – 19.4% of these drivers were in crashes that involved alcohol, compared to 14.9% for off-road vehicle drivers, 11.2% for motorcyclists; and 7.5% for drivers of other highway vehicles. Among tractor-trailer drivers, 7.3% were involved in alcohol-related crashes.

Table 9-3
Drivers in Alcohol-Related Serious Injury Crashes:
Quebec, 2012

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	37	7	18.9	1.4
16-19	229	51	22.3	10.2
20-25	418	119	28.5	23.7
26-35	431	90	20.9	17.9
36-45	363	60	16.5	12.0
46-55	403	59	14.6	11.8
>55	437	37	8.5	7.4
unknown	530	79	14.9	15.7
<u>Gender</u>				
Male	1951	379	19.4	75.5
Female	719	84	11.7	16.7
unknown	178	39	21.9	7.8
<u>Vehicle Type</u>				
Auto and Truck/Van	2083	405	19.4	80.7
Motorcycle	285	32	11.2	6.4
Tractor Trailer	82	6	7.3	1.2
Other Hwy. Vehicle	40	3	7.5	0.6
Off-Road	336	50	14.9	10.0
Unknown	22	6	27.3	1.2
<u>Collision Type</u>				
Single-Vehicle	1041	352	33.8	70.1
Multiple-Vehicle	1807	150	8.3	29.9
TOTAL	2848	502	17.6	100.0

* Automobiles and light trucks have been regrouped in collision data as of March 2010.

9.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 70.1% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 33.8% of these drivers, compared to only 8.3% for drivers involved in multiple-vehicle crashes.

9.4 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in Quebec during 2012. Table 9-4 shows the prevalence of drug use among fatally injured drivers of highway vehicles as well as the number of drivers who tested positive for various categories of drugs.

As can be seen, Quebec had an average testing rate in 2012, with 65.2% of fatally injured drivers being tested for drug use.

Among fatally injured tested drivers, 62 out of 197 (31.5%) were positive for drugs. The most common category of drugs found within drivers testing positive for drug use was cannabis (45.2%). Other categories of drugs found in fatally injured drivers testing positive for drugs were CNS depressants (37.1%), CNS stimulants (33.9%), and narcotic analgesics (21.0%).

Table 9-4
Drug Use Among Fatally Injured Drivers of
Highway Vehicles: Quebec, 2012

Prevalence of Drug Use

Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
302	198	(65.6)	62	(31.3)

Categories of Drugs Found Among Drivers Testing Positive

Drug Category	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
Cannabis	28	(45.2)
CNS Depressants	23	(37.1)
CNS Stimulants	21	(33.9)
Narcotic Analgesics	13	(21.0)
Dissociative Anesthetics	0	(0.0)
Hallucinogens	0	(0.0)
Inhalants	0	(0.0)

* Percentages will not add up to 100% due to multiple drug types found in blood samples of some drivers.

9.5 Trends in alcohol and drug-impaired driving

Sections 9.1 through 9.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol; (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 9.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

9.5.1 Deaths in alcohol-related crashes: 1995-2012. Table 9-5 and Figure 9-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 9.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

As shown in the table and figure, the number of deaths in crashes that involved a drinking driver generally dropped from 255 to 111 between 1995 and 2007, increased to 130 in 2008, decreased to 109 in 2009, rose to 133 in 2011, and decreased again to a low of 106 in 2012. The percentage of alcohol-related fatalities generally decreased from 31.6% in 1995 to 24.2% in 2005, rose to 29.6% in 2006, decreased to a low of 21.8% in 2007, generally increased to 28.9% in 2011, and decreased again to 24.4% in 2012.

As shown at the bottom of the table, during the 2006-2010 baseline period there was an average of 129 fatalities involving a drinking driver and they accounted for 26.5% of all fatalities. This means that the percent of fatalities involving a drinking driver increased by 1.1% from 26.5% in the baseline period (2006-2010) to 26.8% in the 2011-2012 period. In terms of the number of persons killed in crashes involving a drinking driver, there has been a 7.0% decrease from an average of 129 in the baseline period (2006-2010) to 120 in the 2011-2012 period.

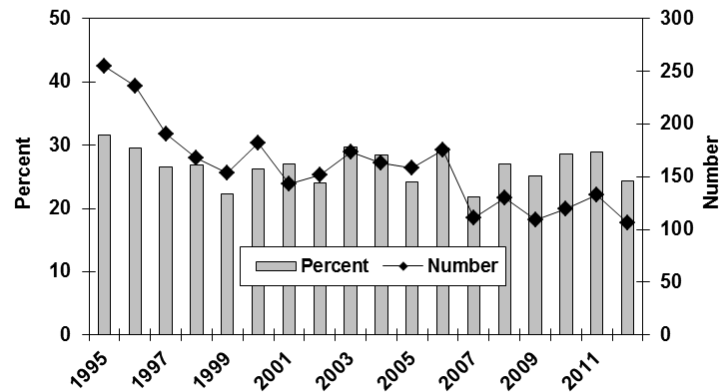
**Table 9-5
Number* and Percent of Motor Vehicle Deaths** Involving a
Drinking Driver: Quebec, 1995-2012**

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths Number	% of total	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	807	255	31.6	788	252	32.0
1996	797	236	29.6	785	236	30.1
1997	720	191	26.5	707	189	26.7
1998	628	168	26.8	616	167	27.1
1999	692	154	22.3	682	153	22.4
2000	691	182	26.3	687	181	26.3
2001	527	143	27.1	519	143	27.6
2002	632	152	24.1	611	151	24.7
2003	586	174	29.7	562	169	30.1
2004	574	163	28.4	562	163	29.0
2005	652	158	24.2	638	158	24.8
2006	592	175	29.6	583	173	29.7
2007	509	111	21.8	497	109	21.9
2008	482	130	27.0	478	129	27.0
2009	432	109	25.2	421	109	25.9
2010	419	120	28.6	405	117	28.9
2011	460	133	28.9	455	132	29.0
2012	434	106	24.4	427	106	24.8
2006-2010 baseline	487	129	26.5	477	127	26.6
2011-2012 period	447	120	26.8	441	119	27.0

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.

Figure 9-2
Number and Percent of Deaths Involving
a Drinking Driver: Quebec, 1995-2012



9.5.2 Alcohol use among fatally injured drivers: Data on alcohol use among fatally injured drivers over the 26-year period from 1987-2012 are shown in Table 9-6. Trends are illustrated in Figure 9-3 which shows changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol (represented by the white area); (2) had BACs below the legal limit (shown by the light grey area); and (3) had BACs over the legal limit (the dark grey area).

As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (49.5%) to its lowest point in 1999 (22.3%), generally rose until 2003 (38.4%), declined in 2005 (29.6%), fluctuated until 2010 (31.0%), rose in 2011 (32.9%), and decreased again in 2012 (28.6%). The percent of fatally injured drivers with zero BACs generally increased from 1987 (30.9%) to 1999 (71.5%), fluctuated until 2010 (62.0%), decreased in 2011 (61.4%), and rose again in 2012 (66.8%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1987 (19.6%), fell to its lowest mark in 2002 (4.4%), fluctuated until 2009 (7.1%), and decreased until 2012 (4.5%).

When compared to the 2006-2010 baseline period shown at the bottom of Table 9-6, the percentage of fatally injured drivers with zero BACs in the 2011-2012 period increased by 3.7% (from 61.6% to 63.9%). Among drivers with BACs from 1-80 mg%, there was a 19.4% decrease (from 6.7% to 5.4%). And among those with BACs over 80 mg%, there was a 3.2% decrease (from 31.7% to 30.7%).

Table 9-6
Alcohol Use Among Fatally Injured Drivers:
Quebec, 1987-2012

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	567	301	53.1	93	30.9	59	19.6	149	49.5
1988	631	392	62.1	162	41.3	41	10.5	189	48.2
1989	657	426	64.8	203	47.7	29	6.8	194	45.5
1990	582	395	67.9	193	48.9	40	10.1	162	41.0
1991	559	380	68.0	180	47.4	29	7.6	171	45.0
1992	512	383	74.8	209	54.6	28	7.3	146	38.1
1993	499	406	81.4	239	58.9	24	5.9	143	35.2
1994	448	334	74.6	184	55.1	31	9.3	119	35.6
1995	465	361	77.6	201	55.7	28	7.8	132	36.6
1996	474	355	74.9	205	57.7	19	5.4	131	36.9
1997	415	290	69.9	171	59.0	20	6.9	99	34.1
1998	398	276	69.3	164	59.4	15	5.4	97	35.1
1999	450	337	74.9	241	71.5	21	6.2	75	22.3
2000	427	322	75.4	206	64.0	25	7.8	91	28.3
2001	354	257	72.6	161	62.6	19	7.4	77	30.0
2002	421	315	74.8	209	66.3	14	4.4	92	29.2
2003	379	263	69.4	146	55.5	16	6.1	101	38.4
2004	367	252	68.7	153	60.7	22	8.7	77	30.6
2005	445	314	70.6	200	63.7	21	6.7	93	29.6
2006	427	289	67.7	176	60.9	24	8.3	89	30.8
2007	342	219	64.0	150	68.5	12	5.5	57	26.0
2008	321	245	76.3	146	59.6	13	5.3	86	35.1
2009	300	196	65.3	112	57.1	14	7.1	70	35.7
2010	268	171	63.8	106	62.0	12	7.0	53	31.0
2011	318	210	66.0	129	61.4	12	5.7	69	32.9
2012	302	199	65.9	133	66.8	9	4.5	57	28.6
2006-2010 baseline	332	224	(67.5)	138	(61.6)	15	(6.7)	71	(31.7)
2011-2012 period	310	205	(66.1)	131	(63.9)	11	(5.4)	63	(30.7)

Figure 9-3
Trends in Alcohol Use Among Driver
Fatalities: Quebec, 1987-2012

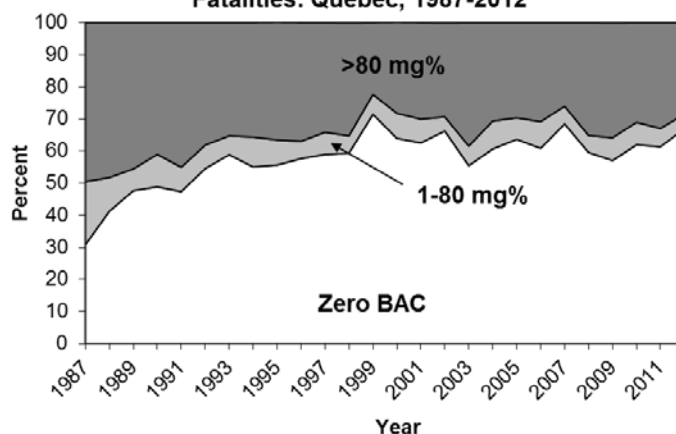


Table 9-7 and Figure 9-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2012. These results also differ from those reported above for two reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 9-1). Second, drivers are grouped in only two BAC categories: zero and positive.

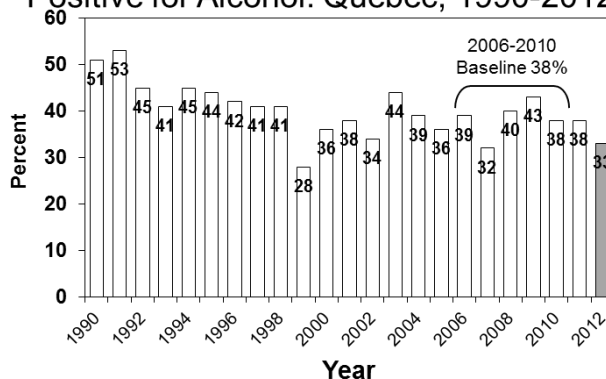
As can be seen at the bottom of Table 9-7, the percentage of fatally injured drivers testing positive for alcohol from 2006-2010, the baseline period, is 38.3%. In the 2011-2012 period, 35.8% of fatally injured drivers tested positive for alcohol, a 6.5% decrease from the baseline period.

Table 9-7
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
Quebec, 1990-2012

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	582	284	(48.8)	298	(51.2)
1991	559	265	(47.4)	294	(52.6)
1992	512	280	(54.7)	232	(45.3)
1993	499	294	(58.9)	205	(41.1)
1994	448	247	(55.1)	201	(44.9)
1995	465	259	(55.7)	206	(44.3)
1996	474	274	(57.8)	200	(42.2)
1997	415	245	(59.0)	170	(41.0)
1998	398	236	(59.3)	162	(40.7)
1999	450	322	(71.6)	128	(28.4)
2000	427	273	(63.9)	154	(36.1)
2001	354	222	(62.7)	132	(37.3)
2002	421	279	(66.3)	142	(33.7)
2003	379	211	(55.7)	168	(44.3)
2004	367	223	(60.8)	144	(39.2)
2005	445	283	(63.6)	162	(36.4)
2006	427	260	(60.9)	167	(39.1)
2007	342	234	(68.4)	108	(31.6)
2008	321	191	(59.5)	130	(40.5)
2009	300	171	(57.0)	129	(43.0)
2010	268	166	(61.9)	102	(38.1)
2011	318	196	(61.6)	122	(38.4)
2012	302	202	(66.9)	100	(33.1)
2006-2010 baseline	332	205	(61.7)	127	(38.3)
2011-2012 period	310	199	(64.2)	111	(35.8)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol

Figure 9-4
Percent of Fatally Injured Drivers*
Positive for Alcohol: Quebec, 1990-2012



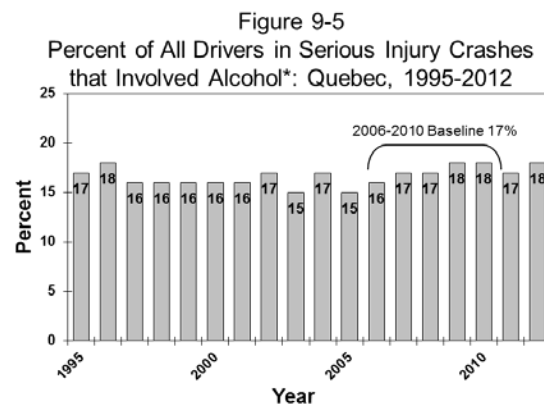
9.5.3 Drivers in serious injury crashes: Table 9-8 and Figure 9-5 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (2006-2010), an average of 17.0% of

drivers in serious injury crashes were in an alcohol-involved crash. This compares to 17.2% in the 2011-2012 period, resulting in a 1.2% increase in the problem.

Table 9-8
Number and Percent of All Drivers in Serious Injury Crashes*
that Involved Alcohol: Quebec, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	6196	1069	(17.3)
1996	5929	1072	(18.1)
1997	5700	936	(16.4)
1998	5356	863	(16.1)
1999	5107	805	(15.8)
2000	4977	817	(16.4)
2001	4692	754	(16.1)
2002	4856	806	(16.6)
2003	4927	739	(15.0)
2004	4900	814	(16.6)
2005	5432	788	(14.5)
2006	4926	794	(16.1)
2007	3828	633	(16.5)
2008	3273	562	(17.2)
2009	3134	563	(18.0)
2010	3313	587	(17.7)
2011	2915	490	(16.8)
2012	2848	502	(17.6)
2006-2010 baseline	3695	628	(17.0)
2011-2012 period	2882	496	(17.2)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 9-9 and Figure 9-6 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 9.3 and in Table 9-8 and Figure 9-5 above because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has been relatively stable from 1997 until 2005 and then risen in the past three years. Between 1995 and 1996 the percentage of all drivers in serious injury crashes that involved alcohol rose only slightly from 17.7% to 18.9%. The incidence generally dropped to a low of 15.3% in 2005, rose to 18.8% in 2009, decreased to 17.4% in 2011, and rose again to 18.0% in 2012.

As shown in Table 9-9, in the baseline period (2006-2010), an average of 17.8% of drivers in serious injury crashes were in an alcohol-involved crash. During the 2011-2012 period, the incidence of drivers in alcohol-involved crashes was 17.7% – a 0.6% decrease.

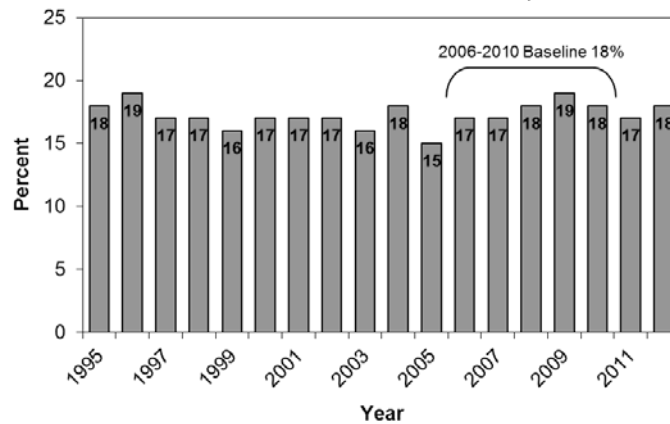
Table 9-9
Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: Quebec, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	5526	979	(17.7)
1996	5382	1018	(18.9)
1997	5146	871	(16.9)
1998	4782	800	(16.7)
1999	4557	740	(16.2)
2000	4455	750	(16.8)
2001	4179	699	(16.7)
2002	4323	746	(17.3)
2003	4386	679	(15.5)
2004	4337	761	(17.5)
2005	4856	745	(15.3)
2006	4404	741	(16.8)
2007	3350	584	(17.4)
2008	2812	508	(18.1)
2009	2740	515	(18.8)
2010	2895	531	(18.3)
2011	2543	443	(17.4)
2012	2507	451	(18.0)
2006-2010 baseline	3240	576	(17.8)
2011-2012 period	2525	447	(17.7)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 9-6
Percent of Drivers of Highway Vehicles in Serious Injury
Crashes that Involved Alcohol: Quebec, 1995-2012



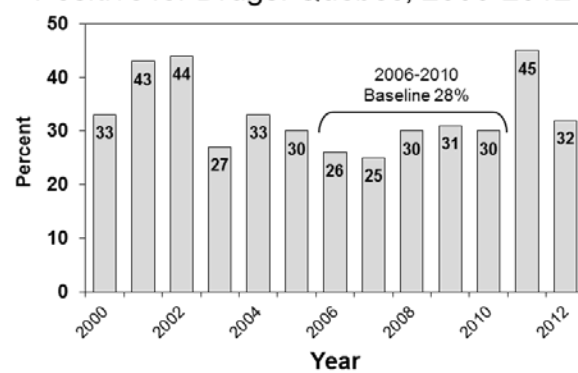
9.5.4 Drug use among fatally injured drivers: Table 9-10 and Figure 9-7 show data on drug use among fatally injured drivers over a 13-year period (2000-2012). Similar to Table 9-6, these results are based on fatally injured drivers of highway vehicles.

As can be seen at the bottom of Table 9-10, the percentage of fatally injured drivers testing positive for drugs from 2006-2010, the baseline period, is 28.2%. In the 2011-2012 period, 38.3% of fatally injured drivers tested positive for drugs, a 35.8% increase from the baseline period.

Table 9-10
Drug Use Among Fatally Injured Drivers of Highway Vehicles:
Quebec, 2000-2012

Year	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative	(% Tested)	Positive	(% Tested)
2000	427	197	46.1	132	67.0	65	33.0
2001	354	224	63.3	127	56.7	97	43.3
2002	421	270	64.1	152	56.3	118	43.7
2003	379	219	57.8	159	72.6	60	27.4
2004	367	172	46.9	115	66.9	57	33.1
2005	445	228	51.2	160	70.2	68	29.8
2006	427	251	58.8	185	73.7	66	26.3
2007	342	209	61.1	156	74.6	53	25.4
2008	321	237	73.8	166	70.0	71	30.0
2009	300	179	59.7	123	68.7	56	31.3
2010	268	155	57.8	109	70.3	46	29.7
2011	318	194	61.0	107	55.2	87	44.8
2012	302	198	65.6	136	68.7	62	31.3
2006-2010 baseline	332	206	62.0	148	71.8	58	28.2
2011-2012 period	310	196	63.2	121	61.7	75	38.3

Figure 9-7
Percent of Fatally Injured Drivers
Positive for Drugs: Quebec, 2000-2012



10.0 NEW BRUNSWICK

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in New Brunswick during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 10.1);
- > alcohol use among fatally injured drivers (Section 10.2);
- > drivers involved in alcohol-related serious injury crashes (Section 10.3);
- > drug use among fatally injured drivers (Section 10.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 10.5).

10.1 Deaths in alcohol-related crashes

Table 10-1 presents information on people who died in alcohol-related crashes in New Brunswick during 2012 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, it can be seen that among persons dying within 12 months of the collision, 12 people aged 16-19 were killed in motor vehicle crashes in New Brunswick during 2012. And, in 11 cases (91.7%) it was possible to determine if alcohol was a factor in the crash. The next column shows the number of people killed in crashes that were known to be alcohol-involved. There were three people aged 16-19 who died in alcohol-related crashes in New Brunswick during 2012. The next column expresses this as a percentage – i.e., 27.3% of the 16-19 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 16-19 year olds represent 9.4% of all the people killed in alcohol-related crashes in New Brunswick during 2012.

An examination of the section for persons dying within 30 days of the collision shows that 12 persons aged 16-19 died in motor vehicle crashes. In 11 of these cases (91.7%), it was possible to determine if alcohol was a factor in the crash. Among these persons, three (27.3%) were alcohol-related deaths. And 16-19 year olds accounted for 9.4% of people dying in alcohol-related crashes.

The totals at the bottom of the table provide a summary. As can be seen, 83 persons died within 12 months of a motor vehicle crash in New Brunswick during 2012. In 77 (92.8%) of these cases, it was possible to

determine if alcohol was a factor. Of these known cases, 32 (41.6%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (83 x .416) it can be estimated that *in New Brunswick during 2012, 34 persons died in alcohol-related crashes within 12 months of the collision.*

Among the 82 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 93.9% of the cases. Of these known cases, 32 (41.6%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (82 x .416) it can be estimated that *in New Brunswick during 2012, 34 persons died in alcohol-related crashes within 30 days of the collision.*

Table 10-1
Deaths in Alcohol-Related Crashes: New Brunswick, 2012

Persons Dying Within 12 Months of Collision							Persons Dying Within 30 Days of Collision					
Category of Victim	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)		
		No.	% of total	No.	% of known	% of all ARDs		No.	% of total	No.	% of known	% of all ARDs
Age Group												
<16	2	2	100.0	0	0.0	0.0	2	2	100.0	0	0.0	0.0
16-19	12	11	91.7	3	27.3	9.4	12	11	91.7	3	27.3	9.4
20-25	13	13	100.0	9	69.2	28.1	13	13	100.0	8	61.5	25.0
26-35	9	9	100.0	5	55.6	15.6	9	9	100.0	5	55.6	15.6
36-45	11	10	90.9	4	40.0	12.5	11	10	90.9	4	40.0	12.5
46-55	13	13	100.0	7	53.8	21.9	13	13	100.0	7	53.8	21.9
>55	23	19	82.6	4	21.1	12.5	22	19	86.4	4	21.1	12.5
Gender												
Male	58	54	93.1	25	46.3	78.1	58	54	93.1	25	46.3	78.1
Female	25	23	92.0	7	30.4	21.9	24	23	95.8	6	26.1	18.8
Victim Type												
Driver/ Operator	59	56	94.9	23	41.1	71.9	58	56	96.6	23	41.1	71.9
Passenger	16	16	100.0	9	56.3	28.1	16	16	100.0	8	50.0	25.0
Pedestrian	8	5	62.5	0	0.0	0.0	8	5	62.5	0	0.0	0.0
Vehicle Occupied												
Automobiles	36	35	97.2	13	37.1	40.6	36	35	97.2	12	34.3	37.5
Trucks/Vans	13	13	100.0	5	38.5	15.6	13	13	100.0	5	38.5	15.6
Motorcycles	7	7	100.0	2	28.6	6.3	7	7	100.0	2	28.6	6.3
Offroad Vehicles	18	17	94.4	12	70.6	37.5	18	17	94.4	12	70.6	37.5
(Pedestrians)	8	5	62.5	0	0.0	0.0	8	5	62.5	0	0.0	0.0
Unknown	1	0	0.0	0	0.0	0.0	0	0	0.0	0	0.0	0.0
Collision Location												
Public Road	74	71	95.9	28	39.4	87.5	74	71	95.9	27	38.0	87.1
Offroad	9	6	66.7	4	66.7	12.5	8	6	75.0	4	66.7	12.9
TOTAL	83	77	92.8	32	41.6	100.0	82	77	93.9	32	41.6	100.0

10.1.1 Victim age. Of all the people who died in alcohol-related crashes within 12 months of the collision, 28.1% (see last column in the first section) were aged 20-25; 21.9% were aged 46-55; 15.6% were aged 26-35; 12.5% were aged 36-45 and over 55; and 9.4% aged 16-19.

The highest incidence of alcohol involvement occurred in the crashes in which a person aged 20-25 died (69.2%). The lowest incidence of alcohol involvement was found among fatalities under 16 and over 55 – 0.0% of persons under 16 and 21.1% of the fatalities over 55 died in crashes involving alcohol.

10.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 78.1% were males. The incidence of alcohol in crashes in which a male died (46.3%) was greater than the incidence of alcohol in crashes in which a female died (30.4%).

10.1.3 Victim type. Of all the people who died in alcohol-related crashes within 12 months of the collision, 71.9% were drivers/operators of a vehicle; 28.1% were passengers; and 0.0% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (56.3%) occurred in the crashes in which a passenger died. Alcohol was involved in 41.1% of the crashes in which a driver/operator died and 0.0% of those in which a pedestrian died.

10.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes within 12 months of the collision, 40.6% were automobile occupants; 37.5% were off-road vehicle occupants; 16.6% were truck/van occupants; and 6.3% were motorcyclists.

Within each of these vehicle types, the incidence of alcohol involvement in which an off-road vehicle occupant died was greater than the incidence of alcohol in crashes in which a truck/van occupant died (70.6% versus 38.5%). Among automobile occupants and motorcyclists, 37.1% and 28.6% died in alcohol-related crashes, respectively.

10.1.5 Collision location. Of all the people who died in alcohol-related crashes within 12 months of the collision, 87.5% died in a collision which occurred on a public road and 12.5% died in an off-road collision. However, the incidence of alcohol involvement in which a victim died in an alcohol-related crash was greater for those dying in off-road collisions (66.7%) than it was for persons dying in a collision which occurred on a public road (39.4%).

10.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured within 12 months of the collision in New Brunswick during 2012. Table 10-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time and death time (within 12 months vs. within 30 days of the collision).

The first column in the table shows the number of drivers killed. The next columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests: the first three of these present results for drivers who showed any evidence of alcohol; the last three columns present information on drivers who had BACs over the statutory limit of 80 mg%.

To illustrate, among 20-25 year olds there were four drivers killed during 2012; all four of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, one (25.0%) was positive for alcohol. This means that fatally injured drinking drivers aged 20-25 accounted for 8.3% of all drinking drivers who were killed.

Table 10-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
New Brunswick, 2012

New Brunswick, 2012

Category of Driver	No. of Drivers	Drivers Tested		Positive BAC			BAC >80 mg%		
		No.	% of total	No.	% of tested	% of all drivers with +BAC	No.	% of tested	% of all drivers with BAC >80 mg%
<u>Age Group</u>									
16-19	6	6	100.0	1	16.7	8.3	1	16.7	9.1
20-25	4	4	100.0	1	25.0	8.3	1	25.0	9.1
26-35	5	4	80.0	4	100.0	33.3	4	100.0	36.4
36-45	5	5	100.0	1	20.0	8.3	1	20.0	9.1
46-55	7	7	100.0	4	57.1	33.3	4	57.1	36.4
>55	14	11	78.6	1	9.1	8.3	0	0.0	0.0
<u>Gender</u>									
Male	31	29	93.5	11	37.9	91.7	10	34.5	90.9
Female	10	8	80.0	1	12.5	8.3	1	12.5	9.1
<u>Vehicle Type</u>									
Automobiles	23	20	87.0	5	25.0	41.7	5	25.0	45.5
Truck/Van	11	10	90.9	5	50.0	41.7	4	40.0	36.4
Motorcycles	7	7	100.0	2	28.6	16.7	2	28.6	18.2
<u>Collision Type</u>									
Single vehicle	24	21	87.5	8	38.1	66.7	8	38.1	72.7
Multiple vehicle	17	16	94.1	4	25.0	33.3	3	18.8	27.3
<u>Duration Between Crash and Death Time</u>									
Within 30 Days	41	37	90.2	12	32.4	100.0	11	29.7	100.0
>30 Days	0	0	0.0	0	0.0	0.0	0	0.0	0.0
TOTAL	41	37	90.2	12	32.4	100.0	11	29.7	100.0

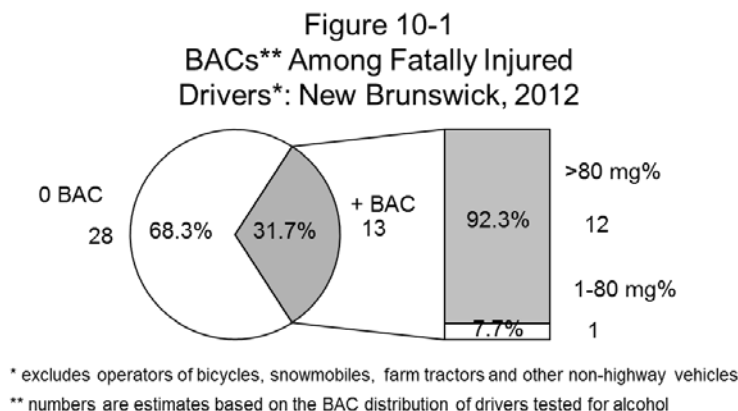
Then, in the final three columns, it can be seen that one of the four (25.0%) fatally injured 20-25 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that the driver who was positive for alcohol had a BAC above the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, 20-25 year old drivers accounted for 9.1% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. New Brunswick had a very high testing rate in 2012, with 90.2% of fatally injured drivers being tested for alcohol use.

In New Brunswick, 32.4% had been drinking and 11 of 12 (91.7%) fatally injured drinking drivers had BACs >80 mg%. Although not shown in the table, more refined analyses by different BAC categories show that among tested drivers:

- > 67.6% had BACs of zero mg%;
- > 0.0% had BACs from 1-49 mg%;
- > 2.7% had BACs from 50-80 mg%
- > 8.1% had BACs from 81 to 160 mg%; and,
- > 21.6% had BACs over 160 mg%.

In Figure 10-1, the BAC distribution for tested fatally injured drivers is extrapolated to reflect the BAC distribution for all fatally injured drivers. In this figure 13 of 41 (31.7%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 12 (92.3%) have BACs over 80 mg%.



10.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with positive BAC), 33.3% were aged 26-35 and 46-55; and 8.3% were aged 16-19, 20-25, 36-45 and over 55.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 36.4% were aged 26-35 and 46-55; and 9.1% were aged 16-19, 20-25, and 36-45.

When comparing the incidence of drinking and driving among fatally injured drivers by age group, fatally injured drivers aged 26-35 were the most likely to have been drinking (100.0%). By contrast, 9.1% of the tested drivers over age 55 had been drinking.

10.2.2 Gender differences. Males dominate the picture – they account for 91.7% of the fatally injured drivers who had been drinking and 90.9% of those who were legally impaired.

Males dominate the picture largely because they account for most of the drivers who are killed (31 of the 41 fatalities or 75.6% are males). Fatally injured male drivers were more likely to have been drinking than female drivers (37.9% and 12.5%, respectively). And, 100.0% of the female drivers and 90.9% of the male drivers who were drinking had BACs over the legal limit.

10.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 41.7% were automobile drivers and truck/van drivers; and 16.7% were motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 45.5% were automobile drivers, 36.4% were truck/van drivers; and 18.2% were motorcyclists.

Within each of the vehicle types, 50.0% of fatally injured truck/van drivers, 28.6% of motorcyclists and 25.0% of automobile drivers had been drinking.

10.2.4 Collision differences. Almost three-fifths of the drivers killed (24 of the 41) were involved in single-vehicle collisions but these crashes accounted two-thirds of the drivers who had been drinking or were legally impaired (66.7% and 72.7%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Over one-third of the drivers involved in single-vehicle crashes (38.1%) were positive for alcohol, compared to 25.0% of those involved in multiple-vehicle collisions.

10.2.5 Duration between crash and death time. Given that all of the fatally injured drivers died within 30 days of the collision, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time is not applicable.

10.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in New Brunswick. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 10-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 242 drivers were involved in crashes in which someone was seriously injured, and among these 24.4% were involved in alcohol-related crashes.

10.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 23.7% were aged 26-35, 22.0% were aged 20-25; and 18.6% were aged 36-45. Drivers aged under 16 and 16-19 respectively accounted for only 0.0% and 6.8% of those involved in alcohol-related serious injury crashes.

Two-fifths of the drivers aged 20-25 were involved in alcohol-related serious injury crashes (43.3%). The lowest incidence of involvement in alcohol-related crashes was found for those aged under 16 and over 55 (0.0% and 9.2%, respectively).

10.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 81.4% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (27.0% and 18.0%, respectively).

10.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 55.9% were automobile drivers; 32.2% were truck/van drivers; 6.8% were motorcyclists; and 1.7% were tractor-trailer drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile and truck/van drivers – 26.8% of these drivers were in crashes that involved alcohol, compared to 20.0% for tractor-trailer drivers, 16.7% for off-road vehicle drivers and 13.8% for motorcyclists.

Table 10-3
Drivers in Alcohol-Related Serious Injury Crashes:
New Brunswick, 2012

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	1	0	0.0	0.0
16-19	16	4	25.0	6.8
20-25	30	13	43.3	22.0
26-35	37	14	37.8	23.7
36-45	37	11	29.7	18.6
46-55	41	9	22.0	15.3
>55	76	7	9.2	11.9
unknown	4	1	25.0	1.7
<u>Gender</u>				
Male	178	48	27.0	81.4
Female	61	11	18.0	18.6
unknown	3	0	0.0	0.0
<u>Vehicle Type</u>				
Auto	123	33	26.8	55.9
Truck/Van	71	19	26.8	32.2
Motorcycle	29	4	13.8	6.8
Tractor Trailer	5	1	20.0	1.7
Other Hwy. Vehicle	2	0	0.0	0.0
Off-Road	12	2	16.7	3.4
<u>Collision Type</u>				
Single-Vehicle	105	45	42.9	76.3
Multiple-Vehicle	137	14	10.2	23.7
TOTAL	242	59	24.4	100.0

10.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 76.3% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 42.9% of these drivers, compared to only 10.2% for drivers involved in multiple-vehicle crashes.

10.4 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in New Brunswick during 2012. Table 10-4 shows the prevalence of drug use among fatally injured drivers of highway vehicles as well as the number of drivers who tested positive for various categories of drugs.

As can be seen, New Brunswick had a high testing rate in 2012, with 82.9% of fatally injured drivers being tested for drug use.

Among fatally injured tested drivers, nine out of 34 (26.5%) were positive for drugs. The most common category of drugs found within drivers testing positive for drug use was cannabis (44.4%). Other categories of drugs found in fatally injured drivers testing positive for drugs were narcotic analgesics and CNS depressants (33.3% each), and CNS stimulants (22.2%).

Table 10-4
Drug Use Among Fatally Injured Drivers of
Highway Vehicles: New Brunswick, 2012

Prevalence of Drug Use				
Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
41	34	(82.9)	9	(26.5)

Categories of Drugs Found Among Drivers Testing		
Drug Category	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
Cannabis	4	(44.4)
Narcotic Analgesics	3	(33.3)
CNS Depressants	3	(33.3)
CNS Stimulants	2	(22.2)
Hallucinogens	0	(0.0)
Dissociative Anesthetics	0	(0.0)
Inhalants	0	(0.0)

* Percentages will not add up to 100% due to multiple drug types found in blood samples of some drivers.

10.5 Trends in alcohol and drug-impaired driving

Sections 10.1 through 10.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol (within 12 months and 30 days of the collision); (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 10.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

10.5.1 Deaths in alcohol-related crashes: 1995-2012. Table 10-5 and Figure 10-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 10.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

As shown in the figure, the number of deaths in crashes that involved a drinking driver generally dropped from 42 in 1995 to 25 in 2004, rose to 40 in 2010, fell to a low of 23 in 2011 and remained at this level in 2012. The percentage of alcohol-related fatalities generally decreased from 37.5% in 1995 to its lowest level in 2000 (27.4%), peaked at 41.2% in 2010, decreased to 34.8% in 2011, and rose to 36.5% in 2012.

As shown at the bottom of the table, during the 2006-2010 baseline period there was an average of 31 fatalities involving a drinking driver and they accounted for 35.2% of all fatalities. This means that the

percent of fatalities involving a drinking driver increased by 0.6% from 35.2% in the baseline period (2006-2010) to 35.4% in the 2011-2012 period. However, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 1.1% decrease from an average of 31 in the baseline period (2006-2010) to 23 in the 2011-2012 period.

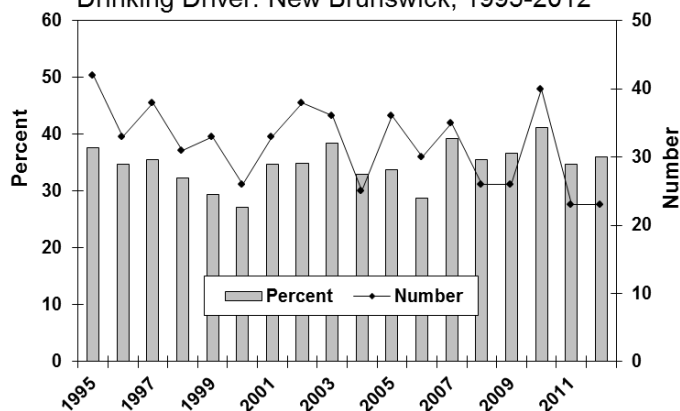
Table 10-5
Number* and Percent of Motor Vehicle Deaths Involving a**
Drinking Driver: New Brunswick, 1995-2012

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths		Number of Deaths	Alcohol-Related Deaths	
		Number	% of total		Number	% of total
1995	112	42	37.5	112	42	37.5
1996	96	33	34.4	96	33	34.4
1997	106	38	35.8	105	38	36.2
1998	96	31	32.3	96	31	32.3
1999	111	33	29.7	111	33	29.7
2000	95	26	27.4	93	25	26.9
2001	95	33	34.7	95	33	34.7
2002	109	38	34.9	106	37	34.9
2003	93	36	38.7	93	36	38.7
2004	76	25	32.9	75	25	33.3
2005	108	36	33.3	108	36	33.3
2006	105	30	28.6	105	30	28.6
2007	90	35	38.9	90	35	38.9
2008	74	26	35.1	73	25	34.2
2009	72	26	36.1	69	25	36.2
2010	97	40	41.2	95	39	41.1
2011	66	23	34.8	66	23	34.8
2012	63	23	36.5	63	23	36.5
2006-2010 baseline	88	31	35.2	86	31	36.0
2011-2012 period	65	23	35.4	65	23	35.4

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.

Figure 10-2
Number and Percent of Deaths Involving a
Drinking Driver: New Brunswick, 1995-2012



10.5.2 Alcohol use among fatally injured drivers: Data on alcohol use among fatally injured drivers over the 26-year period from 1987-2012 are shown in Table 10-6. Trends are illustrated in Figure 10-3 which shows changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol (represented by the white area); (2) had BACs below the legal limit (shown by the light grey area); and (3) had BACs over the legal limit (the dark grey area). The data reported here are restricted to drivers who died in less than six hours after the crash (see Section 2.2.2).

As can be seen, the percentage of fatally injured drivers with BACs over the legal limit fluctuated, peaking in 1993 (56.0%), declining to its lowest mark in 2005 (27.5%), fluctuating until 2010 (42.0%), and decreasing until 2012 (26.5%). The percent of fatally injured drivers with zero BACs generally increased from 1987 (46.8%) to 2000 (66.7%), fluctuated until 2005 (66.7%), declined in 2007 (51.1%), and eventually peaked in 2012 (70.6%). The percent of fatally injured drivers with BACs between 1 and 80 mg% declined until 1990 (0.0%), peaked in 2007 (11.1%), decreased until 2011 (2.7%), and rose slightly in 2012 (2.9%).

When compared to the 2006-2010 baseline period shown at the bottom of Table 10-6, the percentage of fatally injured drivers with zero BACs in the 2011-2012 period increased by 22.2% (from 56.8% to 69.4%). Among drivers with BACs from 1-80 mg%, there was a 58.8% decrease (from 6.8% to 2.8%). And among drivers with BACs over 80 mg%, there was a 23.6% decrease (from 36.4% to 27.8%).

Table 10-6
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
New Brunswick, 1987-2012

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	73	62	84.9	29	46.8	6	9.7	27	43.5
1988	82	59	72.0	29	49.2	3	5.1	27	45.8
1989	68	46	67.6	23	50.0	2	4.3	21	45.7
1990	78	74	94.9	48	64.9	0	0.0	26	35.1
1991	51	50	98.0	25	50.0	4	8.0	21	42.0
1992	64	55	85.9	28	50.9	1	1.8	26	47.3
1993	70	50	71.4	18	36.0	4	8.0	28	56.0
1994	38	34	89.5	16	47.1	1	2.9	17	50.0
1995	61	52	85.2	28	53.8	4	7.7	20	38.5
1996	53	49	92.5	30	61.2	4	8.2	15	30.6
1997	54	51	94.4	28	54.9	5	9.8	18	35.3
1998	51	47	92.2	27	57.4	2	4.3	18	38.3
1999	54	49	90.7	32	65.3	2	4.1	15	30.6
2000	39	36	92.3	24	66.7	2	5.6	10	27.8
2001	44	37	84.1	17	45.9	4	10.8	16	43.2
2002	51	48	94.1	28	58.3	2	4.2	18	37.5
2003	54	52	96.3	31	59.6	4	7.7	17	32.7
2004	38	35	92.1	23	65.7	2	5.7	10	28.6
2005	53	51	96.2	34	66.7	3	5.9	14	27.5
2006	56	53	94.6	35	66.0	2	3.8	16	30.2
2007	45	45	100.0	23	51.1	5	11.1	17	37.8
2008	34	34	100.0	18	52.9	2	5.9	14	41.2
2009	39	39	100.0	23	59.0	2	5.1	14	35.9
2010	51	50	98.0	27	54.0	2	4.0	21	42.0
2011	39	37	94.9	25	67.6	1	2.7	11	29.7
2012	34	34	100.0	24	70.6	1	2.9	9	26.5
2006-2010 baseline	45	44	(97.8)	25	(56.8)	3	(6.8)	16	(36.4)
2011-2012 period	37	36	(97.3)	25	(69.4)	1	(2.8)	10	(27.8)

* dying in less than six hours.

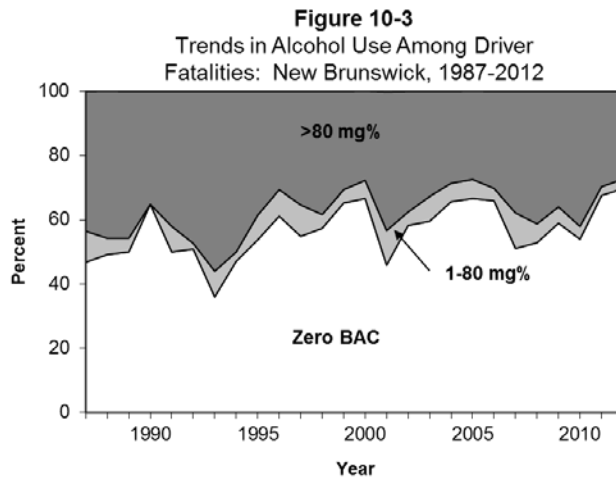


Table 10-7 and Figure 10-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2012. These results also differ from those reported above for several reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 10-1). Second, estimates are based on all fatally injured drivers, not just those who died in less than six hours from the crash. Third, drivers are grouped in only two BAC categories: zero and positive.

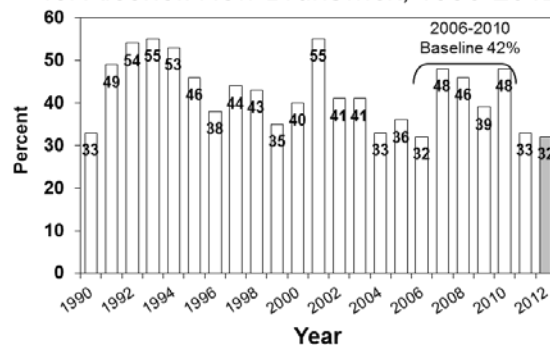
As can be seen in Table 10-7, the baseline percentage of fatally injured drivers testing positive for alcohol from 2006-2010 is 41.5%. From 2011 to 2012, an average of 32.6% of fatally injured drivers tested positive for alcohol, a 21.4% decrease from the baseline period.

Table 10-7
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
New Brunswick, 1990-2012

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	88	59	(67.0)	29	(33.0)
1991	61	31	(50.8)	30	(49.2)
1992	76	35	(46.1)	41	(53.9)
1993	84	38	(45.2)	46	(54.8)
1994	49	23	(46.9)	26	(53.1)
1995	70	38	(54.3)	32	(45.7)
1996	58	36	(62.1)	22	(37.9)
1997	59	33	(55.9)	26	(44.1)
1998	58	33	(56.9)	25	(43.1)
1999	60	39	(65.0)	21	(35.0)
2000	53	32	(60.4)	21	(39.6)
2001	57	26	(45.6)	31	(54.4)
2002	64	38	(59.4)	26	(40.6)
2003	59	35	(59.3)	24	(40.7)
2004	43	29	(67.4)	14	(32.6)
2005	62	40	(64.5)	22	(35.5)
2006	65	44	(67.7)	21	(32.3)
2007	50	26	(52.0)	24	(48.0)
2008	41	22	(53.7)	19	(46.3)
2009	51	31	(60.8)	20	(39.2)
2010	60	31	(51.7)	29	(48.3)
2011	45	30	(66.7)	15	(33.3)
2012	41	28	(68.3)	13	(31.7)
2006-2010 baseline	53	31	(58.5)	22	(41.5)
2011-2012 period	43	29	(67.4)	14	(32.6)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol

Figure 10-4
Percent of Fatally Injured Drivers* Positive
for Alcohol: New Brunswick, 1990-2012



10.5.3 Drivers in serious injury crashes: Table 10-8 and Figure 10-5 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (2006-2010), an average of 25.4% of drivers in serious injury crashes were in an alcohol-involved crash. This percentage increased to 26.1% in 2011, then decreased to 24.4% in 2012. In the 2011-2012 period, an average of 25.5% of drivers in serious injury crashes were in an alcohol-involved crash. This represents a 0.4% increase in the problem compared to the 2006-2010 baseline period.

Table 10-8
Number and Percent of All Drivers in Serious Injury Crashes*
that Involved Alcohol: New Brunswick, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	711	205	(28.8)
1996	606	151	(24.9)
1997	614	132	(21.5)
1998	560	125	(22.3)
1999	527	126	(23.9)
2000	512	112	(21.9)
2001	547	148	(27.1)
2002	457	109	(23.9)
2003	447	111	(24.8)
2004	444	109	(24.5)
2005	437	104	(23.8)
2006	387	94	(24.3)
2007	337	86	(25.5)
2008	317	80	(25.2)
2009	324	82	(25.3)
2010	325	87	(26.8)
2011	291	76	(26.1)
2012	242	59	(24.4)
2006-2010 baseline	338	86	(25.4)
2011-2012 period	267	68	(25.5)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

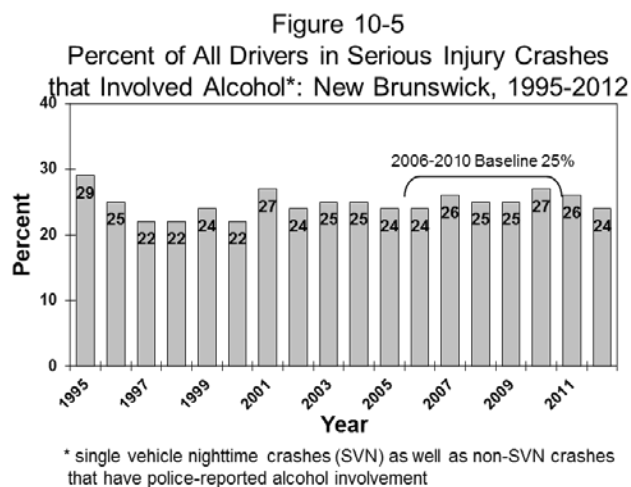


Table 10-9 and Figure 10-6 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 10.3 and in Table 10-8 and Figure 10-5 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has fluctuated over this 18-year period. Between 1995 and 1997 the percentage of all drivers in serious injury crashes that involved alcohol dropped from 29.2% to 21.0%. Since then, the incidence fluctuated until 2007 (26.0%), declined slightly to 25.6% in 2009, rose in 2010 (27.5%), and decreased until 2012 (24.8%).

In the baseline period (2006-2010), an average of 25.6% of drivers in serious injury crashes were in an alcohol-involved crash. In the 2011-2012 period, the percentage of drivers in serious injury crashes involving alcohol was 26.4%, resulting in a 3.1% increase.

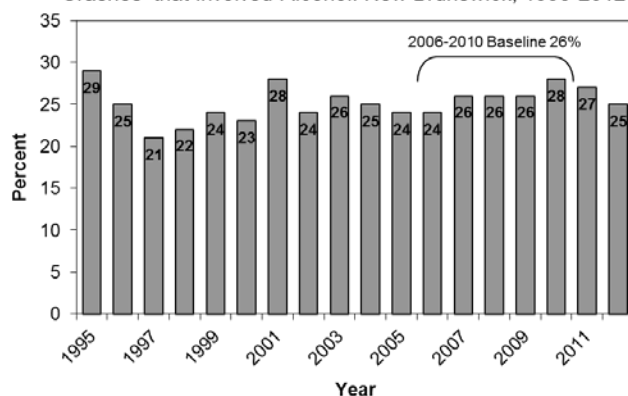
Table 10-9
Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: New Brunswick, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	681	199	(29.2)
1996	597	146	(24.5)
1997	561	118	(21.0)
1998	542	121	(22.3)
1999	512	124	(24.2)
2000	493	112	(22.7)
2001	511	142	(27.8)
2002	439	105	(23.9)
2003	426	110	(25.8)
2004	425	108	(25.4)
2005	429	102	(23.8)
2006	369	89	(24.1)
2007	327	85	(26.0)
2008	302	78	(25.8)
2009	313	80	(25.6)
2010	309	85	(27.5)
2011	277	76	(27.4)
2012	230	57	(24.8)
2006-2010 baseline	324	83	(25.6)
2011-2012 period	254	67	(26.4)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 10-6
Percent of Drivers of Highway Vehicles in Serious Injury Crashes that Involved Alcohol: New Brunswick, 1995-2012



10.5.4 Drug use among fatally injured drivers: Table 10-10 and Figure 10-7 show data on drug use among fatally injured drivers over a 13-year period (2000-2012). Similar to Table 10-6, these results are based on fatally injured drivers of highway vehicles who died less than six hours after the crash (see Section 2.2.5).

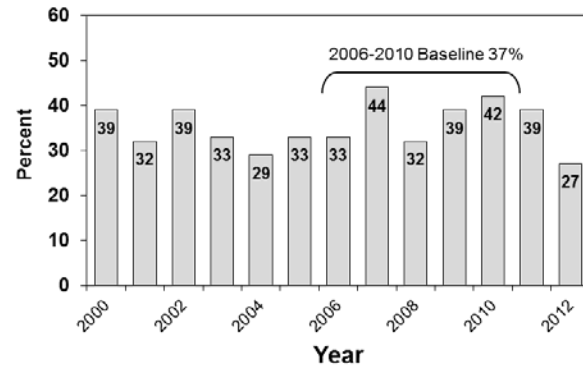
As can be seen at the bottom of Table 10-10, the percentage of fatally injured drivers testing positive for drugs from 2006-2010, the baseline period, is 37.2%. In the 2011-2012 period, an average of 33.3% of fatally injured drivers tested positive for drugs, a 10.5% decrease from the baseline period.

Table 10-10
Drug Use Among Fatally Injured Drivers* of Highway Vehicles:
New Brunswick, 2000-2012

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative	(% Tested)	Positive	(% Tested)
2000	39	36	92.3	22	61.1	14	38.9
2001	44	34	77.3	23	67.6	11	32.4
2002	51	44	86.3	27	61.4	17	38.6
2003	54	52	96.3	35	67.3	17	32.7
2004	38	34	89.5	24	70.6	10	29.4
2005	54	51	94.4	34	66.7	17	33.3
2006	56	51	91.1	34	66.7	17	33.3
2007	45	43	95.6	24	55.8	19	44.2
2008	34	34	100.0	23	67.6	11	32.4
2009	39	39	100.0	24	61.5	15	38.5
2010	51	50	98.0	29	58.0	21	42.0
2011	39	33	84.6	20	60.6	13	39.4
2012	34	33	97.1	24	72.7	9	27.3
2006-2010 baseline	45	43	95.6	27	62.8	16	37.2
2011-2012 average	37	33	89.2	22	66.7	11	33.3

* dying in less than six hours.

Figure 10-7
Percent of Fatally Injured Drivers Positive
for Drugs: New Brunswick, 2000-2012



11.0 NOVA SCOTIA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in Nova Scotia during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 11.1);
- > alcohol use among fatally injured drivers (Section 11.2);
- > drivers involved in alcohol-related serious injury crashes (Section 11.3);
- > drug use among fatally injured drivers (Section 11.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 11.5).

11.1 Deaths in alcohol-related crashes

Table 11-1 presents information on people who died in alcohol-related crashes in Nova Scotia during 2012 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, it can be seen that among persons dying within 12 months of the collision, 18 people aged 46-55 were killed in motor vehicle crashes in Nova Scotia during 2012. And, in 17 cases (94.4%) it was possible to determine if alcohol was a factor in the crash. The next column shows the number of people killed in crashes that were known to be alcohol-involved. There were eight people aged 46-55 who died in alcohol-related crashes in Nova Scotia during 2012. The next column expresses this as a percentage – i.e., 47.1% of the 46-55 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 46-55 year olds represent 27.6% of all the people killed in alcohol-related crashes in Nova Scotia during 2012.

An examination of the section for persons dying within 30 days of the collision shows that 18 persons aged 46-55 died in motor vehicle crashes. In 17 of these cases (94.4%), it was possible to determine if alcohol was a factor in the crash. Among these persons, eight (47.1%) were alcohol-related deaths. And 46-55 year olds accounted for 27.6% of people dying in alcohol-related crashes.

The totals at the bottom of the table provide a summary. As can be seen, 92 persons died within 12 months of a motor vehicle crash in Nova Scotia during 2012. In 88 (95.7%) of these cases, it was possible to

determine if alcohol was a factor. Of these known cases, 29 (33.0%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (92 x .33) it can be estimated that *in Nova Scotia during 2012, 30 persons died in alcohol-related crashes within 12 months of the collision.*

Among the 90 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 96.7% of the cases. Of these known cases, 29 (33.3%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (90 x .333) it can be estimated that *in Nova Scotia during 2012, 30 persons died in alcohol-related crashes within 30 days of the collision.*

Table 11-1
Deaths in Alcohol-Related Crashes: Nova Scotia, 2012

	Persons Dying Within 12 Months of Collision						Persons Dying Within 30 Days of Collision					
Category of Victim	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)		
		No.	% of total	No.	% of known	% of all ARDs		No.	% of total	No.	% of known	% of all ARDs
<u>Age Group</u>												
<20*	11	11	100.0	3	27.3	10.3	11	11	100.0	3	27.3	10.3
20-25	11	11	100.0	2	18.2	6.9	11	11	100.0	2	18.2	6.9
26-35	6	6	100.0	4	66.7	13.8	6	6	100.0	4	66.7	13.8
36-45	10	10	100.0	5	50.0	17.2	10	10	100.0	5	50.0	17.2
46-55	18	17	94.4	8	47.1	27.6	18	17	94.4	8	47.1	27.6
>55	36	33	91.7	7	21.2	24.1	34	32	94.1	7	21.9	24.1
<u>Gender</u>												
Male	72	71	98.6	26	36.6	89.7	71	70	98.6	26	37.1	89.7
Female	20	17	85.0	3	17.6	10.3	19	17	89.5	3	17.6	10.3
<u>Victim Type</u>												
Driver/ Operator	68	66	97.1	23	34.8	79.3	68	66	97.1	23	34.8	79.3
Passenger	16	15	93.8	6	40.0	20.7	16	15	93.8	6	40.0	20.7
Pedestrian	8	7	87.5	0	0.0	0.0	6	6	100.0	0	0.0	0.0
<u>Vehicle Occupied</u>												
Automobiles	55	54	98.2	16	29.6	55.2	55	54	98.2	16	29.6	55.2
Trucks/Vans	11	11	100.0	7	63.6	24.1	11	11	100.0	7	63.6	24.1
Motorcycles	8	7	87.5	1	14.3	3.4	8	7	87.5	1	14.3	3.4
Other Hwy. Vehicles	1	1	100.0	0	0.0	0.0	1	1	100.0	0	0.0	0.0
Offroad Vehicles	9	8	88.9	5	62.5	17.2	9	8	88.9	5	62.5	17.2
(Pedestrians)	8	7	87.5	0	0.0	0.0	6	6	100.0	0	0.0	0.0
<u>Collision Location</u>												
Public Road	85	82	96.5	25	30.5	86.2	83	81	97.6	25	30.9	86.2
Offroad	7	6	85.7	4	66.7	13.8	7	6	85.7	4	66.7	13.8
TOTAL	92	88	95.7	29	33.0	100.0	90	87	96.7	29	33.3	100.0

* Persons in two age groups have been aggregated to ensure that an individual will not be identified.

11.1.1 Victim age. Persons under 16 and 16-19 have been regrouped (under 20 age group) to ensure that individuals cannot be identified. Of all the people who died in alcohol-related crashes within 12 months of the collision, 27.6% (see last column of the first section) were aged 46-55; 24.1% were over 55; 17.2% were aged 36-45; 13.8% were aged 26-35; 10.3% were under 20; and 6.9% were aged 20-25.

The highest incidence of alcohol involvement occurred in the crashes in which a person aged 26-35 died (66.7%). The lowest incidence of alcohol involvement was found among those aged 20-25 (18.2%) and over 55 (21.2%).

11.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 89.7% were males. The incidence of alcohol in crashes in which a male died (36.6%) was greater than the incidence of alcohol in crashes in which a female died (17.6%).

11.1.3 Victim type. Of all the people who died in alcohol-related crashes within 12 months of the collision, 79.3% were drivers/operators of a vehicle; 20.7% were passengers; and 0.0% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (40.0%) occurred in the crashes in which a passenger died. Alcohol was involved in 34.8% of the crashes in which a driver/operator died and 0.0% of those in which a pedestrian died.

11.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes within 12 months of the collision, 55.2% were in an automobile; 24.1% were truck/van occupants; 17.2% were off-road vehicle occupants; and 3.4% were motorcyclists.

Within each of these vehicle types, the incidence of alcohol involvement in which a truck/van occupant died was greater than the incidence of alcohol in crashes in which an automobile occupant died (63.6% versus 29.6%).

The number of fatalities in each of the other types of vehicles is too small to produce reliable estimates of alcohol-involvement.

11.1.5 Collision location. Of all the people who died in alcohol-related crashes within 12 months of the collision, 86.2% died in a collision which occurred on a public road and 13.8% died in an off-road collision. However, the incidence of alcohol involvement in which a victim died in an alcohol-related crash was greater for those dying in off-road collisions (66.7%) than it was for persons dying in a collision which on a public road (30.5%).

11.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured within 12 months of the collision in Nova Scotia during 2012. Table 11-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time (within 12 months of the collision vs. within 30 days of the collision).

The first column in the table shows the number of drivers killed. The next columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests – the first three of these present results for drivers who showed any evidence of alcohol; the last three columns present information on drivers who had BACs over the statutory limit of 80 mg%.

To illustrate, among 20-25 year olds there were nine drivers killed during 2012; eight of these fatally injured drivers (88.9%) were tested for alcohol. Of those who were tested, one (12.5%) was positive for alcohol. This means that 20-25 year old fatally injured drinking drivers accounted for 6.7% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that one of the eight (12.5%) fatally injured 20-25 year olds who were tested for alcohol had BACs in excess of 80 mg%. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, 20-25 year old drivers accounted for 7.7% of all the drivers with BACs over the legal limit.

Table 11-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Nova Scotia, 2012

Category of Driver	No. of Drivers	Drivers Tested		Positive BAC			BAC >80 mg%		
		No.	% of total	No.	% of tested	% of all drivers with +BAC	No.	% of tested	% of all drivers with BAC >80 mg%
<u>Age Group</u>									
<20*	5	5	100.0	2	40.0	13.3	1	20.0	7.7
20-25	9	8	88.9	1	12.5	6.7	1	12.5	7.7
26-35	2	2	100.0	1	50.0	6.7	1	50.0	7.7
36-45	8	8	100.0	5	62.5	33.3	5	62.5	38.5
46-55	13	12	92.3	3	25.0	20.0	3	25.0	23.1
>55	23	20	87.0	3	15.0	20.0	2	10.0	15.4
<u>Gender</u>									
Male	48	45	93.8	14	31.1	93.3	12	26.7	92.3
Female	12	10	83.3	1	10.0	6.7	1	10.0	7.7
<u>Vehicle Type</u>									
Automobiles	43	41	95.3	11	26.8	73.3	10	24.4	76.9
Truck/Van	8	6	75.0	3	50.0	20.0	2	33.3	15.4
Motorcycles	8	7	87.5	1	14.3	6.7	1	14.3	7.7
Tractor Trailer	1	1	100.0	0	0.0	0.0	0	0.0	0.0
<u>Collision Type</u>									
Single vehicle	33	30	90.9	11	36.7	73.3	9	30.0	69.2
Multiple vehicle	27	25	92.6	4	16.0	26.7	4	16.0	30.8
<u>Duration Between Crash and Death Time</u>									
Within 30 Days	60	55	91.7	15	27.3	100.0	13	23.6	100.0
> 30 Days	0	0	0.0	0	0.0	0.0	0	0.0	0.0
TOTAL	60	55	91.7	15	27.3	100.0	13	23.6	100.0

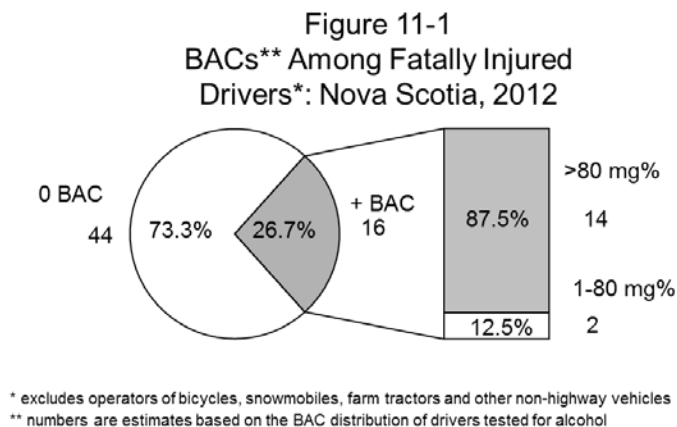
* Drivers in two age groups have been aggregated to ensure that an individual will not be identified.

The main findings are shown by the totals at the bottom of the table. Nova Scotia had a very high testing rate in 2012, with 91.7% of fatally injured drivers being tested for alcohol use.

In Nova Scotia, 27.3% had been drinking and 13 of 15 (86.7%) fatally injured drinking drivers had BACs over 80 mg%. Although not shown in the table, more refined analyses by different BAC categories show that among tested drivers:

- > 72.7% had BACs of zero mg%
- > 3.6% had BACs from 1-49 mg%;
- > 0.0% had BACs from 50-80 mg%
- > 9.1% had BACs from 81 to 160 mg%; and,
- > 14.5% had BACs over 160 mg%.

The BAC distribution for fatally injured drivers is shown in Figure 11-1. In this figure 16 of 60 (26.7%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 14 (87.5%) have BACs over 80 mg%.



11.2.1 Age differences. Drivers under 16 and 16-19 have been regrouped (under 20 age group) to ensure that individuals cannot be identified. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 33.3% were aged 36-45; 20.0% were aged 46-55 and over 55; 13.3% were under 20 years of age; and 6.7% were aged 20-25 and 26-35.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 38.5% were aged 36-45; 23.1% were aged 46-55; 15.4% were over 55; and 7.7% were aged under 20, 20-25 and 26-35.

When comparing the incidence of drinking and driving among fatally injured drivers by age group, fatally injured drivers aged 36-45 were the most likely to have been drinking (62.5%). By contrast, 12.5% of the tested drivers aged 20-25 had been drinking.

11.2.2 Gender differences. Males dominate the picture – they account for 93.3% of all of the fatally injured drivers who had been drinking and 92.3% of those who were legally impaired.

Males dominate the picture largely because they account for most of the drivers who are killed (48 of the 60 fatalities or 80.0% are males). Fatally injured male drivers were more likely to have been drinking than female drivers (31.1% and 10.0%, respectively). And 85.7% of the male drivers and 100.0% of the female drivers who were drinking had BACs over the legal limit.

11.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 73.3% were automobile drivers; 20.0% were truck/van drivers; and 6.7% were motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 76.9% were automobile drivers; 15.4% were truck/van drivers; and 7.7% were motorcyclists.

Within each of the vehicle types, 50.0% of fatally injured truck/van drivers, 26.8% of automobile drivers; and 14.3% of motorcyclists were found to have been drinking.

11.2.4 Collision differences. Just over half of the drivers killed (33 of the 60) were involved in single-vehicle collisions but these crashes accounted for 73.3% of the drivers who had been drinking and 69.2% of the drivers who were legally impaired.

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Over one-third of the drivers involved in single-vehicle crashes (36.7%) were positive for alcohol, compared to 16.0% of those involved in multiple-vehicle collisions.

11.2.5 Duration between crash and death time. Given that all of the fatally injured drivers died within 30 days of the collision, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time is not applicable.

11.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in Nova Scotia. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 11-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 368 drivers were involved in crashes in which someone was seriously injured, and among these 19.0% were alcohol-related crashes.

11.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 28.6% were aged 26-35; 22.9% were aged 20-25; 14.3% were aged 16-19 and 36-45; 8.6% were aged 46-55; and 7.1% were over 55.

Almost one-third of the drivers aged 26-35 and 20-25 were involved in alcohol-related serious injury crashes (30.3% and 30.2%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for those under 16 and over 55 (0.0 and 7.0%, respectively).

11.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 82.9% were males. The incidence of involvement in alcohol-related serious injury crashes was greater for males than for females (22.8% and 9.2%, respectively).

11.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 57.1% were automobile drivers; 30.0% were truck/van drivers; and 8.6% were off-road vehicle drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for drivers of off-road vehicles – 28.6% of these drivers were in crashes that involved alcohol, compared to 22.1% for

truck/van drivers; 20.6% for automobile drivers; and 9.1% for tractor-trailer drivers. Among motorcyclists, 4.7% were involved in alcohol-related crashes.

Table 11-3
Drivers in Alcohol-Related Serious Injury Crashes:
Nova Scotia, 2012

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	4	0	0.0	0.0
16-19	41	10	24.4	14.3
20-25	53	16	30.2	22.9
26-35	66	20	30.3	28.6
36-45	53	10	18.9	14.3
46-55	64	6	9.4	8.6
>55	71	5	7.0	7.1
unknown	16	3	18.8	4.3
<u>Gender</u>				
Male	254	58	22.8	82.9
Female	98	9	9.2	12.9
unknown	16	3	18.8	4.3
<u>Vehicle Type</u>				
Auto	194	40	20.6	57.1
Truck/Van	95	21	22.1	30.0
Motorcycle	43	2	4.7	2.9
Tractor Trailer	11	1	9.1	1.4
Other Hwy. Vehicle	2	0	0.0	0.0
Off-Road	21	6	28.6	8.6
Unknown	2	0	0.0	0.0
<u>Collision Type</u>				
Single-Vehicle	167	56	33.5	80.0
Multiple-Vehicle	201	14	7.0	20.0
TOTAL	368	70	19.0	100.0

11.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 80.0% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 33.5% of these drivers, compared to only 7.0% for drivers involved in multiple-vehicle crashes.

11.4 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in Nova Scotia during 2012. Table 11-4 shows the prevalence of drug use among fatally injured drivers of highway vehicles as well as the number of drivers who tested positive for various categories of drugs.

As can be seen, Nova Scotia had a very high testing rate in 2012, with 90.0% of fatally injured drivers being tested for drug use.

Among fatally injured tested drivers, 20 out of 54 (37.0%) were positive for drugs. The most common category of drugs found within drivers testing positive for drug use was cannabis (55.0%). Other categories

of drugs found in fatally injured drivers testing positive for drugs were CNS stimulants (35.0%), CNS depressants (30.0%), and narcotic analgesics (25.0%).

Table 11-4
Drug Use Among Fatally Injured Drivers of
Highway Vehicles: Nova Scotia, 2012

Prevalence of Drug Use				
Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
60	54	(90.0)	20	(37.0)

Categories of Drugs Found Among Drivers Testing Positive		
Drug Category	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
Cannabis	11	(55.0)
CNS Stimulants	7	(35.0)
CNS Depressants	6	(30.0)
Narcotic Analgesics	5	(25.0)
Hallucinogens	0	(0.0)
Dissociative Anesthetics	0	(0.0)
Inhalants	0	(0.0)

* Percentages will not add up to 100% due to multiple drug types found in blood samples of some drivers.

11.5 Trends in alcohol and drug-impaired driving

Sections 11.1 through 11.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol (within 12 months and 30 days of the collision); (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 11.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

11.5.1 Deaths in alcohol-related crashes: 1995-2012. Table 11-5 and Figure 11-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 11.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

As shown in the figure, the number of deaths in crashes that involved a drinking driver generally dropped from 56 in 1995 to a low of 17 in 2008, increased to 25 in 2009, decreased to 18 in 2010, and rose again to 23 in 2012. The percentage of alcohol-related fatalities generally decreased from 50.9% in 1995 to a low of 21.3% in 2008, increased to 36.8% in 2009, decreased to 26.9% in 2010, and increased again to 28.4% in 2012.

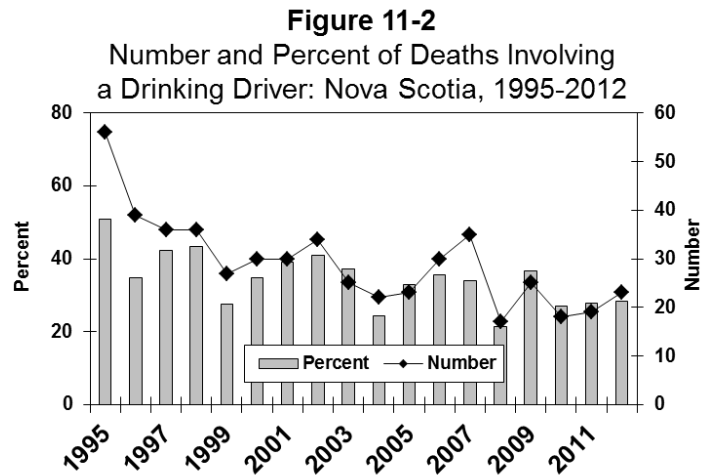
As shown at the bottom of the table, during the 2006-2010 baseline period there was an average of 25 fatalities involving a drinking driver and they accounted for 31.3% of all fatalities. This means that the percent of fatalities involving a drinking driver decreased by 10.5% from 31.3% in the baseline period (2006-2010) to 28.0% in the 2011-2012 period. In terms of the number of persons killed in crashes involving a drinking driver, there has been a 16.0% decrease from an average of 25 in the baseline period (2006-2010) to 21 in the 2011-2012 period.

Table 11-5
Number* and Percent of Motor Vehicle Deaths Involving a**
Drinking Driver: Nova Scotia, 1995-2012

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths Number	% of total	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	110	56	50.9	107	54	50.5
1996	112	39	34.8	112	39	34.8
1997	85	36	42.4	85	36	42.4
1998	83	36	43.4	83	36	43.4
1999	98	27	27.6	98	27	27.6
2000	86	30	34.9	86	30	34.9
2001	77	30	39.0	75	30	40.0
2002	83	34	41.0	82	33	40.2
2003	67	25	37.3	67	25	37.3
2004	90	22	24.4	89	22	24.7
2005	70	23	32.9	70	23	32.9
2006	84	30	35.7	83	30	36.1
2007	103	35	34.0	102	35	34.3
2008	80	17	21.3	79	17	21.5
2009	68	25	36.8	67	25	37.3
2010	67	18	26.9	67	18	26.9
2011	68	19	27.9	66	19	28.8
2012	81	23	28.4	79	23	29.1
2006-2010 baseline	80	25	31.3	80	25	31.3
2011-2012 period	75	21	28.0	73	21	28.8

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.



11.5.2 Alcohol use among fatally injured drivers: Data on alcohol use among fatally injured drivers over the 26-year period from 1987-2012 are shown in Table 11-6. Trends are illustrated in Figure 11-3 which shows changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol (represented by the white area); (2) had BACs below the legal limit (shown by the light grey area); and (3) had BACs over the legal limit (the dark grey area). The data reported here are restricted to drivers who died in less than six hours after the crash (see Section 2.2.2).

As can be seen, the percent of fatally injured drivers with BACs over the legal limit peaked in 1989 (53.5%), generally decreased to a low in 2008 (18.4%), rose to 39.5% in 2009, decreased in 2010 (25.0%), rose in 2011 (32.4%), and decreased again in 2012 (24.5%). The percent of fatally injured drivers with zero BACs dropped to its lowest point in 1989 (35.6%) peaked in 2008 (77.6%), decreased in 2009 (58.1%), rose in 2010 (67.5%), decreased in 2011 (61.8%), and rose again in 2012 (71.7%). The percent of fatally injured drivers with BACs between 1 and 80 mg% dropped to its lowest mark in 1993 and 2000 (0.0%), peaked at 20.0% in 2002, generally decreased until 2009 (2.3%), rose in 2010 (7.5%), and decreased until 2012 (3.8%).

When compared to the 2006-2010 baseline period shown at the bottom of Table 11-6, the percentage of fatally injured drivers with zero BACs in the 2011-2012 period decreased by 1.2% (from 69.0% to 68.2%). Among drivers with BACs from 1-80 mg%, there was a 6.3% decrease (from 4.8% to 4.5%). And among drivers with BACs over 80 mg%, there was a 4.2% increase (from 26.2% to 27.3%).

Table 11-6
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Nova Scotia, 1987-2012

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	79	62	78.5	37	59.7	5	8.1	20	32.3
1988	85	61	71.8	25	41.0	9	14.8	27	44.3
1989	61	45	73.8	16	35.6	5	11.1	24	53.3
1990	67	58	86.6	29	50.0	8	13.8	21	36.2
1991	54	41	75.9	23	56.1	5	12.2	13	31.7
1992	53	37	69.8	17	45.9	3	8.1	17	45.9
1993	52	39	75.0	20	51.3	0	0.0	19	48.7
1994	50	41	82.0	19	46.3	4	9.8	18	43.9
1995	57	47	82.5	25	53.2	4	8.5	18	38.3
1996	49	36	73.5	20	55.6	1	2.8	15	41.7
1997	41	35	85.4	19	54.3	4	11.4	12	34.3
1998	46	35	76.1	16	45.7	1	2.9	18	51.4
1999	52	37	71.2	21	56.8	3	8.1	13	35.1
2000	47	42	89.4	21	50.0	0	0.0	21	50.0
2001	48	44	91.7	25	56.8	4	9.1	15	34.1
2002	36	35	97.2	16	45.7	7	20.0	12	34.3
2003	44	43	97.7	26	60.5	1	2.3	16	37.2
2004	40	37	92.5	28	75.7	2	5.4	7	18.9
2005	39	39	100.0	21	53.8	2	5.1	16	41.0
2006	37	37	100.0	26	70.3	1	2.7	10	27.0
2007	44	43	97.7	27	62.8	4	9.3	12	27.9
2008	50	49	98.0	38	77.6	2	4.1	9	18.4
2009	44	43	97.7	25	58.1	1	2.3	17	39.5
2010	40	40	100.0	27	67.5	3	7.5	10	25.0
2011	34	34	100.0	21	61.8	2	5.9	11	32.4
2012	53	53	100.0	38	71.7	2	3.8	13	24.5
2006-2010 baseline	43	42	(97.7)	29	(69.0)	2	(4.8)	11	(26.2)
2011-2012 period	44	44	(100.0)	30	(68.2)	2	(4.5)	12	(27.3)

* dying in less than six hours.

Figure 11-3
Trends in Alcohol Use Among Driver
Fatalities: Nova Scotia, 1987-2012

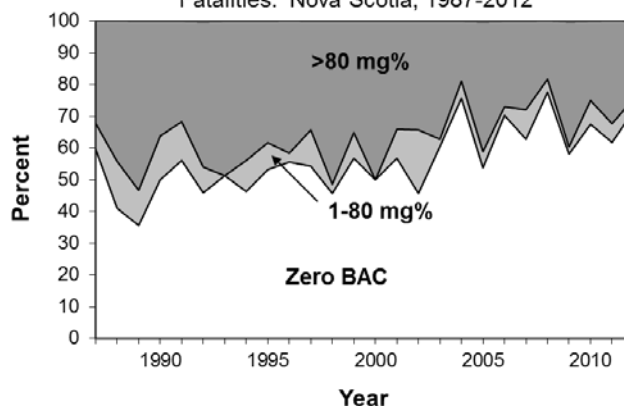


Table 11-7 and Figure 11-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2012. These results also differ from those reported above for several reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 11-1). Second, estimates are based on all fatally injured drivers, not just those who died in less than six hours from the crash. Third, drivers are grouped in only two BAC categories: zero and positive.

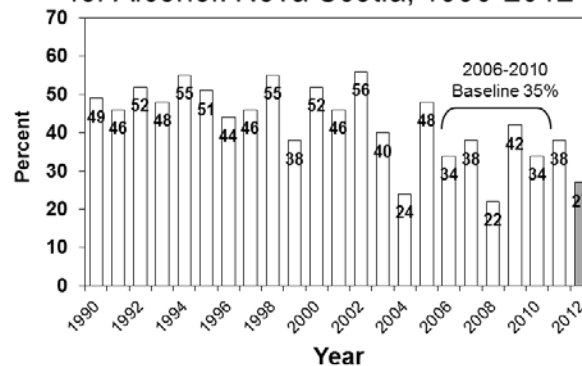
As can be seen at the bottom of Table 11-7, the baseline percentage of fatally injured drivers testing positive for alcohol from 2006-2010 is 34.7%. In the 2011-2012 period, 31.4% of fatally injured drivers tested positive for alcohol, a 9.5% decrease from the baseline period.

Table 11-7
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
Nova Scotia, 1990-2012

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	93	38	(40.9)	37	(39.8)
1991	63	34	(54.0)	29	(46.0)
1992	66	32	(48.5)	34	(51.5)
1993	60	31	(51.7)	29	(48.3)
1994	60	27	(45.0)	33	(55.0)
1995	67	33	(49.3)	34	(50.7)
1996	57	32	(56.1)	25	(43.9)
1997	46	25	(54.3)	21	(45.7)
1998	51	23	(45.1)	28	(54.9)
1999	60	37	(61.7)	23	(38.3)
2000	56	27	(48.2)	29	(51.8)
2001	55	30	(54.5)	25	(45.5)
2002	41	18	(43.9)	23	(56.1)
2003	47	28	(59.6)	19	(40.4)
2004	45	34	(75.6)	11	(24.4)
2005	42	22	(52.4)	20	(47.6)
2006	47	31	(66.0)	16	(34.0)
2007	55	34	(61.8)	21	(38.2)
2008	55	43	(78.2)	12	(21.8)
2009	48	28	(58.3)	20	(41.7)
2010	41	27	(65.9)	14	(34.1)
2011	42	26	(61.9)	16	(38.1)
2012	60	44	(73.3)	16	(26.7)
2006-2010 baseline	49	32	(65.3)	17	(34.7)
2011-2012 period	51	35	(68.6)	16	(31.4)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol

Figure 11-4
Percent of Fatally Injured Drivers* Positive
for Alcohol: Nova Scotia, 1990-2012



11.5.3 Drivers in serious injury crashes: Table 11-8 and Figure 11-5 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (2006-2010), an average of 24.1% of drivers in serious injury crashes were in an alcohol-involved crash. This percentage decreased to 18.1% in 2011, then rose to 19.0% in 2012. In the 2011-2012 period, an average of 18.5% of drivers in serious injury crashes were in an alcohol-involved crash. This represents a 23.2% decrease in the problem compared to the 2006-2010 baseline period.

Table 11-8
Number and Percent of All Drivers in Serious Injury Crashes*
that Involved Alcohol: Nova Scotia, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	523	95	(18.2)
1996	492	115	(23.4)
1997	511	110	(21.5)
1998	464	90	(19.4)
1999	610	129	(21.1)
2000	427	99	(23.2)
2001	436	103	(23.6)
2002	411	85	(20.7)
2003	358	83	(23.2)
2004	365	82	(22.5)
2005	367	94	(25.6)
2006	352	89	(25.3)
2007	370	95	(25.7)
2008	307	62	(20.2)
2009	353	80	(22.7)
2010	317	82	(25.9)
2011	365	66	(18.1)
2012	368	70	(19.0)
2006-2010 baseline	340	82	(24.1)
2011-2012 period	367	68	(18.5)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

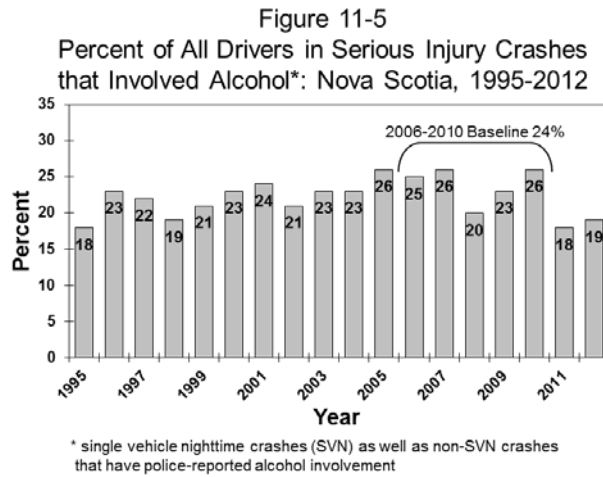


Table 11-9 and Figure 11-6 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 11.3 and in Table 11-8 and Figure 11-5 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has fluctuated over this 18-year period. Between 1995 and 2005 the percentage of all drivers in serious injury crashes that involved alcohol rose from 18.5% to 26.1%. Since then, the incidence generally decreased until 2008 (20.0%), rose until 2010 (25.8%), decreased in 2011 (17.1%), and increased in 2012 (18.3%).

In the baseline period (2006-2010), an average of 23.9% of drivers in serious injury crashes were in an alcohol-involved crash. In the 2011-2012 period, the percentage of drivers in serious injury crashes involving alcohol was 17.7%, resulting in a 25.9% decrease.

Table 11-9

Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: Nova Scotia, 1995-2012

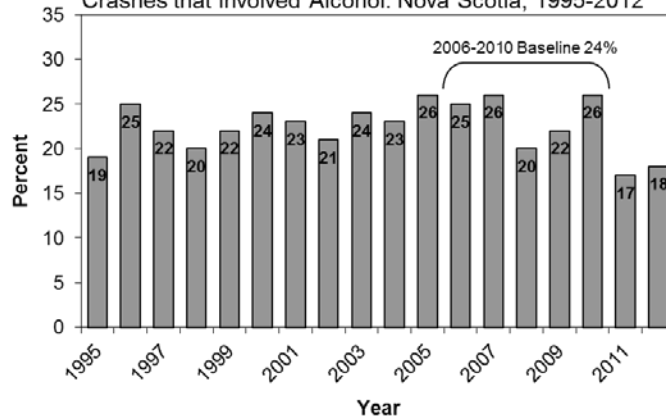
Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	491	91	(18.5)
1996	458	114	(24.9)
1997	458	102	(22.3)
1998	427	87	(20.4)
1999	577	125	(21.7)
2000	390	92	(23.6)
2001	400	93	(23.3)
2002	383	81	(21.1)
2003	332	78	(23.5)
2004	351	81	(23.1)
2005	330	86	(26.1)
2006	333	83	(24.9)
2007	336	88	(26.2)
2008	290	58	(20.0)
2009	332	73	(22.0)
2010	299	77	(25.8)
2011	345	59	(17.1)
2012	355	65	(18.3)
2006-2010 baseline	318	76	(23.9)
2011-2012 period	350	62	(17.7)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 11-6

Percent of Drivers of Highway Vehicles in Serious Injury Crashes that Involved Alcohol: Nova Scotia, 1995-2012



11.5.4 Drug use among fatally injured drivers: Table 11-10 and Figure 11-7 show data on drug use among fatally injured drivers over a 13-year period (2000-2012). Similar to Table 11-6, these results are based on fatally injured drivers of highway vehicles who died less than six hours after the crash (see Section 2.2.5).

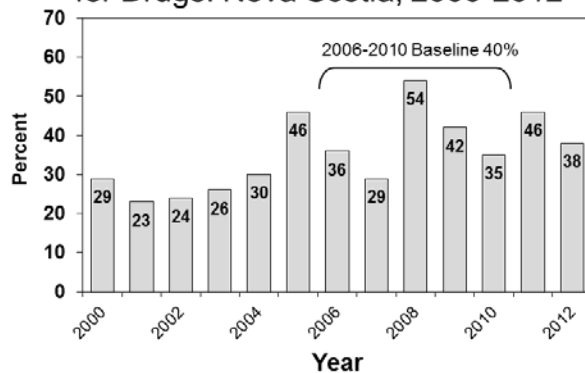
As can be seen at the bottom of Table 11-10, the percentage of fatally injured drivers testing positive for drugs from 2006-2010, the baseline period, is 40.0%. In the 2011-2012 period, 41.9% of fatally injured drivers tested positive for drugs, a 4.8% increase from the baseline period.

Table 11-10
Drug Use Among Fatally Injured Drivers* of Highway Vehicles:
Nova Scotia, 2000-2012

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative	(% Tested)	Positive	(% Tested)
2000	47	34	72.3	24	70.6	10	29.4
2001	48	40	83.3	31	77.5	9	22.5
2002	36	34	94.4	26	76.5	8	23.5
2003	44	39	88.6	29	74.4	10	25.6
2004	40	33	82.5	23	69.7	10	30.3
2005	39	35	89.7	19	54.3	16	45.7
2006	37	33	89.2	21	63.6	12	36.4
2007	44	42	95.5	30	71.4	12	28.6
2008	50	41	82.0	19	46.3	22	53.7
2009	44	43	97.7	25	58.1	18	41.9
2010	40	40	100.0	26	65.0	14	35.0
2011	34	33	97.1	18	54.5	15	45.5
2012	53	53	100.0	33	62.3	20	37.7
2006-2010 baseline	43	40	93.0	24	60.0	16	40.0
2011-2012 period	44	43	97.7	25	58.1	18	41.9

* dying in less than six hours.

Figure 11-7
Percent of Fatally Injured Drivers Positive
for Drugs: Nova Scotia, 2000-2012



12.0 PRINCE EDWARD ISLAND

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in Prince Edward Island during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 12.1);
- > alcohol use among fatally injured drivers (Section 12.2);
- > drivers involved in alcohol-related serious injury crashes (Section 12.3);
- > drug use among fatally injured drivers (Section 12.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 12.5).

12.1 Deaths in alcohol-related crashes

Table 12-1 presents information on people who died in alcohol-related crashes in Prince Edward Island during 2012 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, it can be seen that among persons dying within 12 months of the collision, four people aged 25 and under were killed in motor vehicle crashes in Prince Edward Island during 2012. And, in all four cases (100.0%) it was possible to determine if alcohol was a factor in the crash. The next column shows the number of people killed in crashes that were known to be alcohol-involved. There were two people aged 25 and under who died in alcohol-related crashes in Prince Edward Island during 2012. The next column expresses this as a percentage – i.e., 50.0% of those aged 25 and under who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among those aged 25 and under represent 25.0% of all the people killed in alcohol-related crashes in Prince Edward Island during 2012.

An examination of the section for persons dying within 30 days of the collision shows that four persons aged 25 and under died in motor vehicle crashes. In all four of these cases (100.0%), it was possible to determine if alcohol was a factor in the crash. Among these persons, two (50.0%) were alcohol-related deaths. And those aged 25 and under accounted for 25.0% of people dying in alcohol-related crashes.

The totals at the bottom of the table provide a summary. As can be seen, 13 persons died within 12 months of a motor vehicle crash in Prince Edward Island during 2012. In 13 (100.0%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, eight (61.5%) involved alcohol. *In Prince Edward Island during 2012, eight persons died in alcohol-related crashes within 12 months of the collision.*

Among the 12 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 100.0% of the cases. Of these cases, eight (66.7%) involved alcohol. *In Prince Edward Island during 2012, eight persons died in alcohol-related crashes within 30 days of the collision.*

Table 12-1
Deaths in Alcohol-Related Crashes: Prince Edward Island, 2012

Category of Victim	Persons Dying Within 12 Months of Collision						Persons Dying Within 30 Days of Collision					
	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)		
		No.	% of total	No.	% of known	% of all ARDs		No.	% of total	No.	% of known	% of all ARDs
Age Group												
25 and under	4	4	100.0	2	50.0	25.0	4	4	100.0	2	50.0	25.0
26 and over	9	9	100.0	6	66.7	75.0	8	8	100.0	6	75.0	75.0
Gender												
Male	9	9	100.0	6	66.7	75.0	9	9	100.0	6	66.7	75.0
Female	4	4	100.0	2	50.0	25.0	3	3	100.0	2	66.7	25.0
Victim Type												
Driver/ Operator	8	8	100.0	6	75.0	75.0	7	7	100.0	6	85.7	75.0
Other**	5	5	100.0	2	40.0	25.0	5	5	100.0	2	40.0	25.0
Vehicle Occupied												
Automobiles	7	7	100.0	4	57.1	50.0	6	6	100.0	4	66.7	50.0
Other***	6	6	100.0	4	66.7	50.0	6	6	100.0	4	66.7	50.0
Collision Location												
Public Road	12	12	100.0	8	66.7	100.0	11	11	100.0	8	72.7	100.0
Offroad	1	1	100.0	0	0.0	0.0	1	1	100.0	0	0.0	0.0
TOTAL	13	13	100.0	8	61.5	100.0	12	12	100.0	8	66.7	100.0

* Persons in two age groups have been aggregated to ensure that an individual will not be identified.

** Passengers and pedestrians have been aggregated to ensure that an individual will not be identified.

*** Pedestrians, truck/van, tractor-trailer and off-road vehicle occupants have been aggregated to ensure that an individual will not be identified.

12.1.1 Victim age. Persons under age 16 and 20-25 (regrouped as 25 and under) and those aged 26-35, 36-45, 46-55, and over 55 (regrouped as 26 and over) have been placed into broader age groups to ensure that individuals cannot be identified. Of all the people who died in alcohol-related crashes within 12 months of the collision, 25.0% (see last column in the first section) were aged 25 and under while 75.0% were aged 26 and over.

The highest incidence of alcohol involvement occurred in the crashes in which a person aged 26 and over died (66.7%). The lowest incidence of alcohol involvement was found among the persons 25 and under as 50.0% of persons in this age group died in crashes involving alcohol.

12.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 75.0% were males. The incidence of alcohol in crashes in which a male died (66.7%) was greater than the incidence of alcohol in crashes in which a female died (50.0%).

12.1.3 Victim type. Passengers and pedestrians have been regrouped into 'other' victim types to ensure that individuals cannot be identified. Of all the people who died in alcohol-related crashes within 12 months of the collision, 75.0% were drivers/operators and 25.0% were other victim types.

Within each of the victim types, the highest incidence of alcohol involvement (75.0%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 40.0% of the crashes in which other victim types died.

12.1.4 Type of vehicle occupied. Pedestrians, truck/van, tractor-trailer, and off-road vehicle occupants have been regrouped into 'other' vehicles occupied to ensure that individuals cannot be identified. Of all the people who died in alcohol-related crashes within 12 months of the collision, 50.0% were automobile occupants and 50.0% were other vehicle occupants.

Within each of these vehicle types, the incidence of alcohol involvement in which other vehicle occupants died (66.7%) was greater than the incidence of alcohol in crashes in which an automobile occupant died (57.1%).

12.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured within 12 months of the collision in Prince Edward Island during 2012. Table 12-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time (within 12 months of the collision vs. within 30 days of the collision).

The first column in the table shows the number of drivers killed. The next columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests – the first three of these present results for drivers who showed any evidence of alcohol; the last three columns present information on drivers who had BACs over the statutory limit of 80 mg%.

To illustrate, among 20-55 year olds there were four drivers killed during 2012; all of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, three (75.0%) were positive for alcohol. This means that fatally injured drinking drivers aged 20-55 accounted for 75.0% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that two (50.0%) of the fatally injured drivers aged 20-55 years of age who were tested for alcohol had BACs in excess of 80 mg%. This means that two of the three drivers who were positive for alcohol had a BAC in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. As can be seen, drivers aged 20-55 accounted for 100.0% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Prince Edward Island had a high testing rate in 2012, with 83.3% of fatally injured drivers being tested for alcohol use.

Table 12-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Prince Edward Island, 2012

Category of Driver	No. of Drivers	Drivers Tested		Positive BAC			BAC >80 mg%		
		No.	% of total	No.	% of tested	% of all drivers with +BAC	No.	% of tested	% of all drivers with BAC >80 mg%
<u>Age Group</u>									
20-55*	4	4	100.0	3	75.0	75.0	2	50.0	100.0
>55	2	1	50.0	1	100.0	25.0	0	0.0	0.0
<u>Gender</u>									
Male	4	4	100.0	3	75.0	75.0	1	25.0	50.0
Female	2	1	50.0	1	100.0	25.0	1	100.0	50.0
<u>Collision Type</u>									
Single vehicle	4	4	100.0	3	75.0	75.0	2	50.0	100.0
Multiple vehicle	2	1	50.0	1	100.0	25.0	0	0.0	0.0
<u>Duration Between Crash and Death Time</u>									
Within 30 Days	5	5	100.0	4	80.0	100.0	2	40.0	100.0
> 30 Days	1	0	0.0	0	0.0	0.0	0	0.0	0.0
TOTAL	6	5	83.3	4	80.0	100.0	2	40.0	100.0

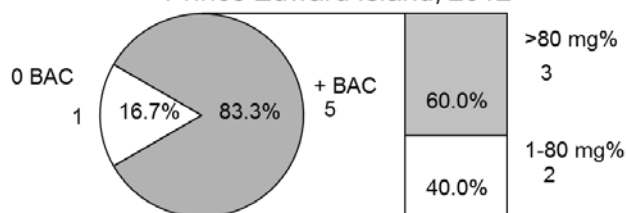
* Drivers in multiple age groups have been aggregated to ensure that an individual will not be identified.

In Prince Edward Island, 80.0% had been drinking and two out of four (50.0%) of the fatally injured drinking drivers had BACs over 80 mg%. Although not shown in the table, more refined analyses by different BAC categories show that among tested drivers:

- > 20.0% had BACs of zero mg%;
- > 40.0% had BACs from 1-49 mg%;
- > 0.0% had BACs from 50-80 mg%;
- > 0.0% had BACs from 81-160 mg%; and,
- > 40.0% had BACs over 160 mg%.

The BAC distribution for fatally injured drivers is shown in Figure 12-1. As can be seen, five of six (83.3%) fatally injured drivers have positive BACs. And among fatally injured drinking drivers, three (60.0%) have BACs over 80 mg%.

Figure 12-1
BACs** Among Fatally Injured Drivers*:
Prince Edward Island, 2012



* excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles
** numbers are estimates based on the BAC distribution of drivers tested for alcohol

12.2.1 Age differences. Drivers aged 20-25, 26-35, 36-45 and 46-55 have been regrouped (20-55 age group) to ensure that individuals cannot be identified. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 75.0% were aged 20-55 and 25.0% were over age 55.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 100.0% were aged 20-55.

When comparing the incidence of drinking and driving among fatally injured drivers by age group, fatally injured tested drivers over 55 years of age were the most likely to have been drinking (100.0%). Three-quarters (75.0%) of the drivers aged 20-55 had been drinking.

12.2.2 Gender differences. Males dominate the picture as they account for 75.0% of all the fatally injured drivers who had been drinking and 50.0% of fatally injured drivers that were legally impaired.

Males dominate the picture largely because they account for most of the drivers who are killed (four of the six fatalities or 66.7% are males). However, fatally injured female drivers were more likely to have been drinking than male drivers (100.0% and 75.0%, respectively). And, 100.0% of the female drivers and 33.3% of the male drivers who were drinking had BACs over the legal limit.

12.2.3 Vehicle differences. In order to ensure that individual drivers cannot be identified, detailed analysis of alcohol use among fatally injured drivers based on vehicle type is not provided in this subsection.

12.2.4 Collision differences. Four of six drivers killed (66.7%) were involved in single-vehicle collisions and these crashes accounted for 75.0% of the drivers who had been drinking as well as 100.0% those who were legally impaired.

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. However, a smaller percentage of the drivers involved in single-vehicle crashes (75.0%) were positive for alcohol, compared to 100.0% of those involved in multiple-vehicle collisions.

12.2.5 Duration between crash and death time. Given only one fatally injured driver died more than 30 days after the collision, and this driver was not tested for alcohol, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time is not applicable.

12.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in Prince Edward Island. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 12-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 68 drivers were involved in crashes in which someone was seriously injured, and among these 27.9% were alcohol-related crashes.

12.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 42.1% were aged 20-25; 15.8% were aged 36-45, 46-55, and over 55; and 5.3% were aged 16-19 and 26-35.

Almost half of the drivers aged 20-25 were involved in alcohol-related serious injury crashes (47.1%). The lowest incidence of involvement in alcohol-related crashes was found for those under 16 (0.0%), 16-19 and 26-35 (12.5% each).

12.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 73.7% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (31.1% and 22.7%, respectively).

12.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 73.7% were automobile drivers; 15.8% were off-road vehicle drivers; and 10.5% were motorcyclists.

The highest incidence of involvement in alcohol-related serious injury crashes was found for off-road vehicle drivers (60.0%) compared to 34.1% for automobile drivers. Among motorcyclists, 28.6% were involved in alcohol-related crashes.

12.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 78.9% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 42.9% of these drivers, compared to only 12.1% for drivers involved in multiple-vehicle crashes.

Table 12-3
Drivers in Alcohol-Related Serious Injury Crashes:
Prince Edward Island, 2012

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	1	0	0.0	0.0
16-19	8	1	12.5	5.3
20-25	17	8	47.1	42.1
26-35	8	1	12.5	5.3
36-45	11	3	27.3	15.8
46-55	11	3	27.3	15.8
>55	11	3	27.3	15.8
unknown	1	0	0.0	0.0
<u>Gender</u>				
Male	45	14	31.1	73.7
Female	22	5	22.7	26.3
unknown	1	0	0.0	0.0
<u>Vehicle Type</u>				
Auto	41	14	34.1	73.7
Truck/Van	11	0	0.0	0.0
Motorcycle	7	2	28.6	10.5
Tractor Trailer	3	0	0.0	0.0
Off-Road	5	3	60.0	15.8
Unknown	1	0	0.0	0.0
<u>Collision Type</u>				
Single-Vehicle	35	15	42.9	78.9
Multiple-Vehicle	33	4	12.1	21.1
TOTAL	68	19	27.9	100.0

12.4 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in Prince Edward Island during 2012. Table 12-4 shows the prevalence of drug use among fatally injured drivers of highway vehicles as well as the number of drivers who tested positive for various categories of drugs.

As can be seen, Prince Edward Island had a high testing rate in 2012, with 83.3% of fatally injured drivers being tested for drug use.

Among fatally injured tested drivers, one out of five (20.0%) were positive for drugs. The most common categories of drugs found within drivers testing positive for drug use was CNS depressants (100.0%).

Table 12-4
Drug Use Among Fatally Injured Drivers of
Highway Vehicles: Prince Edward Island, 2012

Prevalence of Drug Use				
Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
6	5	(83.3)	1	(20.0)

Types of Drugs Found Among Drivers Testing Positive		
Drug Type	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
CNS Depressants	1	(100.0)
Cannabis	0	(0.0)
Narcotic Analgesics	0	(0.0)
CNS Stimulants	0	(0.0)
Hallucinogens	0	(0.0)
Dissociative Anesthetic	0	(0.0)
Inhalants	0	(0.0)

12.5 Trends in alcohol and drug-impaired driving

Sections 12.1 through 12.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol (within 12 months and 30 days of the collision); (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 12.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

12.5.1 Deaths in alcohol-related crashes: 1995-2012. Table 12-5 and Figure 12-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 12.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

As shown in the table and figure, the number of deaths in crashes that involved a drinking driver generally dropped from nine to three between 1995 and 1998. This number fluctuated between 2002 and 2005, peaked at 14 in 2006, generally decreased to a low of one in 2010, rose to 10 in 2011, and decreased again to eight in 2012. The percentage of alcohol-related fatalities generally decreased from 56.3% in 1995 to 14.3% in 1998. Since then, the percentage of alcohol-related fatalities in Prince Edward Island rose to 56.3%

in 2003, decreased to 20.0% in 2005, rose to 51.9% in 2006, fell to a low of 11.1% in 2010, and rose again to 66.7% in 2012.

As shown at the bottom of the table, during the 2006-2010 baseline period, there was an average of seven fatalities involving a drinking driver and they accounted for 46.7% of all fatalities. Thus, it can be seen that the percent of fatalities involving a drinking driver increased by 28.5% from 46.7% in the baseline period (2006-2010) to 60.0% in the 2011-2012 period. And, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 28.6% increase from an average of seven in the baseline period (2006-2010) to nine in the 2011-2012 period.

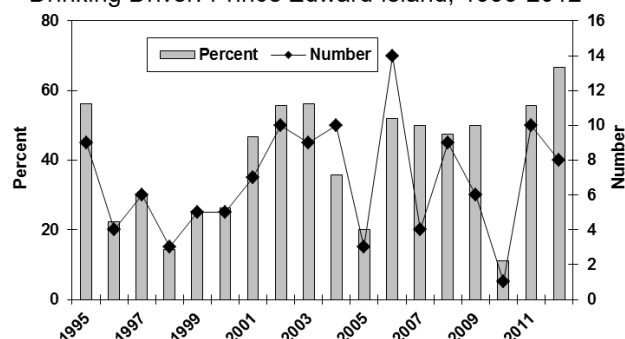
Table 12-5
Number* and Percent of Motor Vehicle Deaths Involving a**
Drinking Driver: Prince Edward Island, 1995-2012

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths Number	% of total	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	16	9	56.3	16	9	56.3
1996	18	4	22.2	15	4	26.7
1997	20	6	30.0	20	6	30.0
1998	21	3	14.3	20	2	10.0
1999	20	5	25.0	19	5	26.3
2000	19	5	26.3	19	5	26.3
2001	15	7	46.7	14	7	50.0
2002	18	10	55.6	17	9	52.9
2003	16	9	56.3	13	8	61.5
2004	28	10	35.7	28	10	35.7
2005	15	3	20.0	15	3	20.0
2006	27	14	51.9	26	14	53.8
2007	8	4	50.0	8	4	50.0
2008	19	9	47.4	17	9	52.9
2009	12	6	50.0	12	6	50.0
2010	9	1	11.1	9	1	11.1
2011	18	10	55.6	18	10	55.6
2012	12	8	66.7	11	8	72.7
2006-2010 baseline	15	7	46.7	14	7	50.0
2011-2012 period	15	9	60.0	15	9	60.0

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.

Figure 12-2
Number and Percent of Deaths Involving a
Drinking Driver: Prince Edward Island, 1995-2012



12.5.2 Alcohol use among fatally injured drivers: Data on alcohol use among fatally injured drivers over the 26-year period from 1987-2012 are shown in Table 12-6. Trends are illustrated in Figure 12-3 which shows changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol (represented by the white area); (2) had BACs below the legal limit (shown by the light grey area); and (3) had BACs over the legal limit (the dark grey area). The data reported here are restricted to drivers who died in less than six hours after the crash (see Section 2.2.2).

As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (60.0%) to 1997 (11.1%), generally increased until 2007 (66.7%), decreased in 2010 (0.0%), rose in 2011 (45.5%), and decreased again in 2012 (40.0%). The percent of fatally injured drivers with zero BACs generally increased from 1987 (40.0%) to its highest level in 1998 (87.5%), stabilized until 2006 (72.7%), dropped in 2007 and 2008 (33.3%), rose in 2010 (83.3%), and decreased to its lowest point in 2012 (20.0%). The percent of fatally injured drivers with BACs between 1 and 80 mg% reached 33.3% in 1990, fell to its lowest mark from 1998 to 2002 (0.0%), increased in 2003 (14.3%), returned to a low of 0.0% from 2005 to 2009, and rose to its highest level in 2012 (40.0%).

When compared to the 2006-2010 baseline period, the percentage of fatally injured drivers with zero BACs in the 2011-2012 period decreased by 60.0% (from 62.5% to 25.0%). Among drivers with BACs from 1-80 mg%, there was an increase from 0.0% to 25.0%. Among drivers with BACs over 80 mg%, there was a 33.3% increase 37.5% in the baseline period to 50.0% in the 2011-2012 period.

Table 12-6
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Prince Edward Island, 1987-2012

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	6	5	83.3	2	40.0	0	0.0	3	60.0
1988	9	8	88.9	4	50.0	0	0.0	4	50.0
1989	8	5	62.5	2	40.0	0	0.0	3	60.0
1990	10	9	90.0	4	44.4	3	33.3	2	22.2
1991	16	16	100.0	11	68.8	1	6.3	4	25.0
1992	7	6	85.7	3	50.0	1	16.7	2	33.3
1993	9	8	88.9	3	37.5	0	0.0	5	62.5
1994	11	11	100.0	7	63.6	1	9.1	3	27.3
1995	9	8	88.9	3	37.5	0	0.0	5	62.5
1996	13	13	100.0	9	69.2	1	7.7	3	23.1
1997	9	9	100.0	6	66.7	2	22.2	1	11.1
1998	8	8	100.0	7	87.5	0	0.0	1	12.5
1999	7	7	100.0	5	71.4	0	0.0	2	28.6
2000	10	9	90.0	6	66.7	0	0.0	3	33.3
2001	5	5	100.0	3	60.0	0	0.0	2	40.0
2002	10	10	100.0	6	60.0	0	0.0	4	40.0
2003	7	7	100.0	4	57.1	1	14.3	2	28.6
2004	15	14	93.3	8	57.1	1	7.1	5	35.7
2005	8	7	87.5	4	57.1	0	0.0	3	42.9
2006	11	11	100.0	8	72.7	0	0.0	3	27.3
2007	3	3	100.0	1	33.3	0	0.0	2	66.7
2008	12	12	100.0	4	33.3	0	0.0	8	66.7
2009	10	10	100.0	5	50.0	0	0.0	5	50.0
2010	6	6	100.0	5	83.3	1	16.7	0	0.0
2011	11	11	100.0	4	36.4	2	18.2	5	45.5
2012	5	5	100.0	1	20.0	2	40.0	2	40.0
2006-2010 baseline	8	8	(100.0)	5	(62.5)	0	(0.0)	3	(37.5)
2011-2012 period	8	8	(100.0)	2	(25.0)	2	(25.0)	4	(50.0)

* dying in less than six hours.

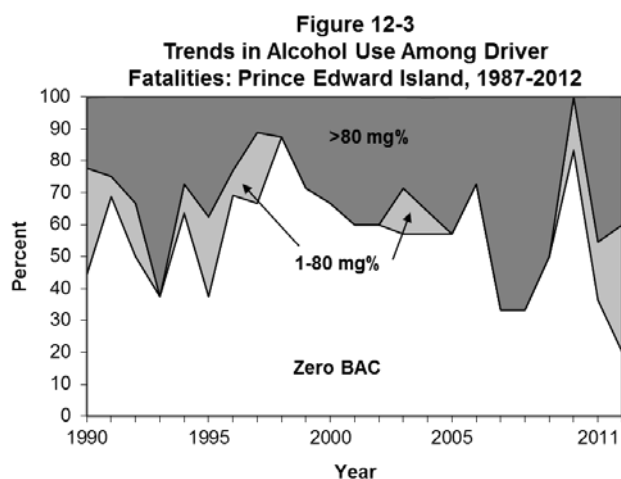


Table 12-7 and Figure 12-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2012. These results also differ from those reported above for several reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 12-1). Second, estimates are based on all fatally injured drivers, not just those who died in less than six hours from the crash. Third, drivers are grouped in only two BAC categories: zero and positive.

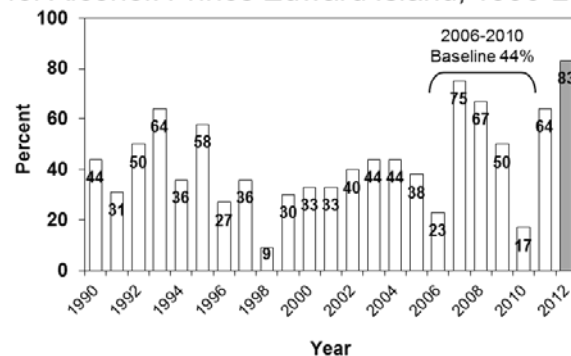
As can be seen in Table 12-7, the baseline percentage of fatally injured drivers testing positive for alcohol from 2006-2010 is 44.4%. In the 2011-2012 period, 66.7% of fatally injured drivers tested positive for alcohol, a 50.2% increase from the baseline period.

Table 12-7
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
Prince Edward Island, 1990-2012

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	16	9	(56.3)	7	(43.8)
1991	16	11	(68.8)	5	(31.3)
1992	8	4	(50.0)	4	(50.0)
1993	11	4	(36.4)	7	(63.6)
1994	11	7	(63.6)	4	(36.4)
1995	12	5	(41.7)	7	(58.3)
1996	15	11	(73.3)	4	(26.7)
1997	11	7	(63.6)	4	(36.4)
1998	11	10	(90.9)	1	(9.1)
1999	10	7	(70.0)	3	(30.0)
2000	12	8	(66.7)	4	(33.3)
2001	6	4	(66.7)	2	(33.3)
2002	10	6	(60.0)	4	(40.0)
2003	9	5	(55.6)	4	(44.4)
2004	16	9	(56.3)	7	(43.8)
2005	13	8	(61.5)	5	(38.5)
2006	13	10	(76.9)	3	(23.1)
2007	4	1	(25.0)	3	(75.0)
2008	12	4	(33.3)	8	(66.7)
2009	10	5	(50.0)	5	(50.0)
2010	6	5	(83.3)	1	(16.7)
2011	11	4	(36.4)	7	(63.6)
2012	6	1	(16.7)	5	(83.3)
2006-2010 baseline	9	5	(55.6)	4	(44.4)
2011-2012 period	9	3	(33.3)	6	(66.7)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol

Figure 12-4
Percent of Fatally Injured Drivers* Positive for Alcohol: Prince Edward Island, 1990-2012



12.5.3 Drivers in serious injury crashes: Table 12-8 and Figure 12-5 show information on drivers involved in alcohol-related serious injury crashes. As shown in Table 12-8, during the baseline period (2006-2010), an

average of 23.4% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 26.5% in the 2011-2012 period, a 13.2% increase in the problem.

Table 12-8

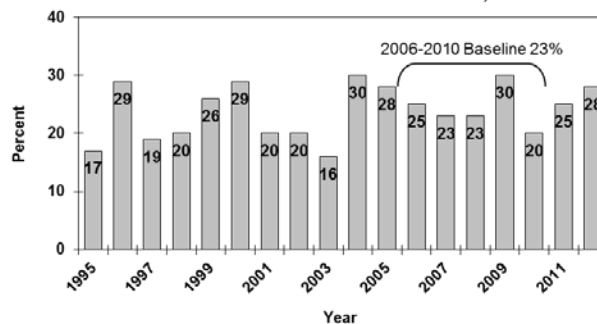
Number and Percent of All Drivers in Serious Injury Crashes* that Involved Alcohol: Prince Edward Island, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	182	30	(16.5)
1996	75	22	(29.3)
1997	111	21	(18.9)
1998	112	22	(19.6)
1999	133	34	(25.6)
2000	115	33	(28.7)
2001	94	19	(20.2)
2002	84	17	(20.2)
2003	116	19	(16.4)
2004	97	29	(29.9)
2005	69	19	(27.5)
2006	81	20	(24.7)
2007	75	17	(22.7)
2008	39	9	(23.1)
2009	61	18	(29.5)
2010	66	13	(19.7)
2011	67	17	(25.4)
2012	68	19	(27.9)
2006-2010 baseline	64	15	(23.4)
2011-2012 period	68	18	(26.5)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 12-5

Percent of All Drivers in Serious Injury Crashes that Involved Alcohol*: Prince Edward Island, 1995-2012



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 12-9 and Figure 12-6 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 12.3 and in Table 12-8 and Figure 12-5 above because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has fluctuated over this 18-year period. Between 1995 and 1996 the percentage of drivers in serious injury crashes that involved alcohol rose from 15.1% to 29.7%. Since then, the incidence fluctuated until 2003, rose to 29.3% in 2004, fluctuated until 2009 (31.0%), decreased to 19.7% in 2010, and rose again to 25.8% in 2012.

As shown Table 12-9, in the baseline period (2006-2010) an average of 23.0% of drivers in serious injury crashes were in an alcohol-involved crash. In the 2011-2012 period, the incidence of drivers in alcohol-involved crashes rose to 25.8%, a 12.2% increase.

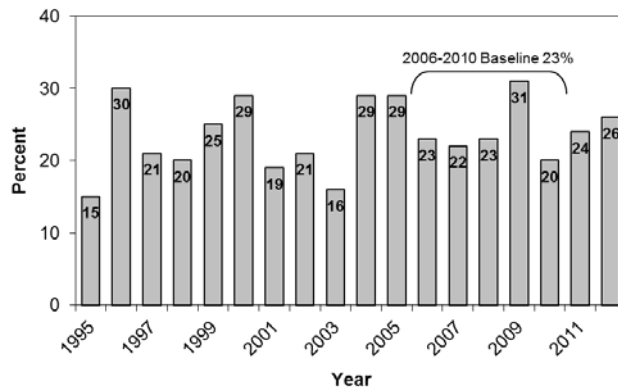
Table 12-9
Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: Prince Edward Island, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	172	26	(15.1)
1996	74	22	(29.7)
1997	102	21	(20.6)
1998	108	22	(20.4)
1999	130	33	(25.4)
2000	110	32	(29.1)
2001	83	16	(19.3)
2002	80	17	(21.3)
2003	111	18	(16.2)
2004	92	27	(29.3)
2005	66	19	(28.8)
2006	77	18	(23.4)
2007	68	15	(22.1)
2008	35	8	(22.9)
2009	58	18	(31.0)
2010	66	13	(19.7)
2011	62	15	(24.2)
2012	62	16	(25.8)
2006-2010 baseline	61	14	(23.0)
2011-2012 period	62	16	(25.8)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 12-6
Percent of Drivers of Highway Vehicles in Serious Injury Crashes
that Involved Alcohol: Prince Edward Island, 1995-2012



12.5.4 Drug use among fatally injured drivers: Table 12-10 and Figure 12-7 show data on drug use among fatally injured drivers over a 13-year period (2000-2012). Similar to Table 12-6, these results are based on fatally injured drivers of highway vehicles who died less than six hours after the crash (see Section 2.2.5).

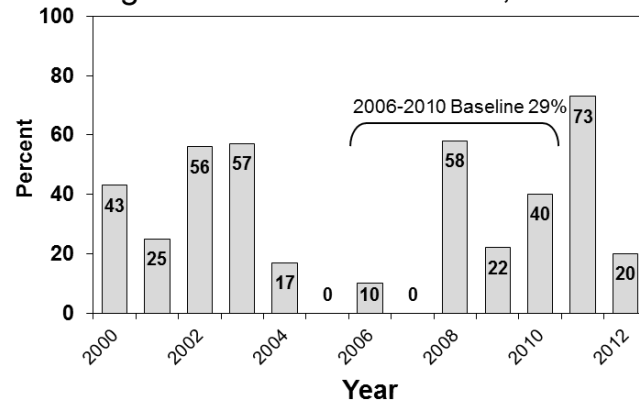
As can be seen at the bottom of Table 12-10, the percentage of fatally injured drivers testing positive for drugs from 2006-2010, the baseline period, is 28.6%. In the 2011-2012 period, 62.5% of fatally injured drivers tested positive for drugs, a 118.5% increase from the baseline period.

Table 12-10
Drug Use Among Fatally Injured Drivers* of Highway Vehicles:
Prince Edward Island, 2000-2012

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative	(% Tested)	Positive	(% Tested)
2000	10	7	70.0	4	57.1	3	42.9
2001	5	4	80.0	3	75.0	1	25.0
2002	10	9	90.0	4	44.4	5	55.6
2003	7	7	100.0	3	42.9	4	57.1
2004	15	12	80.0	10	83.3	2	16.7
2005	8	7	87.5	7	100.0	0	0.0
2006	11	10	90.9	9	90.0	1	10.0
2007	3	3	100.0	3	100.0	0	0.0
2008	12	12	100.0	5	41.7	7	58.3
2009	10	9	90.0	7	77.8	2	22.2
2010	6	5	83.3	3	60.0	2	40.0
2011	11	11	100.0	3	27.3	8	72.7
2012	5	5	100.0	4	80.0	1	20.0
2006-2010 baseline	8	7	87.5	5	71.4	2	28.6
2011-2012 period	8	8	100.0	3	37.5	5	62.5

* dying in less than six hours.

Figure 12-7
Percent of Fatally Injured Drivers Positive
for Drugs: Prince Edward Island, 2000-2012



13.0 NEWFOUNDLAND AND LABRADOR

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in Newfoundland and Labrador during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 13.1);
- > alcohol use among fatally injured drivers (Section 13.2);
- > drivers involved in alcohol-related serious injury crashes (Section 13.3);
- > drug use among fatally injured drivers (Section 13.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 13.5).

13.1 Deaths in alcohol-related crashes

Table 13-1 presents information on people who died in alcohol-related crashes in Newfoundland and Labrador during 2012 for persons dying within 12 months of the collision (one calendar year) and for persons dying within 30 days of the collision. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. In each section, the first column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.*

For example, within the first section, it can be seen that among persons dying within 12 months of the collision, nine people aged 46-55 were killed in motor vehicle crashes in Newfoundland and Labrador during 2012. And, in eight cases (88.9%) it was possible to determine if alcohol was a factor in the crash. The next column shows the number of people killed in crashes that were known to be alcohol-involved. There were three people aged 46-55 who died in alcohol-related crashes in Newfoundland and Labrador during 2012. The next column expresses this as a percentage – i.e., 37.5% of the 46-55 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 46-55 year olds represent 23.1% of all the people killed in alcohol-related crashes in Newfoundland and Labrador during 2012.

An examination of the section for persons dying within 30 days of the collision shows that nine persons aged 46-55 died in motor vehicle crashes. In eight of these cases (88.9%), it was possible to determine if alcohol was a factor in the crash. Among these persons, three (37.5%) were alcohol-related deaths. And 46-55 year olds accounted for 23.1% of people dying in alcohol-related crashes.

The totals at the bottom of the table provide a summary. As can be seen, 41 persons died within 12 months of a motor vehicle crash in Newfoundland and Labrador during 2012. In 36 (87.8%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 13 (36.1%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (41 x .361) it can be estimated that *in Newfoundland and Labrador during 2012, 15 persons died in alcohol-related crashes within 12 months of the collision.*

Among the 41 persons dying within 30 days of the collision, it was possible to determine if alcohol was a factor in 87.8% of the cases. Of these known cases, 13 (36.1%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (41 x .361) it can be estimated that *in Newfoundland and Labrador during 2012, 15 persons died in alcohol-related crashes within 30 days of the collision.*

13.1.1 Victim age. Persons aged 26-35 and 36-45 have been regrouped (26-45 age group) to ensure that individuals cannot be identified. Of all the people who died in alcohol-related crashes within 12 months of the crash, 46.2% (see last column of the first section) were aged 26-45; 23.1% were aged 46-55; and 15.4% were aged 20-25 and over 55.

Table 13-1
Deaths in Alcohol-Related Crashes: Newfoundland and Labrador, 2012

Deaths in Alcohol-Related Crashes: Newfoundland and Labrador, 2012												
Category of Victim	Persons Dying Within 12 Months of Collision						Persons Dying Within 30 Days of Collision					
	No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)			No. of Deaths	Alcohol Use Known		Alcohol-Related Deaths (ARDs)		
		No.	% of total	No.	% of known	% of all		No.	% of total	No.	% of known	% of all
<u>Age Group</u>												
<16	1	1	100.0	0	0.0	0.0	1	1	100.0	0	0.0	0.0
16-19	3	1	33.3	0	0.0	0.0	3	1	33.3	0	0.0	0.0
20-25	5	5	100.0	2	40.0	15.4	5	5	100.0	2	40.0	15.4
26-45*	9	9	100.0	6	66.7	46.2	9	9	100.0	6	66.7	46.2
46-55	9	8	88.9	3	37.5	23.1	9	8	88.9	3	37.5	23.1
>55	14	12	85.7	2	16.7	15.4	14	12	85.7	2	16.7	15.4
<u>Gender</u>												
Male	32	29	90.6	11	37.9	84.6	32	29	90.6	11	37.9	84.6
Female	9	7	77.8	2	28.6	15.4	9	7	77.8	2	28.6	15.4
<u>Victim Type</u>												
Driver/ Operator	34	32	94.1	12	37.5	92.3	34	32	94.1	12	37.5	92.3
Passenger	3	2	66.7	0	0.0	0.0	3	2	66.7	0	0.0	0.0
Pedestrian	4	2	50.0	1	50.0	7.7	4	2	50.0	1	50.0	7.7
<u>Vehicle Occupied</u>												
Automobiles	18	16	88.9	3	18.8	23.1	18	16	88.9	3	18.8	23.1
Trucks/Vans	5	5	100.0	3	60.0	23.1	5	5	100.0	3	60.0	23.1
Motorcycles	4	4	100.0	0	0.0	0.0	4	4	100.0	0	0.0	0.0
Other Hwy. Vehicles	1	0	0.0	0	0.0	0.0	1	0	0.0	0	0.0	0.0
Off-Road Vehicles	9	9	100.0	6	66.7	46.2	9	9	100.0	6	66.7	46.2
(Pedestrians)	4	2	50.0	1	50.0	7.7	4	2	50.0	1	50.0	7.7
<u>Collision Location</u>												
Public Road	36	32	88.9	10	31.3	76.9	36	32	88.9	10	31.3	76.9
Off-Road	5	4	80.0	3	75.0	23.1	5	4	80.0	3	75.0	23.1
TOTAL	41	36	87.8	13	36.1	100.0	41	36	87.8	13	36.1	100.0

* Persons in two age groups have been aggregated to ensure that an individual will not be identified.

The highest incidence of alcohol involvement occurred in the crashes in which a person aged 26-45 died (66.7%). The lowest incidence of alcohol involvement was found among the youngest fatalities – 0.0% of persons under age 16 and 16-19 died in crashes involving alcohol.

13.1.2 Gender. Of all the people who died in alcohol-related crashes within 12 months of the collision, 84.6% were males. The incidence of alcohol in crashes in which a male died (37.9%) was greater than the incidence of alcohol in crashes in which a female died (28.6%).

13.1.3 Victim type. Of all the people who died in alcohol-related crashes within 12 months of the collision, 92.3% were drivers/operators of a vehicle and 7.7% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (50.0%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 37.5% of the crashes in which a driver/operator died. None of the fatally injured passengers died in an alcohol-related crash.

13.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes within 12 months of the collision, 46.2% were off-road vehicle occupants; and 23.1% were automobile occupants and truck/van occupants.

Within each of these vehicle types, the incidence of alcohol involvement in which an off-road vehicle occupant died (66.7%) was greater than the incidence of alcohol in crashes in which a truck/van occupant died (60.0%). Among automobile occupants, 18.8% died in an alcohol-related collision.

13.1.5 Collision location. Of all the people who died in alcohol-related crashes within 12 months of the collision, 76.9% died in a collision which occurred on a public road and 23.1% died in an off-road collision. However, the incidence of alcohol involvement in which a victim died in an alcohol-related crash was greater for those dying in off-road collisions (75.0%) than it was for persons dying in a collision which occurred on a public road (31.3%).

13.2 Alcohol in fatally injured drivers

This section presents information on the presence of alcohol, exclusively among drivers fatally injured within 12 months of the collision in Newfoundland and Labrador during 2012. Table 13-2 shows the information by age group, gender, vehicle type, collision type (single vs. multiple), and duration between crash time (within 12 months of the collision vs. within 30 days of the collision).

The first column in the table shows the number of drivers killed. The next columns show the number and percent of these victims who were tested for alcohol. The remaining columns provide information on the results of the alcohol tests – the first three of these present results for drivers who showed any evidence of alcohol; the last three columns present information on drivers who had BACs over the statutory limit of 80 mg%.

To illustrate, among drivers aged 46-55 there were six drivers killed during 2012; five of these fatally injured drivers (83.3%) were tested for alcohol. Of those who were tested, one (20.0%) was positive for alcohol. This means that fatally injured drinking drivers aged 46-55 accounted for 14.3% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that one of the five (20.0%) fatally injured drivers aged 46-55 who were tested for alcohol had BACs in excess of 80 mg%. This means that the driver who was positive for alcohol had a BAC in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, drivers aged 46-45 accounted for 16.7% of all the drivers with BACs over the legal limit.

Table 13-2
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Newfoundland and Labrador, 2012

Newfoundland and Labrador, 2012

Category of Driver	No. of Drivers	Drivers Tested		Positive BAC			BAC >80 mg%		
		No.	% of total	No.	% of tested	% of all drivers with +BAC	No.	% of tested	% of all drivers with BAC >80 mg%
<u>Age Group</u>									
16-19	2	2	100.0	1	50.0	14.3	1	50.0	16.7
20-25	4	3	75.0	1	33.3	14.3	1	33.3	16.7
26-45*	5	5	100.0	2	40.0	28.6	1	20.0	16.7
46-55	6	5	83.3	1	20.0	14.3	1	20.0	16.7
>55	8	8	100.0	2	25.0	28.6	2	25.0	33.3
<u>Gender</u>									
Male	21	19	90.5	6	31.6	85.7	5	26.3	83.3
Female	4	4	100.0	1	25.0	14.3	1	25.0	16.7
<u>Vehicle Type</u>									
Automobiles	16	15	93.8	4	26.7	57.1	4	26.7	66.7
Truck/Van	5	4	80.0	3	75.0	42.9	2	50.0	33.3
Motorcycles	4	4	100.0	0	0.0	0.0	0	0.0	0.0
<u>Collision Type</u>									
Single vehicle	14	13	92.9	5	38.5	71.4	4	30.8	66.7
Multiple vehicle	11	10	90.9	2	20.0	28.6	2	20.0	33.3
<u>Duration Between Crash and Death Time</u>									
Within 30 Days	25	23	92.0	7	30.4	100.0	6	26.1	100.0
> 30 Days	0	0	0.0	0	0.0	0.0	0	0.0	0.0
TOTAL	25	23	92.0	7	30.4	100.0	6	26.1	100.0

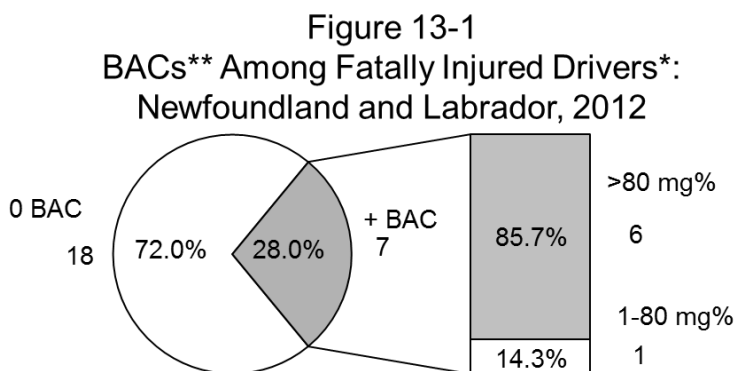
* Drivers in two age groups have been aggregated to ensure that an individual will not be identified.

The main findings are shown by the totals at the bottom of the table. Newfoundland and Labrador had a very high testing rate in 2012, with 92.0% of fatally injured drivers being tested for alcohol use.

In Newfoundland and Labrador, 30.4% had been drinking and six out of seven (85.7%) fatally injured drinking drivers had BACs over 80 mg%. Although not shown in the table, more refined analyses by different BAC categories show that among tested drivers:

- > 69.6% had BACs of zero mg%;
- > 0.0% had BACs from 1-49 mg%;
- > 4.3% had BACs from 50-80 mg%;
- > 8.7% had BACs from 81 to 160 mg%; and,
- > 17.4% had BACs over 160 mg%.

The BAC distribution for fatally injured drivers is shown in Figure 13-1. In this figure seven of 25 (28.0%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, six (85.7%) have BACs over 80 mg%.



* excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles
 ** numbers are estimates based on the BAC distribution of drivers tested for alcohol

13.2.1 Age differences. Drivers aged 26-35 and 36-45 have been regrouped (26-45 age group) to ensure that individuals cannot be identified. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 28.6% were aged 26-45 and over 55; and 16.7% were aged 16-19, 20-25 and 46-55. Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 33.3% were over 55; and 16.7% were aged 16-19, 20-25, 26-45, and 46-55.

When comparing the incidence of drinking and driving among fatally injured drivers by age group, fatally injured drivers aged 16-19 were the most likely to have been drinking (50.0%). By contrast, 20.0% of fatally injured drivers aged 46-55 had been drinking.

13.2.2 Gender differences. Males dominate the picture – they account for 85.7% of the fatally injured drivers who had been drinking and 83.3% of those who were legally impaired.

Males dominate the picture largely because they account for most of the drivers who are killed (21 of the 25 fatalities or 84.0% are males). Fatally injured male drivers were more likely to have been drinking than female drivers (31.6% and 25.0%, respectively). And, 83.3% of male and 100.0% of female drivers who were drinking had BACs over the legal limit.

13.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 57.1% were automobile drivers and 42.9% were truck/van drivers. Among fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 66.7% were automobile drivers and 33.3% were truck/van drivers.

Within each of the vehicle types, 75.0% of fatally injured truck/van drivers and 26.7% of automobile drivers were found to have been drinking. None of the fatally injured motorcyclists had been drinking.

13.2.4 Collision differences. Slightly more than half of the drivers killed (14 of the 25) were involved in single-vehicle collisions yet these crashes accounted for 71.4% of drivers who had been drinking and 66.7% of those who were legally impaired.

The reason for this apparent disparity is because alcohol is usually overrepresented in single-vehicle crashes. Two-fifths of the drivers involved in single-vehicle crashes (38.5%) were positive for alcohol, compared to 20.0% of those involved in multiple-vehicle collisions.

13.2.5 Duration between crash and death time. Given that all of the fatally injured drivers died within 30 days of the collision, a comparison of alcohol use among drivers based on differences in the duration between crash time and death time is not applicable.

13.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in Newfoundland and Labrador. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 13-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 174 drivers were involved in crashes in which someone was seriously injured, and among these 18.4% were alcohol-related crashes.

13.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 25.0% were aged 36-45, and 21.9% were over 55. Drivers under 16 accounted for 0.0% of those involved in alcohol-related serious injury crashes.

Almost one-third of the drivers aged 36-45 were involved in alcohol-related serious injury crashes (29.6%). The lowest incidence of involvement in alcohol-related crashes was found for those aged under 16 and over 55 (0.0% and 15.6%, respectively).

13.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 78.1% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (20.7% and 13.2%, respectively).

13.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 56.3% were automobile drivers; 18.8% were motorcyclists; 9.4% were truck/van drivers; and 6.3% were off-road vehicle drivers and drivers of other highway vehicles.

The highest incidence of involvement in alcohol-related serious injury crashes was found for drivers of off-road vehicles and other highway vehicles (20.0%), compared to 19.4% for motorcyclists, 18.9% for automobile drivers; and 16.7% for truck/van drivers.

13.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 100.0% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes (37.6%) compared to 0.0% for drivers involved in multiple-vehicle crashes.

Table 13-3
Drivers in Alcohol-Related Serious Injury Crashes:
Newfoundland and Labrador, 2012

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	1	0	0.0	0.0
16-19	18	3	16.7	9.4
20-25	28	6	21.4	18.8
26-35	26	4	15.4	12.5
36-45	27	8	29.6	25.0
46-55	29	4	13.8	12.5
>55	45	7	15.6	21.9
<u>Gender</u>				
Male	121	25	20.7	78.1
Female	53	7	13.2	21.9
<u>Vehicle Type</u>				
Auto	95	18	18.9	56.3
Truck/Van	18	3	16.7	9.4
Motorcycle	31	6	19.4	18.8
Other Hwy. Vehicle	10	2	20.0	6.3
Off-Road	10	2	20.0	6.3
Unknown	10	1	10.0	3.1
<u>Collision Type</u>				
Single-Vehicle	85	32	37.6	100.0
Multiple-Vehicle	89	0	0.0	0.0
TOTAL	174	32	18.4	100.0

13.4 Drug use among fatally injured drivers

This section presents information on the presence of drugs, exclusively among drivers fatally injured in Newfoundland and Labrador during 2012. Table 13-4 shows the prevalence of drug use among fatally injured drivers of highway vehicles as well as the number of drivers who tested positive for various categories of drugs.

As can be seen, Newfoundland and Labrador had a low testing rate in 2012, with 48.0% of fatally injured drivers being tested for drug use.

Among fatally injured tested drivers, six out of 12 (50.0%) were positive for drugs. The most common categories of drugs found within drivers testing positive for drug use were cannabis (50.0%), CNS depressants (33.3%), CNS stimulants and hallucinogens (16.7% each).

Table 13-4
Drug Use Among Fatally Injured Drivers of Highway
Vehicles: Newfoundland and Labrador, 2012

Prevalence of Drug Use				
Number of Drivers	Drivers Tested		Positive for Drugs	
	Number	% of total	Number	% of tested
25	12	(48.0)	6	(50.0)

Categories of Drugs Found Among Drivers Testing Positive		
Drug Category	Positive for Drug Type	
	Number of Drivers	% of drivers testing positive*
Cannabis	3	(50.0)
CNS Depressants	2	(33.3)
CNS Stimulants	1	(16.7)
Hallucinogens	1	(16.7)
Narcotic Analgesics	0	(0.0)
Dissociative Anesthetics	0	(0.0)
Inhalants	0	(0.0)

* Percentages will not add up to 100% due to multiple drug types found in blood samples of some drivers.

13.5 Trends in alcohol and drug-impaired driving

Sections 13.1 through 13.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol (within 12 months and 30 days of the collision); (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 13.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

13.5.1 Deaths in alcohol-related crashes: 1995-2012. Table 13-5 and Figure 13-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 13.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

As shown in the table and the figure, the number of deaths in crashes that involved a drinking driver was 10 in 1995, decreased to four in 2000, peaked at 21 in 2008, and settled at eight in 2012. Between 1995 and 2000, the percentage of alcohol-related fatalities generally decreased from 35.7% to a low of 8.9%, peaked at 58.3% in 2008, decreased to 16.7% in 2009, and reached 25.8% in 2012.

As shown at the bottom of the table, during the 2006-2010 baseline period there was an average of 13 fatalities involving a drinking driver and they accounted for 38.2% of all fatalities. This means that the percent of fatalities involving a drinking driver decreased by 8.1% from 38.2% in the baseline period (2006-

2010) to 35.1% in the 2011-2012 period. And, in terms of the number of persons killed in crashes involving a drinking driver, there has been no change from an average of 13 in the baseline period (2006-2010) to 13 in the 2011-2012 period.

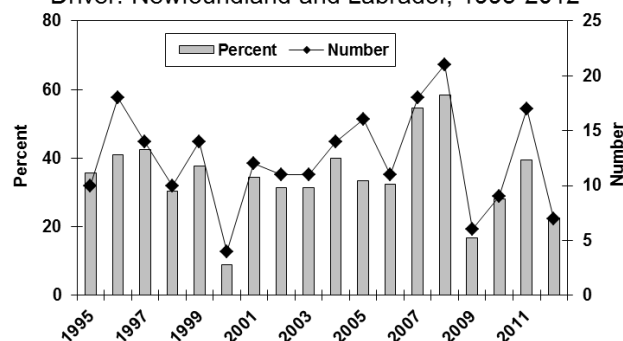
Table 13-5
Number* and Percent of Motor Vehicle Deaths Involving a Drinking Driver: Newfoundland and Labrador, 1995-2012**

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths Number	% of total	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	28	10	35.7	27	10	37.0
1996	44	18	40.9	43	17	39.5
1997	33	14	42.4	32	14	43.8
1998	33	10	30.3	33	10	30.3
1999	37	14	37.8	37	14	37.8
2000	45	4	8.9	45	4	8.9
2001	35	12	34.3	35	12	34.3
2002	35	11	31.4	35	11	31.4
2003	35	11	31.4	35	11	31.4
2004	35	14	40.0	35	14	40.0
2005	48	16	33.3	45	16	35.6
2006	34	11	32.4	34	11	32.4
2007	33	18	54.5	33	18	54.5
2008	36	21	58.3	36	21	58.3
2009	36	6	16.7	32	6	18.8
2010	32	9	28.1	32	9	28.1
2011	43	17	39.5	43	17	39.5
2012	31	8	25.8	31	8	25.8
2006-2010 baseline	34	13	38.2	33	13	39.4
2011-2012 period	37	13	35.1	37	13	35.1

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.

Figure 13-2
Number and Percent of Deaths Involving a Drinking Driver: Newfoundland and Labrador, 1995-2012



13.5.2 Alcohol use among fatally injured drivers: Data on alcohol use among fatally injured drivers over the 26-year period from 1987-2012 are shown in Table 13-6. Trends are illustrated in Figure 13-3 which shows

changes in the percent of fatally injured drivers who: (1) showed no evidence of alcohol (represented by the white area); (2) had BACs below the legal limit (shown by the light grey area); and (3) had BACs over the legal limit (the dark grey area). The data reported here are restricted to drivers who died in less than six hours after the crash (see Section 2.2.2).

As can be seen, the percentage of fatally injured drivers with BACs over the legal limit generally decreased from a peak in 1993 (56.3%), to a low in 2000 (10.5%), generally rose until 2008 (47.6%), and fluctuated until 2012 (27.3%). In 1995, 60.0% percent of fatally injured drivers had zero BACs. The percentage fell to a low of 13.3% in 2007, peaked in 2009 (85.7%), and fluctuated until 2012 (68.2%). The percentage of fatally injured drivers with BACs from 1-80 mg% was 0.0% in 1987, peaked in 2007 (40.0%), decreased to 0.0% from 2009 until 2011, and rose to 4.5% in 2012.

When compared to the 2006-2010 baseline period, the percentage of fatally injured drivers with zero BACs in the 2011-2012 period increased by 32.9% (from 55.6% to 73.9%). Among drivers with BACs from 1-80 mg%, there was a 61.3% decrease (from 11.1% to 4.3%). And among drivers with BACs over 80 mg%, there was a 34.8% decrease (from 33.3% to 21.7%).

Table 13-6
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles:
Newfoundland and Labrador, 1987-2012

Year	Number of Drivers*	Drivers Tested		Drivers Grouped by BAC (mg%)					
		No.	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	15	15	100.0	9	60.0	0	0.0	6	40.0
1988	20	17	85.0	7	41.2	3	17.6	7	41.2
1989	30	25	83.3	13	52.0	1	4.0	11	44.0
1990	24	20	83.3	9	45.0	5	25.0	6	30.0
1991	24	22	91.7	9	40.9	3	13.6	10	45.5
1992	18	13	72.2	5	38.5	2	15.4	6	46.2
1993	21	16	76.2	5	31.3	2	12.5	9	56.3
1994	12	10	83.3	5	50.0	0	0.0	5	50.0
1995	10	10	100.0	7	70.0	0	0.0	3	30.0
1996	18	13	72.2	6	46.2	1	7.7	6	46.2
1997	17	17	100.0	8	47.1	3	17.6	6	35.3
1998	19	17	89.5	10	58.8	2	11.8	5	29.4
1999	18	16	88.9	7	43.8	1	6.3	8	50.0
2000	21	19	90.5	16	84.2	1	5.3	2	10.5
2001	15	14	93.3	7	50.0	3	21.4	4	28.6
2002	18	18	100.0	12	66.7	2	11.1	4	22.2
2003	18	18	100.0	11	61.1	3	16.7	4	22.2
2004	16	14	87.5	8	57.1	1	7.1	5	35.7
2005	16	16	100.0	7	43.8	4	25.0	5	31.3
2006	21	19	90.5	13	68.4	0	0.0	6	31.6
2007	15	15	100.0	2	13.3	6	40.0	7	46.7
2008	21	21	100.0	5	23.8	6	28.6	10	47.6
2009	21	21	100.0	18	85.7	0	0.0	3	14.3
2010	18	18	100.0	12	66.7	0	0.0	6	33.3
2011	25	24	96.0	20	83.3	0	0.0	4	16.7
2012	23	22	95.7	15	68.2	1	4.5	6	27.3
2006-2010 baseline	19	18	(94.7)	10	(55.6)	2	(11.1)	6	(33.3)
2011-2012 period	24	23	(95.8)	17	(73.9)	1	(4.3)	5	(21.7)

* dying in less than six hours.

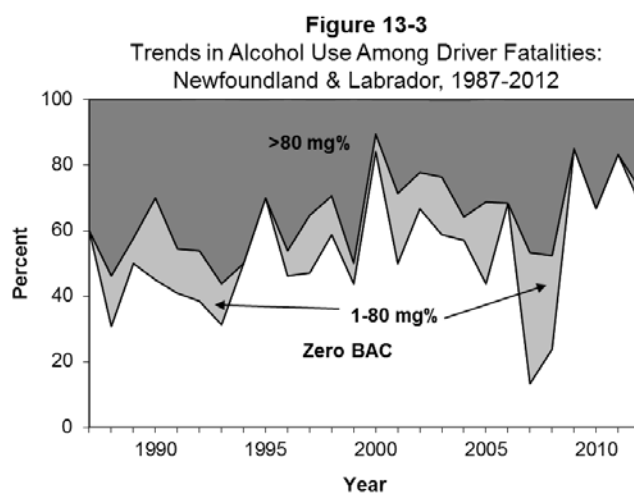


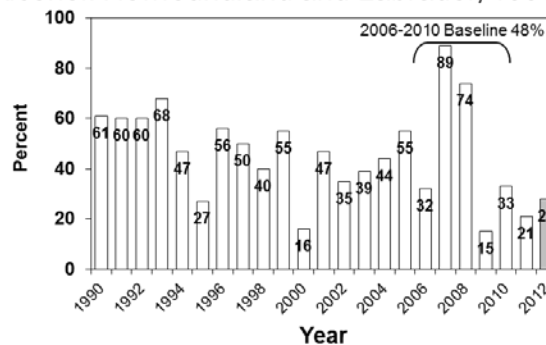
Table 13-7 and Figure 13-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2012. These results also differ from those reported above for several reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see Figure 13-1). Second, estimates are based on all fatally injured drivers, not just those who died in less than six hours from the crash. Third, drivers are grouped in only two BAC categories: zero and positive. As can be seen in Table 13-7, the baseline percentage of fatally injured drivers testing positive for alcohol from 2006-2010 is 47.6%. From 2011 to 2012, an average of 25.9% of fatally injured drivers tested positive for alcohol, a 45.6% decrease from the baseline period.

Table 13-7
Alcohol Use Among Fatally Injured Drivers of Highway Vehicles*:
Newfoundland and Labrador, 1990-2012

Year	Number of Drivers	Drivers Grouped by BAC (mg%)			
		Zero	(% Tested)	Positive	(% Tested)
1990	28	11	(39.3)	17	(60.7)
1991	25	10	(40.0)	15	(60.0)
1992	20	8	(40.0)	12	(60.0)
1993	25	8	(32.0)	17	(68.0)
1994	15	8	(53.3)	7	(46.7)
1995	11	8	(72.7)	3	(27.3)
1996	18	8	(44.4)	10	(55.6)
1997	18	9	(50.0)	9	(50.0)
1998	20	12	(60.0)	8	(40.0)
1999	20	9	(45.0)	11	(55.0)
2000	25	21	(84.0)	4	(16.0)
2001	17	9	(52.9)	8	(47.1)
2002	20	13	(65.0)	7	(35.0)
2003	18	11	(61.1)	7	(38.9)
2004	16	9	(56.3)	7	(43.8)
2005	20	9	(45.0)	11	(55.0)
2006	22	15	(68.2)	7	(31.8)
2007	18	2	(11.1)	16	(88.9)
2008	23	6	(26.1)	17	(73.9)
2009	26	22	(84.6)	4	(15.4)
2010	18	12	(66.7)	6	(33.3)
2011	29	23	(79.3)	6	(20.7)
2012	25	18	(72.0)	7	(28.0)
2006-2010 baseline	21	11	(52.4)	10	(47.6)
2011-2012 period	27	20	(74.1)	7	(25.9)

* numbers are estimates based on the BAC distribution of drivers tested for alcohol.

Figure 13-4
Percent of Fatally Injured Drivers* Positive for Alcohol: Newfoundland and Labrador, 1990-2012



13.5.3 Drivers in serious injury crashes: Collision data from 2009 to 2011 for Newfoundland and Labrador were not available at the time this report was being prepared. For this reason, the serious-injury trend tables and figures in this sub-section will only report data from 1995 to 2008 and 2012 and the comparative baseline will cover the 2006-2008 period instead of 2006-2010. Table 13-8 shows information on drivers involved in alcohol-related serious injury crashes. During the baseline period (2006-2008), an average of 21.2% of drivers in serious injury crashes were in an alcohol-involved crash. Figure 13-5 rounds the annual

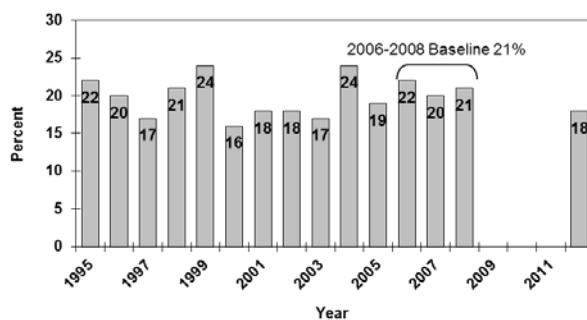
percentages into whole numbers. In 2012, the percentage of drivers involved in alcohol-involved serious-injury crashes was 18.4%. This represents a 13.2% decrease in the problem compared to the 2006-2008 baseline period.

Table 13-8
Number and Percent of All Drivers in Serious Injury Crashes* that
Involved Alcohol: Newfoundland and Labrador, 1995-2012

Year	Number of Drivers	Alcohol Related	
		Number	%
1995	299	66	(22.1)
1996	338	69	(20.4)
1997	314	54	(17.2)
1998	271	56	(20.7)
1999	279	66	(23.7)
2000	321	50	(15.6)
2001	289	53	(18.3)
2002	246	45	(18.3)
2003	268	46	(17.2)
2004	217	52	(24.0)
2005	181	35	(19.3)
2006	166	36	(21.7)
2007	201	40	(19.9)
2008	201	43	(21.4)
2009			
2010			
2011			
2012	174	32	(18.4)
2006-2008 baseline	189	40	(21.2)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 13-5
Percent of All Drivers in Serious Injury Crashes that
Involved Alcohol*: Newfoundland and Labrador, 1995-2012



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 13-9 and Figure 13-6 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 13.3 and in Table 13-8 and Figure 13-5 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has been relatively stable. The percentage of drivers in serious-injury crashes that involved alcohol decreased from 21.6% to 17.6% between 1995 and 1997, peaked at 25.2% in 1999, dropped to a low of 15.7% in 2000, generally rose to 23.3% in 2004, remained relatively stable until 2008 (21.7%), and decreased to 18.5% in 2012.

As shown in Table 13-9, in the baseline period (2006-2008), an average of 22.3% of drivers in serious injury crashes were in an alcohol-involved crash. In 2012, the incidence of drivers in alcohol-involved crashes was 18.5%, representing a 17.0% decrease.

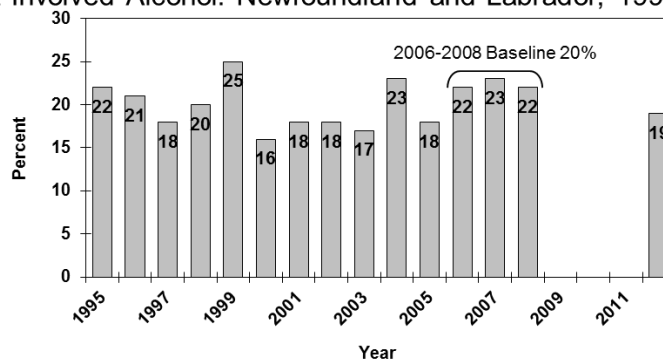
Table 13-9
Number and Percent of Drivers of Highway Vehicles in Serious Injury Crashes*
that Involved Alcohol: Newfoundland and Labrador, 1995-2012

Year	Number of Drivers	Alcohol Related	
		Number	%
1995	259	56	(21.6)
1996	296	62	(20.9)
1997	262	46	(17.6)
1998	243	48	(19.8)
1999	230	58	(25.2)
2000	249	39	(15.7)
2001	223	40	(17.9)
2002	191	34	(17.8)
2003	197	34	(17.3)
2004	163	38	(23.3)
2005	136	25	(18.4)
2006	131	29	(22.1)
2007	129	29	(22.5)
2008	129	28	(21.7)
2009			
2010			
2011			
2012	168	31	(18.5)
2006-2008 baseline	130	29	(22.3)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 13-6
Percent of Drivers of Highway Vehicles in Serious Injury Crashes
that Involved Alcohol: Newfoundland and Labrador, 1995-2012



13.5.4 Drug use among fatally injured drivers: Table 13-10 and Figure 13-7 show data on drug use among fatally injured drivers over a 13-year period (2000-2012). Similar to Table 13-6, these results are based on fatally injured drivers of highway vehicles who died less than six hours after the crash (see Section 2.2.5).

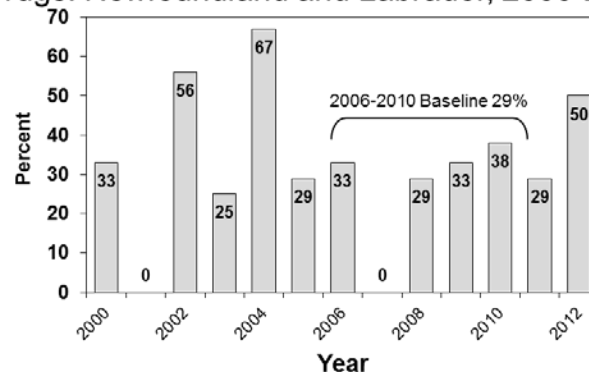
As can be seen at the bottom of Table 13-10, the percentage of fatally injured drivers testing positive for drugs from 2006-2010, the baseline period, is 28.6%. The percentage of fatally injured drivers testing positive for drugs was 28.6% in 2011 and 50.0% in 2012. From 2011 to 2012, the average percentage of fatally injured drivers testing positive for drugs was 44.4%, a 55.2% increase from the baseline period.

Table 13-10
Drug Use Among Fatally Injured Drivers* of Highway Vehicles:
Newfoundland and Labrador, 2000-2012

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Tested for Drugs			
				Negative	(% Tested)	Positive	(% Tested)
2000	21	6	28.6	4	66.7	2	33.3
2001	15	6	40.0	6	100.0	0	0.0
2002	18	9	50.0	4	44.4	5	55.6
2003	18	4	22.2	3	75.0	1	25.0
2004	16	6	37.5	2	33.3	4	66.7
2005	16	7	43.8	5	71.4	2	28.6
2006	21	9	42.9	6	66.7	3	33.3
2007	15	4	26.7	4	100.0	0	0.0
2008	21	7	33.3	5	71.4	2	28.6
2009	21	9	42.9	6	66.7	3	33.3
2010	18	8	44.4	5	62.5	3	37.5
2011	25	7	28.0	4	57.1	2	28.6
2012	23	12	52.2	6	50.0	6	50.0
2006-2010 baseline	19	7	36.8	5	71.4	2	28.6
2011-2012 period	24	9	37.5	5	55.6	4	44.4

* dying in less than six hours.

Figure 13-7
Percent of Fatally Injured Drivers Positive for
Drugs: Newfoundland and Labrador, 2000-2012



14.0 YUKON

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in the Yukon during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 14.1);
- > alcohol use among fatally injured drivers (Section 14.2);
- > drivers involved in alcohol-related serious injury crashes (Section 14.3);
- > drug use among fatally injured drivers (Section 14.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 14.5).

Detailed results are not provided in Sections 14.1, 14.2 and 14.4 because the small number of deaths in alcohol-related crashes – only one – and drivers fatally injured – only one – makes the results unreliable.

14.1 Deaths in alcohol-related crashes

A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.

During 2012, two persons died in motor vehicle crashes in the Yukon. And, in both of these cases (100.0%), it was possible to determine if alcohol was a factor in the crash. Of these cases, one (50.0%) involved alcohol.

14.2 Alcohol in fatally injured drivers

The Yukon had only one fatally injured driver in 2012. This driver was tested for alcohol and had a negative BAC.

14.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in the Yukon. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 14-1 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol are shown in the next two columns.

The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 20 drivers were involved in crashes in which someone was seriously injured, and among these 15.0% were alcohol-related crashes.

Table 14-1
Drivers in Alcohol-Related Serious Injury Crashes:
Yukon, 2012

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
16-19	2	0	0.0	0.0
20-25	2	1	50.0	33.3
26-35	2	1	50.0	33.3
36-45	2	1	50.0	33.3
46-55	2	0	0.0	0.0
>55	9	0	0.0	0.0
unknown	1	0	0.0	0.0
<u>Gender</u>				
Male	15	2	13.3	66.7
Female	4	1	25.0	33.3
unknown	1	0	0.0	0.0
<u>Vehicle Type</u>				
Auto	6	1	16.7	33.3
Truck/Van	9	2	22.2	66.7
Motorcycle	4	0	0.0	0.0
Off-Road	1	0	0.0	0.0
<u>Collision Type</u>				
Single-Vehicle	13	3	23.1	100.0
Multiple-Vehicle	7	0	0.0	0.0
TOTAL	20	3	15.0	100.0

14.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 33.3% were aged 20-25, 26-35, and 36-45.

Within each of the age groups, 50.0% of the drivers aged 20-25, 26-35 and 36-45 were involved in alcohol-related serious injury crashes. The lowest incidence of involvement in alcohol-related crashes was found for those aged 16-19, 46-55 and over 55 (0.0%).

14.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 66.7% were males. However, the incidence of involvement in alcohol-related serious injury crashes was greater for females than for males (25.0% and 13.3%, respectively).

14.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 66.7% were truck/van drivers and 33.3% were automobile drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for truck/van drivers – 22.2% of these drivers were in crashes that involved alcohol, compared to 16.7% for automobile drivers and 0.0% for motorcyclists and off-road vehicle operators.

14.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 100.0% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 23.1% of these drivers, compared to only 0.0% for drivers involved in multiple-vehicle crashes.

14.4 Drug use among fatally injured drivers

The Yukon had only one fatally injured driver in 2012. This driver was tested for drugs and had a negative result.

14.5 Trends in alcohol and drug-impaired driving

Sections 14.1 through 14.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol (within 12 months and 30 days of the collision); (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 14.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

14.5.1 Deaths in alcohol-related crashes: 1995-2012. Table 14-2 and Figure 14-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2012. These results differ slightly from those in Section 14.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not necessarily classified as alcohol-related deaths. The focus here is more restrictive, on deaths that occur in crashes involving at least one drinking driver. Second, the trend analyses focus on fatal crashes on public roadways involving principal vehicle types (where at least one of the vehicles involved is an automobile, truck/van, motorcycle or other highway vehicle). The previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

As shown in the figure, the number of deaths in crashes that involved a drinking driver increased from one to seven between 1995 and 1998, fell to zero in 2001, rose to six in 2002, decreased to one in 2004, rose to five in 2006, fluctuated until 2010, and decreased to one in 2012. The percentage of alcohol-related fatalities rose from 7.7% in 1995 to 66.7% in 1996 and 1997. Since then, the percentage of alcohol-related fatalities in the Yukon fluctuated until 2000, dropped to 0.0% in 2001, generally rose until 2005 (66.7%), fluctuated until 2009 (28.6%), peaked in 2010 (75.0%), decreased in 2011 (33.3%), and rose again in 2012 (50.0%).

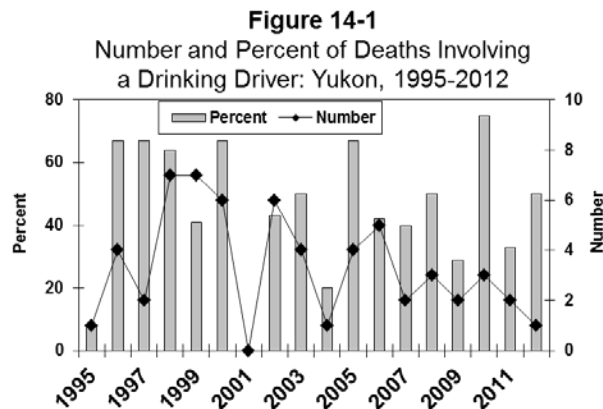
It can be seen that during the 2006-2010 baseline period that there was an average of three fatalities involving a drinking driver and they accounted for 42.9% of all fatalities. This means that the percent of fatalities involving a drinking driver increased by 16.6% from 42.9% in the baseline period (2006-2010) to 50.0% in the 2011-2012 period. In terms of the number of persons killed in crashes involving a drinking driver, there was a 33.3% decrease from an average of three in the baseline period (2006-2010) to two in the 2011-2012 period.

Table 14-2
Number* and Percent of Motor Vehicle Deaths Involving a**
Drinking Driver: Yukon, 1995-2012

Year of Death	Persons Dying Within 12 Months of Collision			Persons Dying Within 30 Days of Collision		
	Number of Deaths	Alcohol-Related Deaths Number	% of total	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	13	1	7.7	12	1	8.3
1996	6	4	66.7	6	4	66.7
1997	3	2	66.7	3	2	66.7
1998	11	7	63.6	11	7	63.6
1999	17	7	41.2	17	7	41.2
2000	9	6	66.7	9	6	66.7
2001	4	0	0.0	4	0	0.0
2002	14	6	42.9	13	6	46.2
2003	8	4	50.0	8	4	50.0
2004	5	1	20.0	5	1	20.0
2005	6	4	66.7	6	4	66.7
2006	12	5	41.7	12	5	41.7
2007	5	2	40.0	5	2	40.0
2008	6	3	50.0	6	3	50.0
2009	7	2	28.6	7	2	28.6
2010	4	3	75.0	4	3	75.0
2011	6	2	33.3	6	2	33.3
2012	2	1	50.0	2	1	50.0
2006-2010 baseline	7	3	42.9	7	3	42.9
2011-2012 period	4	2	50.0	4	2	50.0

* numbers are estimates based on the percent of deaths for which information was available to determine alcohol use.

** only on public roadways involving principal vehicle types.



14.5.2 Alcohol use among fatally injured drivers: Due to the small number of cases – e.g., one fatally injured driver in 2012 – any trends would be unreliable, and therefore, are not presented in tables and figures.

14.5.3 Drivers in serious injury crashes: In the Yukon, data are only available since 1998 to indicate the degree of injury severity for collision victims. Thus trend tables in this section include data from 2005 to 2012, as opposed to the 1995-2012 period reported for serious injury collisions in most other jurisdictions. Table 14-3 and Figure 14-2 show information on drivers involved in alcohol-related serious injury crashes.

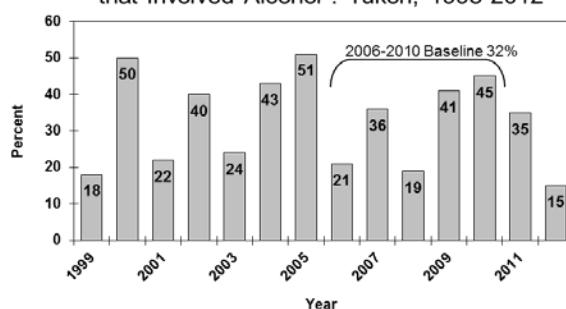
During the baseline period (2006-2010), an average of 32.1% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 26.1% in the 2011-2012 period, an 18.7% decrease in the problem.

Table 14-3
Number and Percent of All Drivers in Serious Injury Crashes*
that Involved Alcohol: Yukon, 1998-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1998	35	14	(40.0)
1999	57	10	(17.5)
2000	34	17	(50.0)
2001	36	8	(22.2)
2002	43	17	(39.5)
2003	29	7	(24.1)
2004	21	9	(42.9)
2005	41	21	(51.2)
2006	29	6	(20.7)
2007	28	10	(35.7)
2008	27	5	(18.5)
2009	27	11	(40.7)
2010	29	13	(44.8)
2011	26	9	(34.6)
2012	20	3	(15.0)
2006-2010 baseline	28	9	(32.1)
2011-2012 period	23	6	(26.1)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 14-2
Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol*: Yukon, 1998-2012



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 14-4 and Figure 14-3 also show information on drivers involved in alcohol-related injury crashes. These results differ slightly from those in Section 14.3 and in Table 14-3 and Figure 14-2 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

As can be seen the incidence of alcohol-involvement in injury crashes has fluctuated over this 15-year period. Between 1998 and 2003 the percentage of all drivers in injury crashes that involved alcohol

fluctuated, rose to 51.2% in 2005, generally decreased until 2008 (18.5%), rose to 44.0% in 2010, and decreased again to 15.8% in 2012.

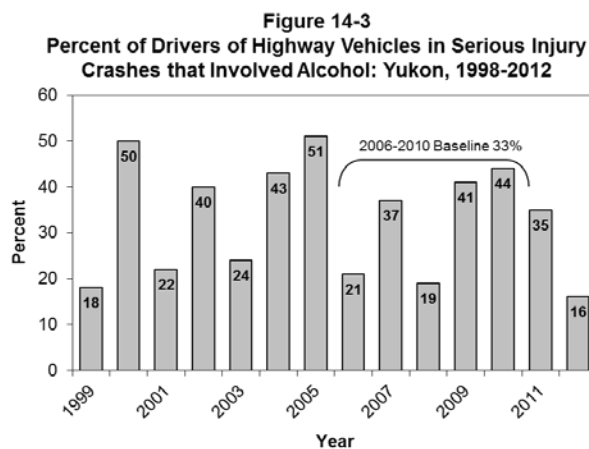
As shown in Table 14-4, in the baseline period (2006-2010), an average of 33.3% of drivers in injury crashes were in an alcohol-involved crash. In the 2011-2012 period, the incidence of drivers in alcohol-involved crashes was 26.1%, representing a 21.7% decrease.

Table 14-4
Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: Yukon, 1998-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1998	35	14	(40.0)
1999	57	10	(17.5)
2000	34	17	(50.0)
2001	36	8	(22.2)
2002	43	17	(39.5)
2003	29	7	(24.1)
2004	21	9	(42.9)
2005	41	21	(51.2)
2006	29	6	(20.7)
2007	27	10	(37.0)
2008	27	5	(18.5)
2009	27	11	(40.7)
2010	25	11	(44.0)
2011	26	9	(34.6)
2012	19	3	(15.8)
2006-2010 baseline	27	9	(33.3)
2011-2012 period	23	6	(26.1)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement



14.5.4 Fatally injured drivers: Due to the small number of cases – e.g., one fatally injured driver in 2012 – any trends would be unreliable, and therefore, are not presented in tables and figures.

15.0 NORTHWEST TERRITORIES

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in the Northwest Territories during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 15.1);
- > alcohol use among fatally injured drivers (Section 15.2);
- > drivers involved in alcohol-related serious injury crashes (Section 15.3);
- > drug use among fatally injured drivers (Section 15.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 15.5).

Detailed results are not provided in Sections 15.1, 15.2 and 15.4 because the small number of deaths – only two – and drivers fatally injured – none – makes the results unreliable.

15.1 Deaths in alcohol-related crashes

A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.

During 2012, two persons died in motor vehicle crashes in the Northwest Territories. And, in all (100.0%) of these cases, it was possible to determine if alcohol was a factor in the crash.

15.2 Alcohol use among fatally injured drivers

The Northwest Territories had no fatally injured drivers in 2012.

15.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2012 in the Northwest Territories. A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 15-1 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown, by the totals at the bottom of the table, 13 drivers were involved in crashes in which someone was seriously injured, and among these one (7.7%) was an alcohol-related crash.

Table 15-1
Drivers in Alcohol-Related Serious Injury Crashes:
Northwest Territories, 2012

Northwest Territories, 2012				
Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
<16	1	0	0.0	0.0
16-19	2	0	0.0	0.0
20-25	2	0	0.0	0.0
26-35	2	1	50.0	100.0
46-55	1	0	0.0	0.0
>55	5	0	0.0	0.0
<u>Gender</u>				
Male	9	1	11.1	100.0
Female	4	0	0.0	0.0
<u>Vehicle Type</u>				
Truck/Van	7	0	0.0	0.0
Tractor-Trailer	1	0	0.0	0.0
Off-Road	5	1	20.0	100.0
<u>Collision Type</u>				
Single-Vehicle	7	1	14.3	0.0
Multiple-Vehicle	6	0	0.0	0.0
TOTAL	13	1	7.7	100.0

15.3.1 Driver age. Among drivers aged 26-35, 50.0% were involved in an alcohol related crash. Among those under 16, 16-19, 20-25, 46-55, and over 55, none (0.0%) were involved in alcohol-related serious injury crashes.

15.3.2 Driver gender. Among male drivers, 11.1% were involved in an alcohol-related serious injury crash compared to 0.0% of female drivers.

15.3.3 Type of vehicle driven. Among off-road vehicle drivers, 20.0% were involved in serious injury crashes involving alcohol compared to 0.0% of truck/van and tractor-trailer drivers.

15.3.4 Type of collision. Among drivers involved in single-vehicle serious injury crashes, 14.3% were in a crash which involved alcohol compared to 0.0% of drivers involved in multiple-vehicle serious injury crashes.

15.4 Drug use among fatally injured drivers

The Northwest Territories had no fatally injured drivers in 2012.

15.5 Trends in alcohol and drug-impaired driving

Sections 15.1 through 15.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol (within 12 months and 30 days of the collision); (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 15.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

15.5.1 Deaths in alcohol-related crashes: 1995-2012. Due to the small number of crashes on public roadways involving principal vehicle types (e.g., two in 2012) any trends would be unreliable, and therefore are not reported.

15.5.2 Alcohol use among fatally injured drivers: Due to the small number of cases – e.g., no fatally injured drivers in 2012 – any trends would be unreliable, and therefore are not reported.

15.5.3 Drivers in serious injury crashes: Table 15-2 and Figure 15-1 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (2006-2010), an average of 43.8% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 11.1% in the 2011-2012 period, representing a 74.7% decrease.

Table 15-2

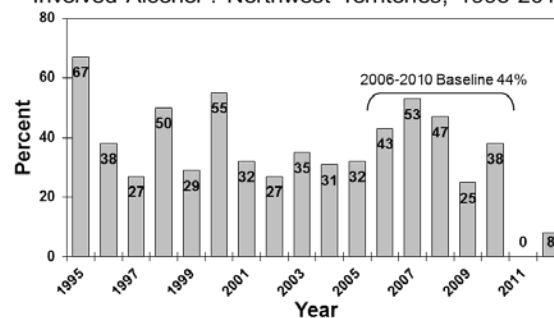
Number and Percent of All Drivers in Serious Injury Crashes* that Involved Alcohol: Northwest Territories, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	24	16	(66.7)
1996	21	8	(38.1)
1997	15	4	(26.7)
1998	22	11	(50.0)
1999	24	7	(29.2)
2000	11	6	(54.5)
2001	25	8	(32.0)
2002	22	6	(27.3)
2003	17	6	(35.3)
2004	16	5	(31.3)
2005	31	10	(32.3)
2006	21	9	(42.9)
2007	17	9	(52.9)
2008	15	7	(46.7)
2009	12	3	(25.0)
2010	16	6	(37.5)
2011	5	0	(0.0)
2012	13	1	(7.7)
2006-2010 baseline	16	7	(43.8)
2011-2012 period	9	1	(11.1)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 15-1

Percent of All Drivers in Serious Injury Crashes that Involved Alcohol*: Northwest Territories, 1995-2012



* single vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Table 15-3 and Figure 15-2 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 15.3 and in Table 15-2 and Figure 15-1 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has fluctuated over this 18-year period. Between 1995 and 1999 the percentage of all drivers in serious injury crashes that involved alcohol generally decreased. Since then, the incidence peaked at 66.7% in 2000, generally decreased to 21.4% in 2004, rose to 41.2% in 2006, remained stable until 2008 (41.7%), decreased to 20.0% in 2009, rose in 2010 (25.0%), and decreased to 0.0% in 2011 and 2012.

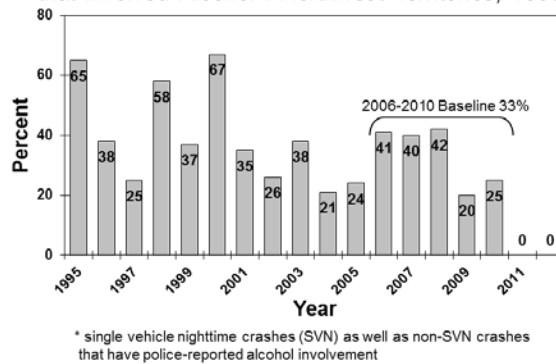
As shown in Table 15-3, in the baseline period (2006-2010), an average of 33.3% of drivers in serious injury crashes were in an alcohol-involved crash. In the 2011-2012 period, the incidence of drivers in alcohol-involved crashes declined to 0.0%.

Table 15-3
Number and Percent of Drivers of Highway Vehicles in Serious Injury Crashes* that Involved Alcohol: Northwest Territories, 1995-2012

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	20	13	(65.0)
1996	14	5	(35.7)
1997	12	3	(25.0)
1998	14	8	(57.1)
1999	19	7	(36.8)
2000	6	4	(66.7)
2001	20	7	(35.0)
2002	19	5	(26.3)
2003	16	6	(37.5)
2004	14	3	(21.4)
2005	21	5	(23.8)
2006	17	7	(41.2)
2007	10	4	(40.0)
2008	12	5	(41.7)
2009	10	2	(20.0)
2010	12	3	(25.0)
2011	3	0	(0.0)
2012	8	0	(0.0)
2006-2010 baseline	12	4	(33.3)
2011-2012 period	6	0	(0.0)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 15-2
Percent of Drivers of Highway Vehicles in Serious Injury Crashes
that Involved Alcohol*: Northwest Territories, 1995-2012



15.5.4 Drug use among fatally injured drivers: Due to the small number of cases – e.g., no fatally injured drivers in 2012 – any trends would be unreliable, and therefore are not reported.

16.0 NUNAVUT

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions as well as drug involvement in fatal motor vehicle collisions in Nunavut during 2012. It describes data on:

- > people who were killed in alcohol-related crashes (Section 16.1);
- > alcohol use among fatally injured drivers (Section 16.2);
- > drivers involved in alcohol-related serious injury crashes (Section 16.3);
- > drug use among fatally injured drivers (Section 16.4); and,
- > trends in the alcohol-crash and drug-crash problems (Section 16.5).

Detailed results are not provided in Sections 16.1, 16.2 and 16.4 because the small number of deaths – only two – and drivers fatally injured – none – makes the results unreliable.

16.1 Deaths in alcohol-related crashes

A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash.

During 2012, three persons died in motor vehicle crashes in Nunavut. And, in two of these cases (66.7%), it was possible to determine if alcohol was a factor in the crash.

16.2 Alcohol in fatally injured drivers

Nunavut had no fatally injured drivers of highway vehicles in 2012.

16.3 Drivers involved in alcohol-related serious injury crashes

This section presents information on drivers involved in alcohol-related crashes in which someone was seriously injured in 2010 in Nunavut. *At the time this report was being prepared, 2011 and 2012 collision data from Nunavut were not available. For this reason, 2010 data will be reported in this section.* A “surrogate” or “indirect” measure is used to estimate alcohol involvement because drivers in serious injury crashes are seldom tested for alcohol. A driver is identified as having been involved in an alcohol-related serious injury crash if the crash in which someone was seriously injured involved a single vehicle at night (SVN), or if, in the case of a non-SVN serious injury crash, the police reported alcohol involvement – i.e., at least one drinking driver in the crash (see Section 2.2.4).

The results are shown in Table 16-1 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first column shows the number of drivers involved in serious injury crashes. The number and percent of drivers in such crashes that involved alcohol is shown in the next two columns. The

final column expresses the number of drivers involved in alcohol-related serious injury crashes in any row as a percent of all drivers involved in alcohol-related serious injury crashes.

As shown by the totals at the bottom of the table, five drivers were involved in crashes in which someone was seriously injured, and among these 40.0% were alcohol-related crashes. Due to the small number of cases, further analysis of drivers involved in serious injury crashes should be treated with caution.

Table 16-1
Drivers in Alcohol-Related Serious Injury Crashes:
Nunavut, 2010

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
<u>Age</u>				
20-25	3	2	66.7	100.0
26-35	2	0	0.0	0.0
<u>Gender</u>				
Male	4	2	50.0	100.0
Female	1	0	0.0	0.0
<u>Vehicle Type</u>				
Truck/Van	1	0	0.0	0.0
Off-Road	4	2	50.0	100.0
<u>Collision Type</u>				
Single-Vehicle	3	2	66.7	100.0
Multiple-Vehicle	2	0	0.0	0.0
TOTAL	5	2	40.0	100.0

* These numbers are slightly underestimated since 24.4% of injuries are recorded as unspecified.

16.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 100.0% were aged 20-25.

Two-thirds (66.7%) of the drivers aged 20-25 were involved in alcohol-related serious injury crashes. The lowest incidence of involvement in alcohol-related crashes was found for those aged 26-35 (0.0%).

16.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 100.0% were males. And, the incidence of involvement in alcohol-related serious injury crashes was greater for males than for females (50.0% and 0.0%, respectively).

16.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 100.0% were off-road vehicle drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for off-road vehicle drivers – 50.0% of these drivers were in crashes that involved alcohol, compared to 0.0% for truck/van drivers.

16.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 100.0% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 66.7% of these drivers, compared to 0.0% for drivers involved in multiple-vehicle crashes.

16.4 Drug use among fatally injured drivers

Nunavut had no fatally injured drivers of highway vehicles in 2012.

16.5 Trends in alcohol and drug-impaired driving

Sections 16.1 through 16.3 examined three indicators of the alcohol-crash problem: (1) the number and percent of people who died in crashes that involved alcohol (within 12 months and 30 days of the collision); (2) the number and percent of fatally injured drivers who had been drinking; and (3) the number and percent of drivers in serious injury crashes that involved alcohol. Section 16.4 examined drug use among fatally injured drivers in 2012. This section examines changes in these four indicators over time.

16.5.1 Deaths in alcohol-related crashes: 1995-2011. Due to the small number of crashes on public roadways involving principal vehicle types (e.g., one death in 2012) any trends would be unreliable, and therefore are not reported.

16.5.2 Alcohol use among fatally injured drivers: Due to the small number of cases – e.g., no fatally injured drivers in 2012 – any trends would be unreliable, and therefore are not reported.

16.5.3 Drivers in serious injury crashes: Table 16-2 and Figure 16-1 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (2006-2010), an average of 30.0% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, 40.0% of drivers in serious injury collisions were in an alcohol-related crash.

Table 16-2
Number and Percent of All Drivers in Serious Injury Crashes*
that Involved Alcohol: Nunavut, 1995-2010

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	16	10	(62.5)
1996	10	4	(40.0)
1997	6	1	(16.7)
1998	18	8	(44.4)
1999	15	6	(40.0)
2000	22	8	(36.4)
2001	17	7	(41.2)
2002	14	3	(21.4)
2003	15	5	(33.3)
2004	15	5	(33.3)
2005	14	3	(21.4)
2006	18	4	(22.2)
2007	15	6	(40.0)
2008	6	0	(0.0)
2009	7	1	(14.3)
2010	5	2	(40.0)
2006-2010 baseline	10	3	(30.0)

* single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

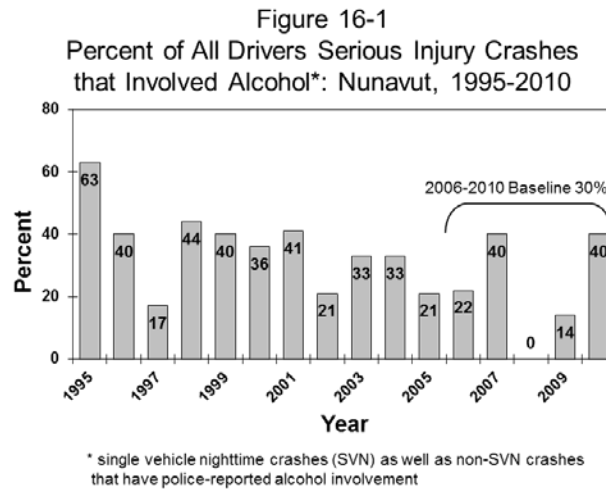


Table 16-3 and Figure 16-2 also show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 16.3 and in Table 16-2 and Figure 16-1 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

As can be seen the incidence of alcohol-involvement in serious injury crashes has fluctuated over this 16-year period. Between 1995 and 1997 the percentage of all drivers in serious injury crashes that involved alcohol decreased from 50.0% to 0.0%. Since then, the incidence peaked at 75.0% in 1998, generally decreased to 0.0% in 2005, rose to 33.3% in 2006 and 2007, and dropped again to 0.0% from 2008 to 2010.

As shown in Table 16-3, in the baseline period (2006-2010), an average of 25.0% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes was 0.0%.

Table 16-3

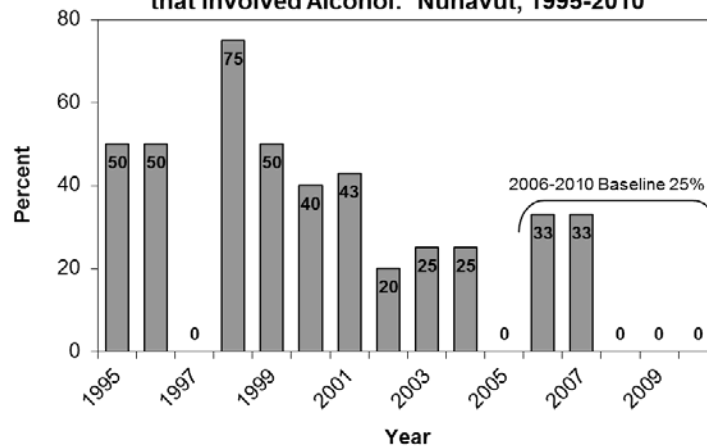
Number and Percent of Drivers* of Highway Vehicles in Serious Injury Crashes** that Involved Alcohol: Nunavut, 1995-2010

Year	Number of Drivers	Number in Alcohol-Involved Crashes	Percent
1995	6	3	(50.0)
1996	2	1	(50.0)
1997	2	0	(0.0)
1998	4	3	(75.0)
1999	2	1	(50.0)
2000	5	2	(40.0)
2001	7	3	(42.9)
2002	5	1	(20.0)
2003	4	1	(25.0)
2004	4	1	(25.0)
2005	6	0	(0.0)
2006	9	3	(33.3)
2007	3	1	(33.3)
2008	2	0	(0.0)
2009	4	0	(0.0)
2010	1	0	(0.0)
2006-2010 baseline	4	1	(25.0)

* excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

** single-vehicle nighttime crashes (SVN) as well as non-SVN crashes that have police-reported alcohol involvement

Figure 16-2
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Nunavut, 1995-2010



16.5.4 Drug use among fatally injured drivers: Due to the small number of cases – e.g., no fatally injured drivers in 2012 – any trends would be unreliable, and therefore are not reported.

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