CCMTA Road Safety Report Series

ALCOHOL-CRASH PROBLEM IN CANADA: 2010

Prepared For

Canadian Council of Motor Transport Administrators
Standing Committee on Road Safety Research and Policies

and

Transport Canada

By

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CANADIAN COUNCIL OF MOTOR TRANSPORT ADMINISTRATORS

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ABSTRACT

This report describes the magnitude and characteristics of the alcohol-crash problem in Canada during 2010 as well as trends in the problem.

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

Thus, in the report, various indicators are used to estimate the magnitude and extent of the alcohol-crash problem in Canada during 2010 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; and
- the number and percent of drivers in serious injury crashes that involved alcohol.

As well, these indicators are presented separately for each province and territory (see note on pp. 47-48).

This report also examines progress in Canada and each province/territory, in meeting the Strategy to Reduce Impaired Driving (STRID) 2010 objective, to reduce by 40% the percent of fatalities and serious injuries involving a drinking driver by 2010. The 2010 data are compared to data from the 1996-2001 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, sponsor, or jurisdictions involved in this project.

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1.0 INTRODUCTION

This report describes the magnitude and characteristics of the alcohol-crash problem in Canada during 2010 as well as trends in the problem. It includes data on alcohol in fatally injured drivers and pedestrians 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 in the blood of fatally injured drivers and pedestrians. Given a high testing rate 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. The Fatality Database is co-funded by CCMTA and Transport Canada.

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 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 drinking-driving 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*, constructed and maintained by TIRF, under a related project funded by Transport Canada and CCMTA. 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 (see note on pp. 47-48).

The focus on alcohol-related serious injury crashes underscores the fact that serious injury is too often a consequence of drinking and driving. It also recognizes that the federal/provincial/territorial *Strategy to Reduce Impaired Driving (STRID 2010)* seeks to reduce alcohol-related fatalities and serious injuries by 2010 by 40% compared to the 1996-2001 baseline period. Thus, this report includes information on both fatal and serious injury crashes to provide as comprehensive a picture as possible of the magnitude and nature of the alcohol-crash problem in Canada during 2010, changes/trends in the problem, and progress in meeting the STRID 2010 objectives.

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 used in this report.

Section 3.0 provides descriptive data on the incidence of alcohol involvement in fatal and serious injury crashes in Canada during 2010 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 in each province and territory are summarized. Trends in the problem and progress in meeting the STRID 2010 objectives are also examined. Further information on STRID 2010 is contained on the CCMTA website at: http://www.ccmta.ca/english/committees/rsrp/strid/strid.cfm

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.

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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 Transport Canada and the CCMTA. 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 and -serious injury crash problem in Canada during 2010 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; and
- the number and percent of drivers in serious injury crashes that involved alcohol.

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 2010, 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 has been primarily used as a means to assess the extent to which the federal-provincial/territorial *Strategy to Reduce Impaired Driving (STRID 2001 and now STRID 2010)* have 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 use among victims are obtained from files in coroners' and medical examiners' offices. The alcohol 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 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.

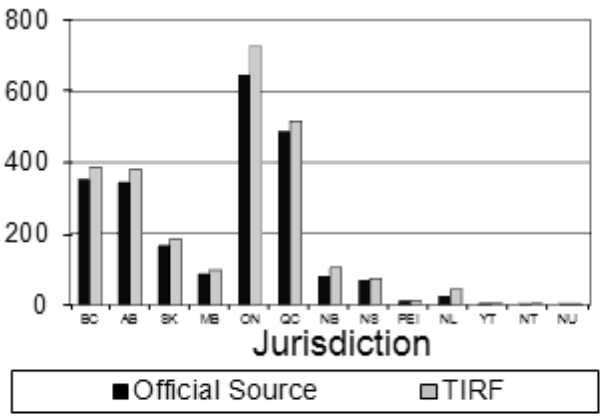
Motor vehicle fatality. A motor vehicle fatality is defined in the data capture procedures, and in this report, as any person dying within 12 months as a result of injuries sustained in a collision involving a motor vehicle. Since this definition of a motor vehicle fatality differs somewhat from those 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).

Number of fatalities: Official sources compared to the Fatality Database. The *Fatality Database* contains information on 2,541 persons fatally injured in motor vehicle collisions in Canada during 2010. This figure is higher than the number that would be obtained by adding together the fatalities officially reported in each jurisdiction in Canada. The primary reason that the *Fatality Database* has more cases than the transportation agencies is that the *Database* typically includes victims of motor vehicle crashes that occurred off-road (e.g., ATV,

snowmobile) and on private property (e.g., farm tractors, industrial motor vehicles) – cases which are not routinely contained in the files of transportation agencies. And, as mentioned previously, the definition of a motor vehicle fatality – i.e., length of time from crash to death – differs from those of the transportation agencies.

Figure 2-1 and the data table provide 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 2010. For most of the jurisdictions, the number of cases in the TIRF database is higher than that officially reported by transportation agencies.

Figure 2-1
Number of Fatalities Reported by Official Sources and in Database: 2010



	Official Source	TIRF
BC	353	387
AB	344	382
SK	166	186
MB	87	98
ON	645	728
QC	487	516
NB	80	105
NS	69	74
PEI	11	12
NL	23	43
YT	4	4
NT	3	4
NU	2	2
Total	2274	2541

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 who were struck and fatally injured by a motor vehicle.

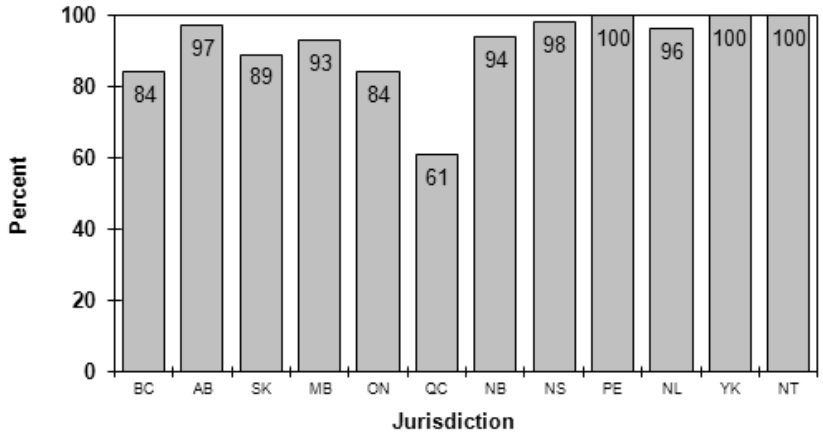
In Canada during 2010, almost 2 out of every 3 fatalities were operators of motor vehicles (63.8%); 21.6% were passengers; and 14.1% were pedestrians. From this perspective, vehicle occupants, particularly drivers, remain the major road-user group of concern for traffic safety.

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 2010, fatally injured drivers were tested most frequently (82.9%), followed by pedestrians (59.8%) and passengers (27.7%). 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 (63.1% and 29.0%, 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 72.4%).

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.

Figure 2-2
Percent of Fatally Injured Drivers
Tested for Alcohol: Canada, 2010



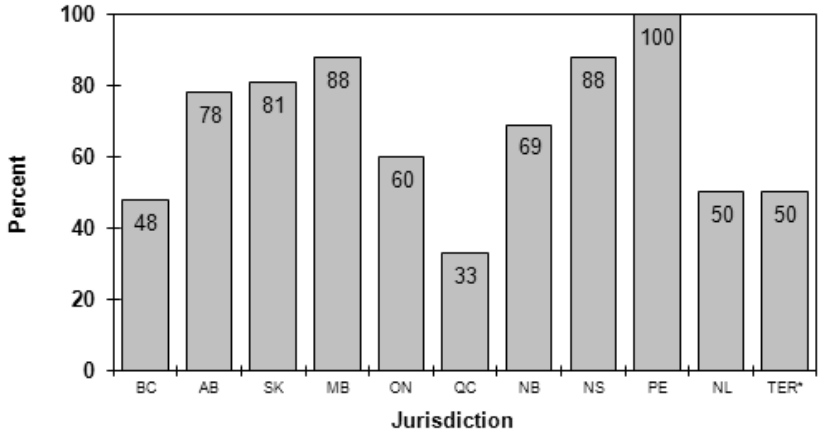
Most jurisdictions test over 80.0% of the driver fatalities. In some jurisdictions, there is clearly room for improvement – the testing rates need to be increased to enhance the reliability and utility of the information. In those jurisdictions with a high rate of testing for fatally injured drivers, 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 32.7% in Quebec to 100.0% in Prince Edward Island. The Yukon, Northwest Territories and Nunavut have been regrouped to ensure that one of the pedestrians cannot be identified.

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).

Figure 2-3
Percent of Fatally Injured Pedestrians
Tested for Alcohol: Canada, 2010



* YK, NT and NU have been regrouped to protect the identity of one of the pedestrians

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 2010 for all jurisdictions except the Yukon and British Columbia. 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 3.5.4 include data from neither the Yukon nor British Columbia. However, in the British Columbia and Yukon trends section of the report (Sections 4.4.3 and 14.4.3, respectively), data are presented on drivers involved in alcohol-related injury crashes – i.e., crashes that involve any severity of injury, from minimal to serious as opposed to other jurisdictions which report serious injury data.

In the case of Nunavut (24.4%), British Columbia (19.0%), Manitoba (15.7%), and the Northwest Territories (7.1%), some injury severities are recorded as "unspecified", so the number of drivers in serious injury crashes used in this report for these four 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 2010, 11,338 persons were seriously injured in motor vehicle crashes; 14,476 drivers were involved in these crashes. These numbers for Canada exclude Newfoundland and Labrador 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. Alberta accounts for the largest number of the drivers involved in serious injury crashes (3,778 drivers or 26.1% of the "national" total); Nunavut accounts for the lowest number of drivers in such crashes, five drivers (or less than 0.1% of all drivers).

Table 2-1
Number and Percent of Drivers Involved in Serious Injury Crashes in Each Jurisdiction: Canada, 2010

Jurisdiction	Number of Drivers	% of Total
British Columbia	2,208	15.3
Alberta	3,778	26.1
Saskatchewan	528	3.6
Manitoba	398	2.7
Ontario	3,493	24.1
Quebec	3,313	22.9
New Brunswick	325	2.2
Nova Scotia	317	2.2
Prince Edward Island	66	0.5
Newfoundland and Labrador*		
Yukon Territory	29	0.2
Northwest Territories	16	0.1
Nunavut	5	0.0
TOTAL	14,476	100.0

* excluding Newfoundland and Labrador; 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 2010 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 (48.0%); one-third were truck/van drivers (33.1%); 8.3% were motorcycle riders; 5.2% were off-road vehicle drivers (e.g., snowmobiles, dirt bikes); 3.1% 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 pople 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.

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 2010, it was possible to determine if alcohol was a factor in the crash in 91.0% 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 2010, with 82.9% of fatally injured drivers being tested for alcohol (see note on pp. 47-48).

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 – 59.8% overall, which increases to 63.1% 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 objective 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)

3.0 CANADA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in Canada during 2010. 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); and
- trends in the alcohol-crash problem (Section 3.5).

3.1 DEATHS IN ALCOHOL-RELATED CRASHES

Table 3-1 presents information on people who died in alcohol-related crashes in Canada during 2010. 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. The first data 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, 247 people age 16-19 were killed in road crashes in Canada during 2010. And, in 233 of these cases (94.3%) 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, 110 people age 16-19 died in alcohol-related crashes in Canada during 2010. The next column expresses this as a percentage – e.g., 47.2% of the 16-19 year olds 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 12.3% of all the people killed in alcohol-related crashes in Canada during 2010.

Table 3-1
Deaths* in Alcohol-Related Crashes: Canada, 2010

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	112	94	83.9	16	17.0	1.8
16-19	247	233	94.3	110	47.2	12.3
20-25	346	333	96.2	189	56.8	21.1
26-35	345	320	92.8	177	55.3	19.8
36-45	338	311	92.0	155	49.8	17.3
46-55	391	360	92.1	139	38.6	15.5
>55	762	661	86.7	109	16.5	12.2
Gender						
Male	1795	1647	91.8	708	43.0	79.1
Female	746	665	89.1	187	28.1	20.9
Type						
Driver/Operator	1621	1505	92.8	590	39.2	65.9
Passenger	549	498	90.7	180	36.1	20.1
Pedestrian	358	305	85.2	123	40.3	13.7
Unknown	13	4	30.8	2	50.0	0.2
Vehicle Occupied						
Automobiles	1126	1041	92.5	382	36.7	42.7
Trucks/Vans	532	498	93.6	218	43.8	24.4
Motorcycles	196	184	93.9	57	31.0	6.4
Tractor Trailers	39	35	89.7	2	5.7	0.2
Other Hwy. Vehs.	15	14	93.3	0	0.0	0.0
Off-road Vehicles	267	235	88.0	113	48.1	12.6
(Pedestrians)	358	305	85.2	123	40.3	13.7
Unknown	8	0	0.0	0	0.0	0.0
TOTAL	2541	2312	91.0	895	38.7	100.0

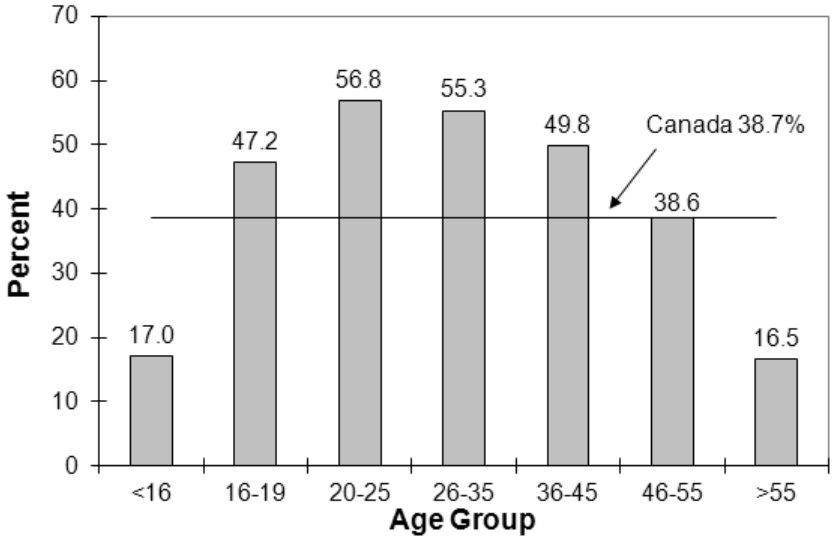
*persons dying within 12 months in collisions on and off public roadways

The totals at the bottom of the table provide a summary. As can be seen, 2,541 persons died in motor vehicle crashes in Canada during 2010. In 2,312 (91.0%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 895 (38.7%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (2,541 x .387) it can be estimated that *in Canada during 2010, 984 persons died in alcohol-related crashes*.

3.1.1 Victim age. Of all the people who died in alcohol-related crashes (see last column of Table 3-1), 21.1% were aged 20-25; 19.8% were aged 26-35; 17.3% were aged 36-45; 15.5% were aged 46-55; 12.3% were aged 16-19; and 12.2% were over age 55. The youngest (<16) group accounted for only 1.8% 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 20-25 and 26-35 died (56.8% and 55.3%, respectively). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – only 17.0% of persons under 16 and 16.5% of persons over 55 years of age died in crashes involving alcohol.

Figure 3-1
Percent of Alcohol-Related Deaths
Within Each Age Group: Canada, 2010



3.1.2 Gender. Of all the people who died in alcohol-related crashes, 79.1% were males. The incidence of alcohol in crashes in which a male died (43.0%) was greater than the incidence of alcohol in crashes in which a female died (28.1%).

3.1.3 Victim type. Of all the people who died in alcohol-related crashes, 65.9% were drivers/operators of a vehicle; 20.1% were passengers; 13.7% were pedestrians; and 0.2% were victims whose position was unknown. Within each of these victim types, there are some differences in alcohol involvement. Among the principal victim types, the highest incidence of alcohol involvement (40.3%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 39.2% of the crashes in which a driver/operator died and in 36.1% of cases where a passenger died.

3.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, over two-fifths (42.7%) were in an automobile; 24.4% were in a truck/van; 12.6% were on an off-road vehicle (e.g., bicycle, snowmobile, all-terrain vehicle); and 6.4% 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 (43.8% versus 36.7%). The incidence of alcohol involvement in which a person on a motorcycle died was 31.0%. Alcohol was involved in 48.1% of the crashes in which a person on an off-road vehicle died.

3.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Canada during 2010. Table 3-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple). The data are presented for drivers of the principal types of vehicles (i.e., automobiles, trucks, vans, motorcycles, tractor-trailers).

The first data 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 16-19 year olds there were 111 drivers killed during 2010; 95 of these fatally injured drivers (85.6%) were tested for alcohol. Of those who were tested, 62.1% showed no evidence of alcohol, 4.2% had BACs below 50 mg%, 3.2% had BACs from 50 to 80 mg%, 13.7% had BACs from 81 to 160 mg%, and 16.8% 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 1,372 drivers fatally injured in traffic crashes in Canada during 2010. The overall rate of testing for alcohol in drivers was 84.5%, slightly higher than the rate in 2009 – 83.8%. Among tested drivers in Canada:

- 62.6% showed no evidence of alcohol – 37.4% had been drinking;
- 4.1% had BACs from 1-49 mg%;
- 2.2% had BACs from 50-80 mg%
- 11.1% had BACs from 81 to 160 mg%; and,
- 19.9% had BACs over 160 mg%.

Thus, 37.4% of fatally injured drivers in Canada had been drinking and most of these had illegal BACs – 83.1% of fatally injured drinking drivers had BACs >80 mg%.

Table 3-2
Alcohol Use Among Fatally Injured Drivers: Canada, 2010

Category of Driver	Number of Drivers*	Drivers Tested		Percent of Tested Drivers with BACs of:				
		Number	% of total	Zero	1-49	50-80	81-160	>160
Age								
<16	3	3	100.0	66.7	0.0	0.0	33.3	0.0
16-19	111	95	85.6	62.1	4.2	3.2	13.7	16.8
20-25	198	173	87.4	50.3	4.6	3.5	15.0	26.6
26-35	216	199	92.1	48.7	5.5	3.0	14.1	28.6
36-45	195	168	86.2	50.6	4.8	2.4	19.6	22.6
46-55	245	217	88.6	65.0	4.1	0.5	7.8	22.6
>55	404	304	75.2	83.9	2.6	1.6	3.6	8.2
Gender								
Male	1062	900	84.7	59.2	4.4	2.6	12.8	21.0
Female	310	259	83.5	74.5	3.1	0.8	5.4	16.2
Vehicle Type								
Automobile	785	654	83.3	63.3	3.8	2.3	12.2	18.3
Motorcycle	178	150	84.3	66.7	8.7	2.7	7.3	14.7
Tractor Trailer	35	31	88.6	96.8	0.0	0.0	3.2	0.0
Heavy Truck[1]	13	12	92.3	91.7	0.0	0.0	8.3	0.0
Van	96	86	89.6	58.1	3.5	3.5	17.4	17.4
Light Truck[2]	253	220	87.0	52.3	3.2	1.4	9.5	33.6
Other Truck[3]	4	1	25.0	100.0	0.0	0.0	0.0	0.0
Other Hwy. Vehicle[4]	8	5	62.5	100.0	0.0	0.0	0.0	0.0
Collision Type								
Single-Vehicle	639	552	86.4	44.0	3.4	2.9	17.2	32.4
Multiple-Vehicle	733	607	82.8	79.6	4.8	1.5	5.6	8.6
TOTAL	1372	1159	84.5	62.6	4.1	2.2	11.1	19.9

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

[1] Trucks over 4500 kg.

[2] e.g., pickup trucks.

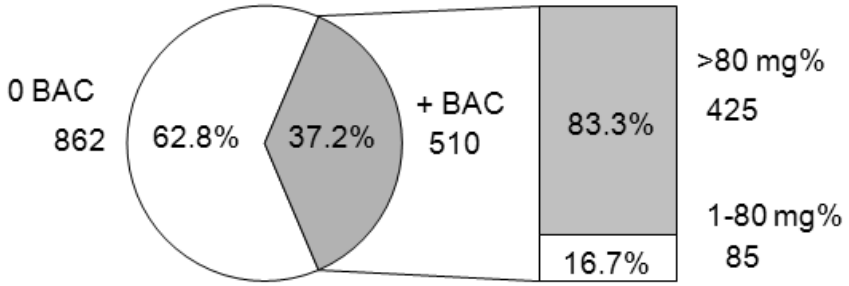
[3] Utility vehicles, plows and trucks of unknown type.

[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, 510 of 1,372 drivers (37.2%) have a positive BAC. And among fatally injured drinking drivers, 425 (83.3%) have BACs over 80 mg% (see note on pp. 47-48).

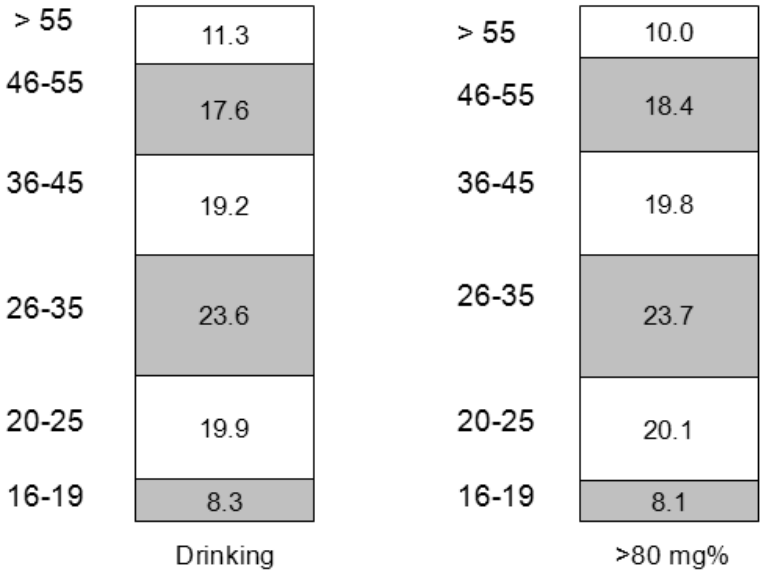
Figure 3-2
BACs** Among Fatally Injured Drivers*: Canada, 2010



* 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.

Figure 3-3
Percent of All Fatally Injured Drinking and Legally Impaired Drivers Accounted for by Each Age Group: Canada, 2010



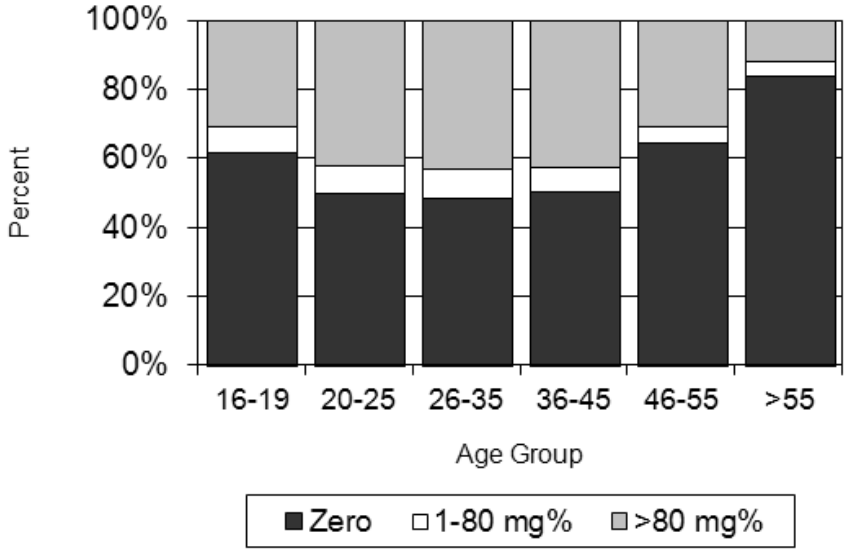
Of all the fatally injured drinking drivers, 23.6% were aged 26-35; 19.9% were aged 20-25; 19.2% were aged 36-45; 17.6% were aged 46-55; and 11.3% were over age 55. Those aged 16-19 accounted for only 8.3% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 23.7% were aged 26-35; 20.1% were aged 20-25; 19.8% were aged 36-45; 18.4% were aged 46-55; and 10.0% were over age 55. Those aged 16-19 accounted for only 8.1% of fatally injured drivers who were over the legal limit.

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.

Within each of the age groups, fatally injured drivers age 26-35 were the most likely to have been drinking – 51.3% of drivers in this age group had been drinking. By contrast, only 16.1% of tested drivers over age 55 had been drinking.

Figure 3-4
Percent of Drinking Drivers Within Each Age Group: Canada, 2010

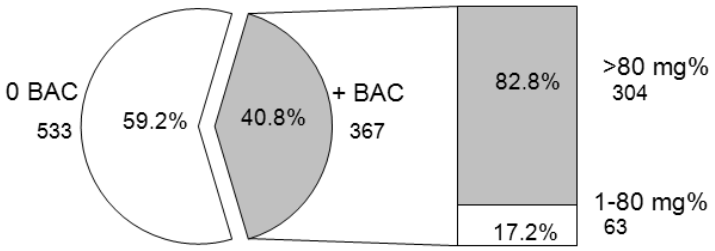


3.2.2 Gender differences. Males dominate the picture – they account for 84.8% of all the fatally injured drivers who had been drinking and 84.4% of all of the fatally injured drivers who were legally impaired. Males dominate the picture largely because they account for 77.4% of the drivers who are killed (1,062 of the 1,372 fatalities are males).

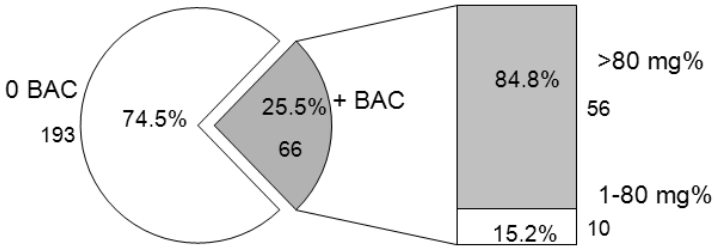
A comparison in the prevalence of alcohol use among male and female fatally injured drivers is shown in Figure 3-5. The pie chart shows within each gender, the percent who were sober (i.e., 0 BAC) and positive for alcohol (+ BAC). The bar to the right of the pie chart shows the distribution of alcohol 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 (40.8% and 25.5%, respectively). And, most of the male and female drivers who were drinking had BACs over the legal limit (82.8% and 84.8%, respectively).

Figure 3-5
Alcohol Use Among Male and
Female Drivers: Canada, 2010



MALES



FEMALES

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), 55.4% were automobile drivers; 24.2% were light truck drivers; 11.5% were motorcycle riders; and 8.3% were van drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 55.6% were automobile drivers; 26.4% were light truck drivers; 9.2% were motorcycle riders; and 8.3% were van drivers.

Figures 3-6a, 3-6b and 3-6c summarize the results of alcohol tests for drivers fatally injured in 2010 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, 36.7% had been drinking. Of those who were drinking, the vast majority (83.3%) had alcohol levels in excess of the legal limit. Among fatally injured van drivers, 41.9% had been drinking and most (83.3%) of these had BACs over the legal limit. Among motorcycle riders, 33.3% had been drinking and 66.0% of these had BACs over the legal limit. The highest incidence of drinking was found among drivers of light trucks – 47.7% had been drinking and 90.5% of these had illegal BACs. Heavy truck and tractor-trailer drivers have a much lower frequency of alcohol involvement. Indeed, only 8.3% of heavy truck drivers had been drinking. And, the lowest incidence of drinking is found among tractor-trailer drivers – only 3.2% had been drinking.

Table 3-3

Number and Percent of Fatally Injured Drinking and Legally Impaired Drivers Accounted for by Drivers* of Different Vehicle Types: Canada, 2010

Vehicle Type	Number of Drinking Drivers	% of All Drinking Drivers	Number of Legally Impaired Drivers	% of All Legally Impaired Drivers
Automobile	240	55.4	200	55.6
Motorcycle	50	11.5	33	9.2
Tractor-Trailer	1	0.2	1	0.3
Heavy Truck[1]	1	0.2	1	0.3
Van	36	8.3	30	8.3
Light Truck[2]	105	24.2	95	26.4
TOTAL	433	100.0	360	100.0

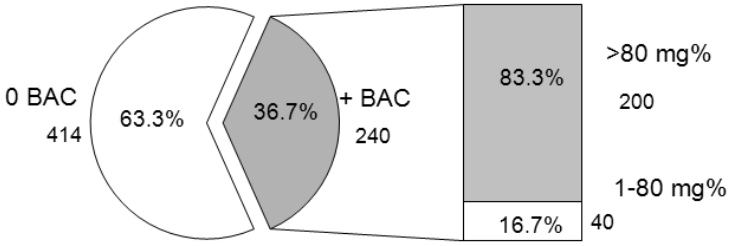
* Excludes operators of bicycles, snowmobiles, farm tractors and other non-highway vehicles.

[1] Trucks over 4500 kg.

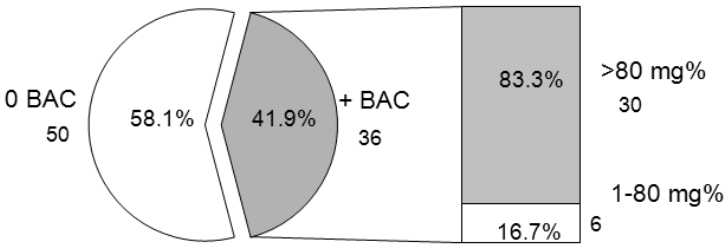
[2] e.g., pickup trucks.

[3] Utility vehicles, plows and trucks of unknown type.

Figure 3-6a
Alcohol Use Among Drivers of Different Vehicle Types: Canada, 2010

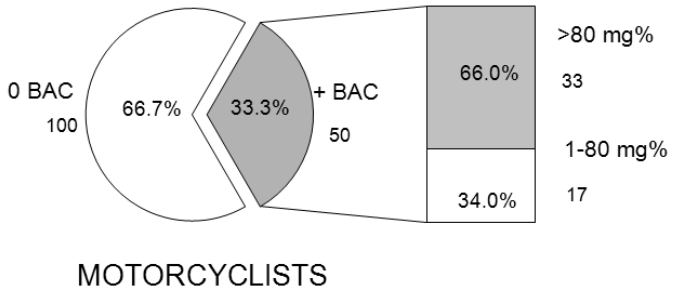


AUTOMOBILE DRIVERS

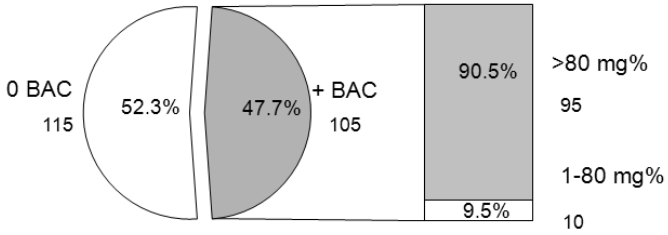


VAN DRIVERS

Figure 3-6b
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 2010

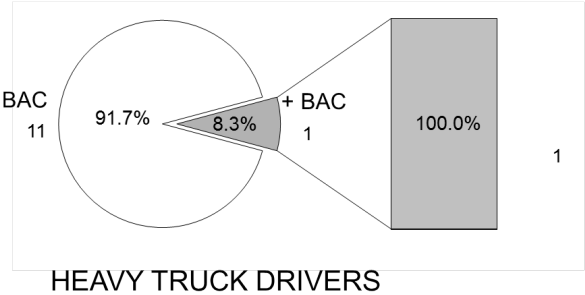


MOTORCYCLISTS

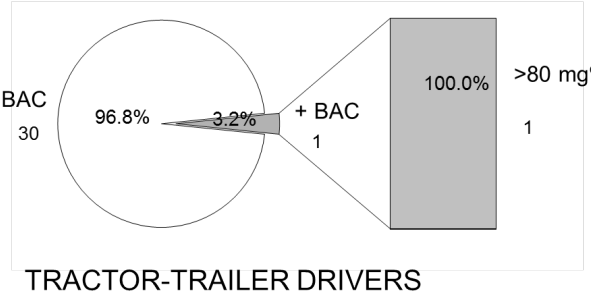


LIGHT TRUCK DRIVERS

Figure 3-6c
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 2010



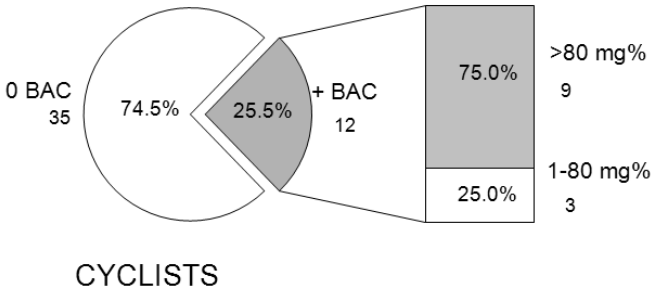
HEAVY TRUCK DRIVERS



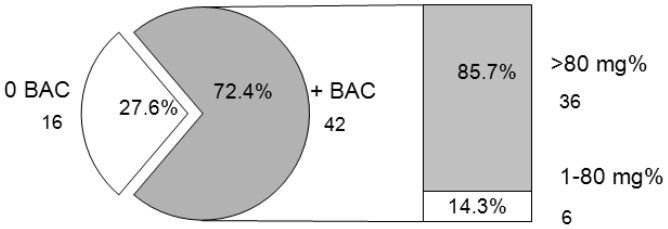
TRACTOR-TRAILER DRIVERS

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 – only 25.5% of fatally injured bicyclists had been drinking at the time of the collision. Among those bicyclists who had been drinking, 75.0% had BACs over the legal limit. Among snowmobile drivers, 72.4% had been drinking and 85.7% had BACs over the legal limit. Operators of all-terrain vehicles were less likely than snowmobile drivers to have been drinking – 54.4% of them had been drinking and 74.4% of these drinking drivers had BACs over the legal limit.

Figure 3-6d
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 2010

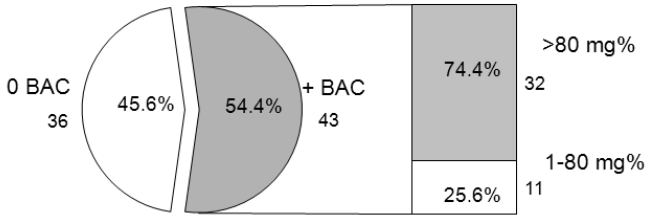


CYCLISTS



SNOWMOBILE OPERATORS

Figure 3-6e
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 2010

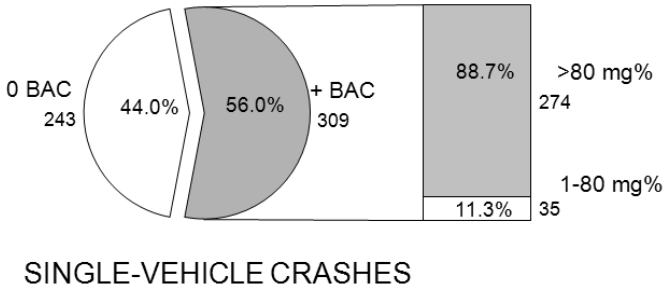


ALL-TERRAIN VEHICLE OPERATORS

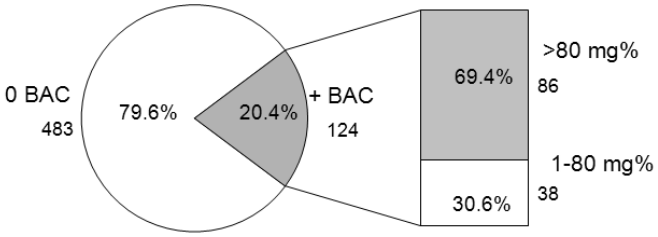
3.2.4 Collision differences. Less than half of all drivers killed (639 out of 1,372, or 46.6%) were involved in single-vehicle collisions but these crashes accounted for almost three-quarters of the drivers who had been drinking or were legally impaired (71.4% and 76.1%, respectively).

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 (56.0%) were positive for alcohol, compared to only 20.4% of those involved in multiple-vehicle collisions. Most drinking drivers in single-vehicle crashes had BACs over the legal limit (88.7%). By contrast, among drinking drivers in multiple-vehicle crashes, 69.4% had BACs over the legal limit.

Figure 3-7
Alcohol Use Among Drivers by
Type of Collision: Canada, 2010



SINGLE-VEHICLE CRASHES



MULTIPLE-VEHICLE CRASHES

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 2010. Table 3-4 shows the information by age group, gender and jurisdiction. The first data 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 2010, as shown by the totals at the bottom of the table, there were 358 pedestrians fatally injured; 214 (59.8%) of these pedestrians were tested for the presence of alcohol. Among tested pedestrians:

- 54.2% showed no evidence of alcohol – 45.8% had been drinking;
- 0.9% had BACs below 50 mg%;
- 2.3 had BACs from 50 to 80 mg%;
- 10.7% had BACs from 81 to 160%; and
- 31.8% had BACs over 160 mg%.

Thus, 45.8% of fatally injured pedestrians had been drinking and most of these had BACs over 80 mg%.

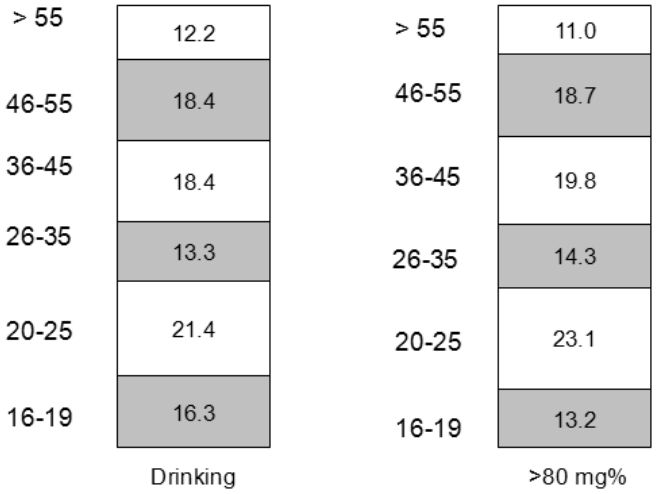
3.3.1 Age difference. Of all the fatally injured pedestrians, two-fifths (40.5%) were over 55 years of age (145 of the 358 pedestrian fatalities). The oldest pedestrians, however, accounted for a much smaller portion of the drinking pedestrians and those with BACs over 80 mg%. This is illustrated in 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, 21.4% were aged 20-25; 18.4% were aged 36-45 and 46-55; 16.3% were aged 16-19; 13.3% were aged 26-35; and 12.2% were over age 55.

Table 3-4
Alcohol Use Among Fatally Injured Pedestrians: Canada, 2010

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
Age								
<16	27	5	18.5	100.0	0.0	0.0	0.0	0.0
16-19	26	20	76.9	20.0	5.0	15.0	20.0	40.0
20-25	37	26	70.3	19.2	0.0	0.0	19.2	61.5
26-35	33	22	66.7	40.9	0.0	0.0	13.6	45.5
36-45	39	34	87.2	47.1	0.0	0.0	11.8	41.2
46-55	51	34	66.7	47.1	0.0	2.9	5.9	44.1
>55	145	73	50.3	83.6	1.4	1.4	6.8	6.8
Gender								
Male	221	134	60.6	43.3	0.7	3.0	12.7	40.3
Female	137	80	58.4	72.5	1.3	1.3	7.5	17.5
Jurisdiction								
British Columbia	63	30	47.6	50.0	0.0	3.3	10.0	36.7
Alberta	49	38	77.6	36.8	5.3	0.0	18.4	39.5
Saskatchewan	21	17	81.0	35.3	0.0	5.9	0.0	58.8
Manitoba	17	15	88.2	66.7	0.0	0.0	6.7	26.7
Ontario	130	78	60.0	62.8	0.0	2.6	12.8	21.8
Quebec	52	17	32.7	64.7	0.0	0.0	0.0	35.3
New Brunswick	13	9	69.2	66.7	0.0	0.0	0.0	33.3
Nova Scotia	8	7	87.5	42.9	0.0	14.3	14.3	28.6
Prince Edward Island	1	1	100.0	100.0	0.0	0.0	0.0	0.0
Nfld and Labrador	2	1	50.0	100.0	0.0	0.0	0.0	0.0
Territories*	2	1	50.0	0.0	0.0	0.0	100.0	0.0
TOTAL	358	214	59.8	54.2	0.9	2.3	10.7	31.8

* The Yukon, Northwest Territories and Nunavut have been aggregated to protect the identity of one of the pedestrians.

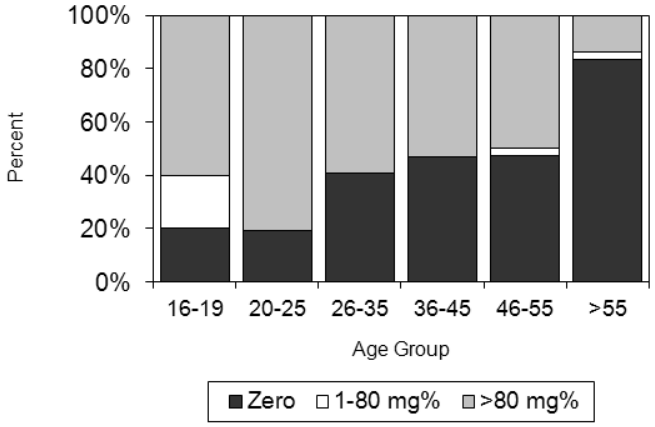
Figure 3-8
Percent of All Fatally Injured Drinking and Legally Impaired Pedestrians Accounted for by Each Age Group: Canada, 2010



Of all the fatally injured pedestrians with BACs over 80 mg%, 23.1% were aged 20-25; 19.8% were aged 36-45; 18.7% were aged 46-55; 14.3% were aged 26-35; 13.2% aged 16-19; and 11.0% were over age 55.

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.

Figure 3-9
Percent of Drinking Pedestrians Within Each Age Group: Canada, 2010

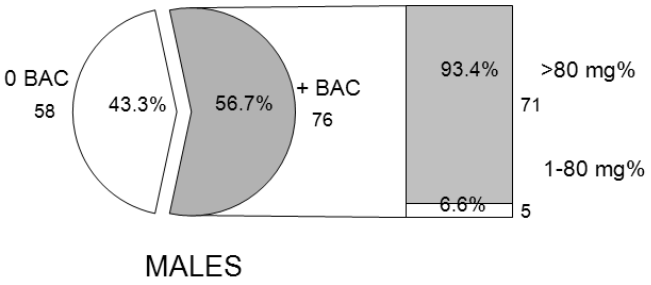


Within each of the age groups, fatally injured pedestrians age 20-25 were the most likely to have been drinking – 80.7% of pedestrians in this age group had been drinking. By contrast, only 16.4% of tested pedestrians over age 55 had been drinking.

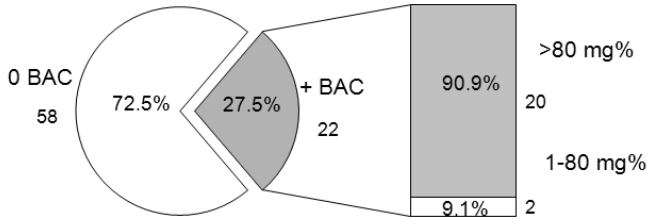
3.3.2 Gender differences. Males account for three-quarters (77.6%) of all the fatally injured pedestrians who had been drinking, and 78.0% of all of the fatally injured pedestrians who had BACs over 80 mg%. Males dominate the picture because they account for 61.7% of the pedestrians who are killed (221 of the 358 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.

Figure 3-10
Alcohol Use Among Male and Female
Fatally Injured Pedestrians: Canada, 2010



MALES



FEMALES

Among fatally injured male pedestrians, 56.7% had been drinking and 93.4% of these pedestrians had BACs over 80 mg%. A slightly different picture emerges among fatally injured

female pedestrians – only 27.5% had been drinking and 90.9% of these pedestrians had BACs over 80 mg%.

3.3.3 Jurisdictional differences. Of all the fatally injured pedestrians, 36.3% were killed in Ontario, 17.6% were killed in British Columbia and 14.5% were killed in Quebec. Ontario accounted for 29.6% and Alberta accounted for 24.4% of the fatally injured drinking pedestrians. Ontario accounted for 29.7% and Alberta accounted for 24.2% 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 and British Columbia are underestimated because they are based on tested pedestrians and the rate of testing for alcohol is low in these jurisdictions – e.g., only 32.7% and 47.6% of pedestrians fatally injured in Quebec and British Columbia were tested, compared to 100.0% in Prince Edward Island, 88.2% in Manitoba and 87.5% in Nova Scotia. Pedestrians in the Northwest Territories, Yukon and Nunavut were grouped (into the Territories) to ensure that an individual pedestrian cannot be identified.

As shown in Table 3-4, the highest incidence of alcohol in fatally injured pedestrians, however, was in the Territories and Saskatchewan (100.0% and 64.7%, respectively). The lowest incidence of alcohol in fatally injured pedestrians was in Prince Edward Island and Newfoundland and Labrador 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 2010 in Canada, excluding Newfoundland and Labrador because data from that province 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.

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 data 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.

Table 3-5
Drivers in Alcohol-Related Serious Injury Crashes:
Canada*, 2010

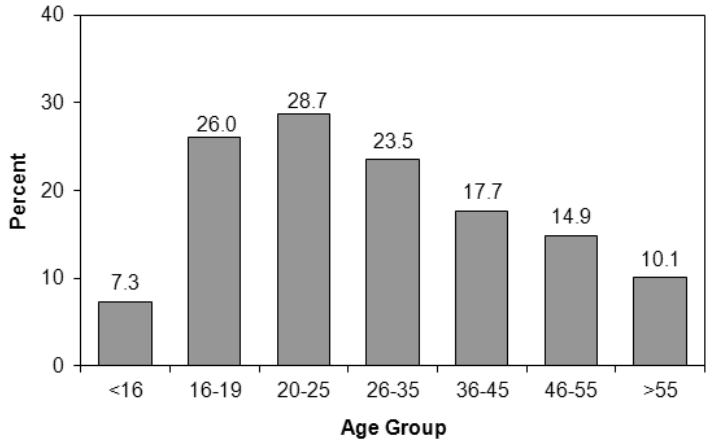
Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	151	11	7.3	0.4
16-19	1191	310	26.0	11.3
20-25	1991	572	28.7	20.9
26-35	2620	616	23.5	22.5
36-45	2377	420	17.7	15.4
46-55	2434	362	14.9	13.2
>55	2744	277	10.1	10.1
unknown	968	165	17.0	6.0
Gender				
Male	9938	2056	20.7	75.2
Female	4084	565	13.8	20.7
unknown	454	112	24.7	4.1
Vehicle Type**				
Auto	5362	1080	20.1	39.5
Truck/Van	3699	725	19.6	26.5
Motorcycle	930	135	14.5	4.9
Tractor Trailer	348	47	13.5	1.7
Other Hwy. Vehicle	134	19	14.2	0.7
Off-Road	579	112	19.3	4.1
Unknown	111	28	25.2	1.0
Collision Type				
Single-Vehicle	4858	1879	38.7	68.8
Multiple-Vehicle	9618	854	8.9	31.2
TOTAL	14476	2733	18.9	100.0

* excluding Newfoundland and Labrador
** Vehicle type section excludes Quebec since this jurisdiction groups automobiles and light trucks together in its collision data since March 2010.

As shown, by the totals at the bottom of the table, 14,476 drivers were involved in crashes in which someone was seriously injured. Among these, 18.9% were alcohol-related crashes.

3.4.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 22.5% were aged 26-35; 20.9% were aged 20-25; and 15.4% were aged 36-45. Drivers under the age of 16 accounted for only 0.4% 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 (28.7%). The lowest incidence of involvement in alcohol-related crashes was found for the youngest age group of drivers – those under 16 (7.3%).

Figure 3-11
Percent of Drivers Within Each Age Group in Serious Injury Crashes that Involved Alcohol: Canada, 2010



3.4.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 75.2% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (20.7% and 13.8%, respectively).

3.4.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 50.3% were automobile drivers and 33.8% were truck/van drivers.

About one out of five of the serious injury crashes involving automobile and truck/van drivers were alcohol related (20.1% and 19.6%, respectively) as were 14.5% of motorcycle riders and 14.2% of drivers of other highway vehicles. The lowest incidence of involvement in alcohol-related serious injury crashes was found among tractor-trailer drivers (13.5%).

3.4.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 68.8% 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 – 38.7% of these drivers, compared to only 8.9% for drivers involved in multiple-vehicle crashes.

3.5 TRENDS IN THE ALCOHOL-CRASH PROBLEM

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. This section examines changes in these four indicators of the problem. Canada's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem by 2010 is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

3.5.1 Deaths in alcohol-related crashes: 1995-2010. Table 3-6 and Figure 3-12 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2010. These results differ slightly from those presented in Section 3.1 for two reasons.

Table 3-6

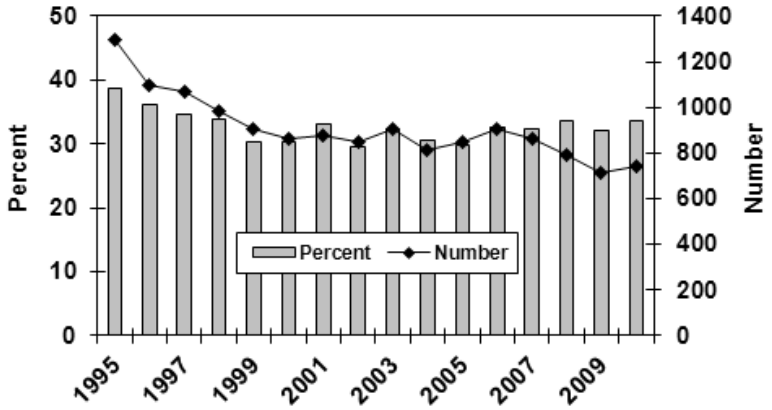
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Canada, 1995-2010

Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	3338	1296	38.8
1996	3031	1097	36.2
1997	3089	1070	34.6
1998	2909	986	33.9
1999	2986	906	30.3
2000	2865	864	30.2
2001	2645	874	33.0
2002	2867	850	29.6
2003	2782	902	32.4
2004	2673	815	30.5
2005	2845	851	29.9
2006	2771	907	32.7
2007	2670	864	32.4
2008	2355	790	33.5
2009	2229	714	32.0
2010	2211	744	33.6
1996-2001 baseline	2921	966	33.1

* 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 3-12
Number and Percent of Deaths Involving
a Drinking Driver: Canada, 1995-2010



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 1,296 to 815 between 1995 and 2004, rose to 907 in 2006, declined to a low of 714 in 2009, and rose again to 744 in 2010. The percentage of alcohol-related fatalities generally decreased from 38.8% in 1995 to a low of 29.6% in 2002, rose to 32.4% in 2003, decreased to 29.9% in 2005, rose to 32.7% in 2006, decreased to 32.4% in 2007, rose to 33.5% in 2008, decreased to 32.0% in 2009, and rose again to 33.6% in 2010.

As shown at the bottom of the table, during the 1996-2001 baseline period there was an average of 966 fatalities involving a drinking driver and they accounted for 33.1% of all fatalities. This means that the percent of fatalities involving a drinking driver increased by 1.5% from 33.1% in the baseline period (1996-2001) to 33.6% in 2010. However, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 23.0% decrease from an average of 966 in the baseline period (1996-2001) to 744 in 2010.

3.5.2 Fatally injured drivers: 1987-2010. Data on alcohol use among fatally injured drivers over the 24-year period from 1987 to 2010 are shown in Table 3-7. 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 742 to 384 between 1987 and 2004, rose to 459 in 2005, declined to 432 in 2007, rose slightly to 438 in 2008, and fell again to 360 in 2010. The percent of fatally injured drivers with BACs over the legal limit dropped from 43.1% to 27.1% between 1987 and 1999, fluctuated until 2005 (31.0%), declined to 30.2% in 2006, rose to 32.9% in 2008, and declined again to 31.1% in 2010.

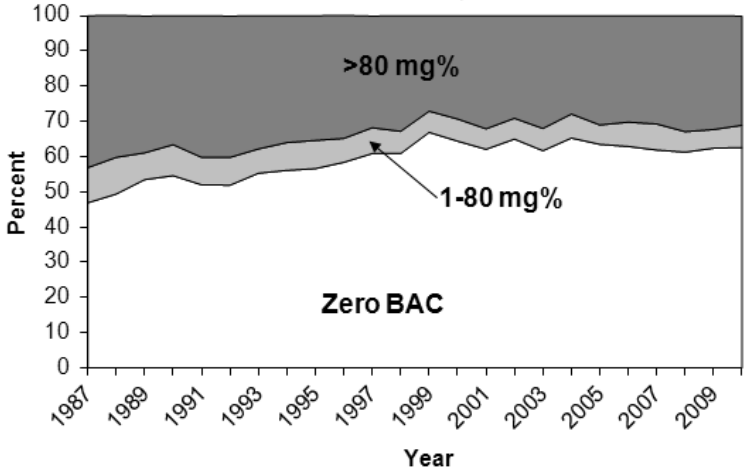
Table 3-7

Alcohol Use Among Fatally Injured Drivers:
Canada, 1987-2010

				Drivers Grouped by BAC (mg%)					
	Number of	Number	Percent	Zero BAC		1-80 BAC		>80 BAC	
YEAR	Drivers*	Tested	Tested	No.	% Tested	No.	% Tested	No.	% Tested
1987	2250	1721	76.5	807	46.9	172	10.0	742	43.1
1988	2326	1796	77.2	887	49.4	186	10.4	723	40.3
1989	2384	1872	78.5	1002	53.5	143	7.6	727	38.8
1990	2181	1756	80.5	959	54.6	155	8.8	642	36.6
1991	2067	1635	79.1	850	52.0	127	7.8	658	40.2
1992	1981	1585	80.0	823	51.9	126	7.9	636	40.1
1993	2043	1677	82.1	928	55.3	115	6.9	634	37.8
1994	1886	1602	84.9	899	56.1	127	7.9	576	36.0
1995	1924	1617	84.0	915	56.6	129	8.0	573	35.4
1996	1728	1436	83.1	838	58.4	97	6.8	501	34.9
1997	1802	1475	81.9	899	60.9	108	7.3	468	31.7
1998	1714	1431	83.5	872	60.9	90	6.3	469	32.8
1999	1793	1508	84.1	1009	66.9	90	6.0	409	27.1
2000	1710	1440	84.2	928	64.4	90	6.3	422	29.3
2001	1645	1386	84.3	861	62.1	80	5.8	445	32.1
2002	1744	1460	83.7	949	65.0	86	5.9	425	29.1
2003	1671	1406	84.1	868	61.7	88	6.3	450	32.0
2004	1633	1378	84.4	900	65.3	94	6.8	384	27.9
2005	1784	1483	83.1	942	63.5	82	5.5	459	31.0
2006	1738	1455	83.7	915	62.9	100	6.9	440	30.2
2007	1667	1406	84.3	870	61.9	104	7.4	432	30.7
2008	1535	1330	86.6	815	61.3	77	5.8	438	32.9
2009	1436	1204	83.8	751	62.4	64	5.3	389	32.3
2010	1372	1159	84.5	726	62.6	73	6.3	360	31.1
1996-2001 baseline	1732	1446	83.5	901	62.3	93	6.4	452	31.3

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

Figure 3-13
Trends in Alcohol Use Among Driver Fatalities: Canada, 1987-2010



By contrast, the number of fatally injured drivers with zero BAC has fluctuated over this 24-year period, from 807 in 1987 to a high of 1,009 in 1999. In 2010, there were 726 fatally injured drivers with zero BAC. The percent of fatally injured drivers with zero BAC increased from 46.9% to 66.9% between 1987 and 1999, remained stable until 2004, decreased to 61.3% in 2008, and rose again to 62.6% in 2010.

The number of fatally injured drivers with BACs between 1-80 mg% generally declined from 172 to 80 between 1987 and 2001, rose to 94 in 2004, decreased to 82 in 2005, rose to 104 in 2007, decreased to a low of 64 in 2009, and rose to 73 in 2010. The percent of fatally injured drivers with BACs between 1 and 80 mg% generally dropped from 10.0% in 1987 to 5.5% in 2005, rose in 2007 (7.4%), decreased to its lowest level in 2009 (5.3%), and rose again in 2010 (6.3%).

When compared to the 1996-2001 baseline period shown at the bottom of Table 3-7, the percentage of fatally injured drivers with zero BACs in 2010 increased by 0.5% (from 62.3% to 62.6%). Among drivers with BACs from 1-80 mg%, there was a 1.6% decrease (from 6.4% to 6.3%). And among those with BACs over 80 mg%, there was a 0.6% decrease (from 31.3% to 31.1%).

Table 3-8 and Figure 3-14 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 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 3-8, the percentage of fatally injured drivers testing positive for alcohol from 1996-2001, the baseline period, is 37.7%. In 2010, 37.2% of fatally injured drivers tested positive for alcohol, which represents a 1.3% decrease from the baseline period.

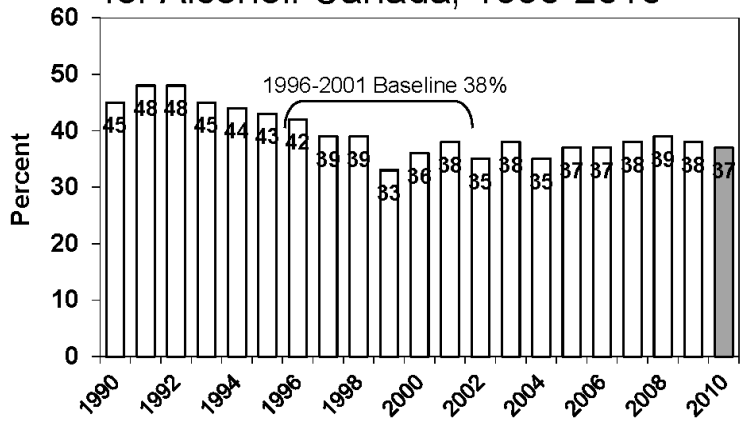
Table 3-8

Alcohol Use Among Fatally Injured Drivers*:
Canada, 1990-2010

YEAR	Number of Drivers*	Drivers Grouped by BAC (mg%) Zero	(% Tested)	Positive	(% Tested)
1990	2181	1191	(54.6)	990	(45.4)
1991	2067	1075	(52.0)	992	(48.0)
1992	1981	1029	(51.9)	952	(48.1)
1993	2043	1131	(55.4)	912	(44.6)
1994	1886	1058	(56.1)	828	(43.9)
1995	1924	1089	(56.6)	835	(43.4)
1996	1728	1008	(58.3)	720	(41.7)
1997	1802	1098	(60.9)	704	(39.1)
1998	1714	1044	(60.9)	670	(39.1)
1999	1793	1200	(66.9)	593	(33.1)
2000	1710	1102	(64.4)	608	(35.6)
2001	1645	1022	(62.1)	623	(37.9)
2002	1744	1133	(65.0)	611	(35.0)
2003	1671	1032	(61.8)	639	(38.2)
2004	1633	1067	(65.3)	566	(34.7)
2005	1784	1133	(63.5)	651	(36.5)
2006	1738	1093	(62.9)	645	(37.1)
2007	1667	1032	(61.9)	635	(38.1)
2008	1535	941	(61.3)	594	(38.7)
2009	1436	896	(62.4)	540	(37.6)
2010	1372	862	(62.8)	510	(37.2)
1996-2001 baseline	1732	1079	(62.3)	653	(37.7)

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

Figure 3-14
Percent of Fatally Injured Drivers* Positive for Alcohol: Canada, 1990-2010



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

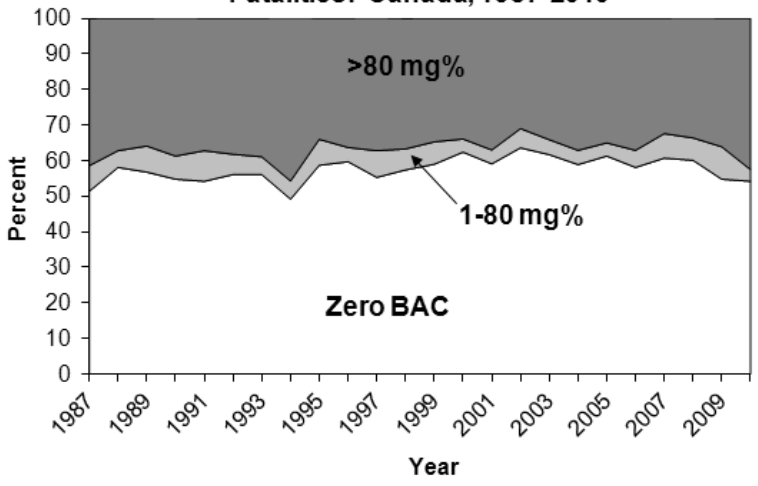
3.5.3 Fatally injured pedestrians: 1987-2010. Data on alcohol use among fatally injured pedestrians over the 24-year period from 1987 to 2010 are shown in Table 3-9. Trends are illustrated in Figure 3-15 which shows changes in the percent of fatally injured pedestrians who: (1) showed no evidence of 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.

Table 3-9

Alcohol Use Among Fatally Injured Pedestrians:
Canada, 1987-2010

				Pedestrians Grouped by BAC (mg%)					
	Number of	Number	Percent	Zero BAC		1-80 BAC		>80 BAC	
YEAR	Pedestrians	Tested	Tested	No.	% Tested	No.	% Tested	No.	% Tested
1987	760	414	54.5	213	51.4	30	7.2	171	41.3
1988	748	358	47.9	208	58.1	17	4.7	133	37.2
1989	676	368	54.4	209	56.8	27	7.3	132	35.9
1990	683	356	52.1	195	54.8	23	6.5	138	38.8
1991	598	347	58.0	188	54.2	30	8.6	129	37.2
1992	522	296	56.7	166	56.1	17	5.7	113	38.2
1993	551	301	54.6	169	56.1	15	5.0	117	38.9
1994	517	295	57.1	145	49.2	15	5.1	135	45.8
1995	493	303	61.5	178	58.7	22	7.3	103	34.0
1996	548	325	59.3	194	59.7	13	4.0	118	36.3
1997	502	295	58.8	163	55.3	22	7.5	110	37.3
1998	498	303	60.8	174	57.4	18	5.9	111	36.6
1999	473	288	60.9	170	59.0	18	6.3	100	34.7
2000	420	245	58.3	153	62.4	9	3.7	83	33.9
2001	405	254	62.7	150	59.1	10	3.9	94	37.0
2002	399	239	59.9	152	63.6	13	5.4	74	31.0
2003	458	261	57.0	161	61.7	11	4.2	89	34.1
2004	416	248	59.6	146	58.9	10	4.0	92	37.1
2005	418	243	58.1	149	61.3	9	3.7	85	35.0
2006	417	248	59.5	144	58.1	12	4.8	92	37.1
2007	426	247	58.0	150	60.7	17	6.9	80	32.4
2008	363	208	57.3	125	60.1	13	6.3	70	33.7
2009	382	208	54.5	114	54.8	19	9.1	75	36.1
2010	358	214	59.8	116	54.2	7	3.3	91	42.5

Figure 3-15
Trends in Alcohol Use Among Pedestrian Fatalities: Canada, 1987-2010



The number of fatally injured pedestrians with a BAC over 80 mg% generally declined from a high of 171 in 1987 to 74 in 2002, rose to 92 in 2004, decreased to 85 in 2005, rose to 92 in 2006, decreased to a low of 70 in 2008, and rose again to 91 in 2010. The percent of fatally injured pedestrians with a BAC over 80 mg% generally declined from 41.3% in 1987 to its lowest level in 2002 (31.0%), rose to 37.1% in 2004, decreased to 35.0% in 2005, rose to 37.1% in 2006, decreased to 32.4% in 2007, and rose again to 42.5% in 2010.

The number of fatally injured pedestrians with no evidence of alcohol generally decreased from 213 to 149 between 1987 and 2005, decreased to 144 in 2006, rose to 150 in 2007, decreased to a low of 114 in 2009, and rose slightly to 116 in 2010. The percent of fatally injured pedestrians with zero BAC has ranged from about 50% to 60% over this 24-year period – 51.4% of fatally injured pedestrians showed no evidence of alcohol in 1987 compared to 54.2% in 2010.

The number of fatally injured pedestrians with BACs between 1-80 mg% has fluctuated over this 24-year period with 30 in 1987, nine in 2005, 17 in 2007, 19 in 2009, and seven in 2010. The percent of fatally injured drivers with BACs between 1-80 mg% also fluctuated between 8.6% in 1991 and 3.7% in 2005, rose to 9.1% in 2009, and fell to a low of 3.3% in 2010.

3.5.4 Drivers in serious injury crashes: 1995-2010. Table 3-10 and Figure 3-16 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those reported earlier in Section 3-4. British Columbia and the Yukon are excluded from the Canada totals because relevant information on serious injury data was not available for these jurisdictions in all of the years examined. The 2009 and 2010 data do not include Newfoundland and Labrador because these data were not available at the time this report was being prepared.

As can be seen, the incidence of alcohol-involvement in serious crashes has declined only slightly. Between 1995 and 2005 the number of drivers in serious injury crashes that involved alcohol declined from 4,106 to 2,919. This number rose to 3,048 in 2006 and fell to a low of 1,963 in 2010. The number of drivers in alcohol-related serious injury crashes in 2009 and 2010, however, is an underestimate since it excludes drivers for Newfoundland and Labrador. The percentage of drivers in serious injury crashes that involved alcohol generally dropped from 21.3% to 17.7% between 1995 and 2005, rose to 19.1% in 2006, decreased in 2008 (18.6%), rose slightly in 2009 (18.7%), and decreased again to 18.0% in 2010.

Table 3-10

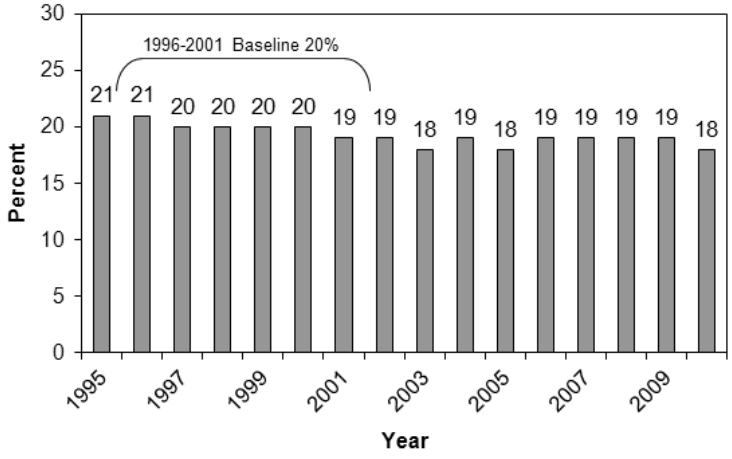
Number and Percent of All Drivers in Serious Injury Crashes that Involved Alcohol[1]: Canada[2], 1995-2010

Year	Number of Drivers	Alcohol Related	
		Number	%
1995	19233	4106	(21.3)
1996	18174	3754	(20.7)
1997	17453	3506	(20.1)
1998	17405	3437	(19.7)
1999	17113	3368	(19.7)
2000	16466	3239	(19.7)
2001	16441	3164	(19.2)
2002	17328	3267	(18.9)
2003	16494	2917	(17.7)
2004	15909	2957	(18.6)
2005	16505	2919	(17.7)
2006	15947	3048	(19.1)
2007	14522	2754	(19.0)
2008	13341	2487	(18.6)
2009	12160	2278	(18.7)
2010	12239	2204	(18.0)
1996-2001 baseline	17175	3411	(19.9)

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

[2] excludes drivers from BC and the Yukon; 2009-2010 excludes Newfoundland and Labrador.

Figure 3-16
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Canada, 1995-2010



In the baseline period, an average of 19.9% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes declined to 18.0%, a decrease of 9.5%.

Table 3-11 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 for two reasons. First, British Columbia and the Yukon are excluded from the Canada totals because relevant information on serious injury was not available for these jurisdictions in all of the years examined. Second, certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles – are excluded. And similar to Table 3-10, this table does not include 2009 and 2010 data for Newfoundland and Labrador.

As can be seen, the incidence of alcohol-involvement in serious crashes has declined only slightly. Between 1995 and 2003 the number of drivers in serious injury crashes that involved alcohol declined from 3,918 to 2,761. This number increased in 2004 to 2,810, decreased to 2,767 in 2005, rose to 2,910 in 2006, and dropped to a low of 2,032 in 2010 (excluding drivers in Newfoundland and Labrador in 2009 and 2010). The percentage of drivers in serious injury crashes that involved alcohol dropped from 21.7% to 18.0% between 1995 and 2003. The percentage rose to 19.0% in 2004, declined to 18.1% in 2005, rose to 19.5% in 2006, and decreased to 18.0% in 2010. In the baseline period (1996-2001), an average of 20.3% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes was 18.0%, an 11.3% decrease.

Table 3-11

Number and Percent of All Drivers[1] in Serious Injury Crashes that Involved Alcohol[2]: Canada[3], 1995-2010

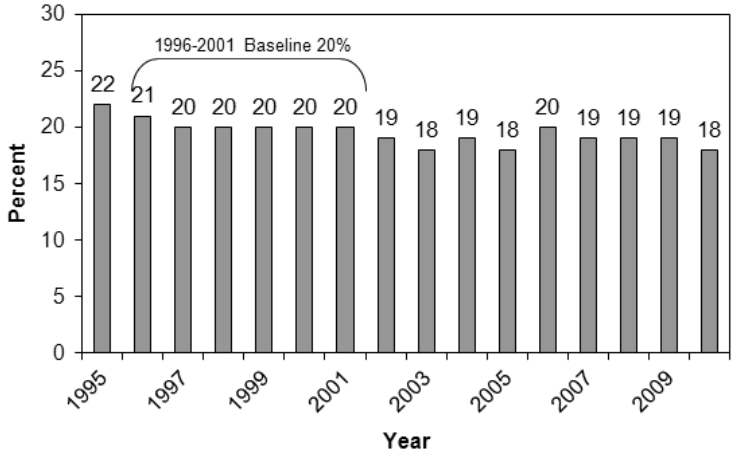
Year	Number of Drivers	Alcohol Related	
		Number	%
1995	18043	3918	(21.7)
1996	17309	3658	(21.1)
1997	16396	3375	(20.6)
1998	16214	3272	(20.2)
1999	16043	3233	(20.2)
2000	15383	3095	(20.1)
2001	15336	3012	(19.6)
2002	15809	2997	(19.0)
2003	15344	2761	(18.0)
2004	14751	2810	(19.0)
2005	15319	2767	(18.1)
2006	14910	2910	(19.5)
2007	13461	2618	(19.4)
2008	12280	2323	(18.9)
2009	11279	2135	(18.9)
2010	11271	2032	(18.0)
1996-2001 baseline	16114	3274	(20.3)

[1] excludes operators of bicycles, snowmobiles, farm tractors, and other non-highway vehicles.

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

[3] excludes drivers from BC and the Yukon; 2009-2010 excludes Newfoundland and Labrador.

Figure 3-17
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Canada, 1995-2010



4.0 BRITISH COLUMBIA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in British Columbia during 2010. 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); and
- trends in the alcohol-crash problem (Section 4.4).

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. 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. The first data 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, 26 people age 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.

The totals at the bottom of the table provide a summary. As can be seen, 387 persons died in motor vehicle crashes 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*.

4.1.1 Victim age. Of all the people who died in alcohol-related crashes, 24.5% (see last

column) 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.

Within each of the age groups, 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.

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

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	17	15	88.2	2	13.3	1.4
16-19	26	25	96.2	15	60.0	10.5
20-25	39	38	97.4	23	60.5	16.1
26-35	59	57	96.6	35	61.4	24.5
36-45	51	50	98.0	23	46.0	16.1
46-55	75	73	97.3	29	39.7	20.3
>55	120	107	89.2	16	15.0	11.2
Gender						
Male	256	244	95.3	103	42.2	72.0
Female	131	121	92.4	40	33.1	28.0
Type						
Driver/Operator	229	216	94.3	80	37.0	55.9
Passenger	95	89	93.7	39	43.8	27.3
Pedestrian	63	60	95.2	24	40.0	16.8
Vehicle Occupied						
Automobiles	155	144	92.9	60	41.7	42.0
Trucks/Vans	103	99	96.1	38	38.4	26.6
Motorcycles	37	36	97.3	11	30.6	7.7
Other Hwy. Vehs.	12	11	64.7	1	9.1	0.7
Offroad Vehicles	17	15	88.2	9	60.0	6.3
(Pedestrians)	63	60	95.2	24	40.0	16.8
TOTAL	387	365	94.3	143	39.2	100.0

*persons dying within 12 months in collisions on and off public roadways

4.1.2 Gender. Of all the people who died in alcohol-related crashes, 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, 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, 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.

4.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in British Columbia during 2010. Table 4-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple).

The first data 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

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

Category of Driver	Number of Drivers*	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
<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
Gender									
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
Vehicle Type									
Automobile	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
Motorcycle	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 Hwy Veh	2	0	0.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
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
TOTAL	214	180	84.1	63	35.0	100.0	52	28.9	100.0

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

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.

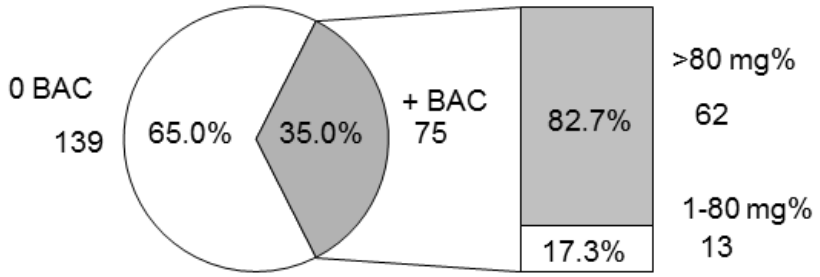
The main findings are shown by the totals at the bottom of the table. British Columbia had a high testing rate in 2010, with 84.1% of fatally injured drivers being tested for alcohol use.

In British Columbia, 35.0% had been drinking and 52 of 63 (82.5%) 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:

- 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%.

Figure 4-1
BACs** Among Fatally Injured Drivers*: British Columbia, 2010



* 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

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.

Within each of the age groups, fatally injured drivers aged 26-35 were the most likely to have been drinking – 56.3% of drivers in this age group had been drinking. 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.

4.3 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 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 data 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, 2,208 drivers were involved in crashes in which someone was seriously injured, and among these 23.4% were alcohol-related crashes.

4.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 21.1% were aged 26-35, 18.6% were aged 20-25; and 17.6% were aged 36-45. Drivers under 16 and over 55 respectively accounted for only 0.2% and 12.8% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, over one-third of the drivers aged 16-19 and 20-25 were involved in alcohol-related serious injury crashes (36.4% and 33.4%). The lowest incidence of involvement in alcohol-related crashes was found for those under 16 years of age (7.7%) and over 55 (12.6%).

Table 4-3
Drivers* in Alcohol-Related Serious Injury Crashes:
British Columbia, 2010

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	13	1	7.7	0.2
16-19	165	60	36.4	11.6
20-25	287	96	33.4	18.6
26-35	391	109	27.9	21.1
36-45	375	91	24.3	17.6
46-55	411	79	19.2	15.3
>55	523	66	12.6	12.8
unknown	43	14	32.6	2.7
Gender				
Male	1547	379	24.5	73.4
Female	624	124	19.9	24.0
unknown	37	13	35.1	2.5
Vehicle Type				
Auto	1024	259	25.3	50.2
Truck/Van	701	178	25.4	34.5
Motorcycle	248	36	14.5	7.0
Tractor Trailer	78	18	23.1	3.5
Other Hwy. Vehicle	21	3	14.3	0.6
Off-Road	122	17	13.9	3.3
Unknown	14	5	35.7	1.0
Collision Type				
Single-Vehicle	866	344	39.7	66.7
Multiple-Vehicle	1342	172	12.8	33.3
TOTAL	2208	516	23.4	100.0

* These numbers are slightly underestimated since 19.0% of all injuries are recorded as unspecified.

4.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 73.4% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (24.5% and 19.9%, respectively).

4.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 50.2% were automobile drivers; 34.5% were truck/van drivers; 7.0% were motorcyclists;

3.5% were tractor-trailer drivers; 3.3% were off-road vehicle drivers; and 0.6% were other highway vehicle drivers. The highest incidence of involvement in alcohol-related serious injury crashes was found for truck/van drivers – 25.4% of these drivers were in crashes that involved alcohol, compared to 25.3% for automobile drivers, 23.1% for tractor-trailer drivers; 14.5% for motorcyclists; and 14.3% for drivers of other highway vehicles. Among off-road vehicle drivers, 13.9% were involved in alcohol-related crashes.

4.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 66.7% 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 – 39.7% of these drivers, compared to only 12.8% for drivers involved in multiple-vehicle crashes.

4.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. British Columbia's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem by 2010 is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

4.4.1 Deaths in alcohol-related crashes: 1995-2010. Table 4-4 and Figure 4-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2010. 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.

Table 4-4

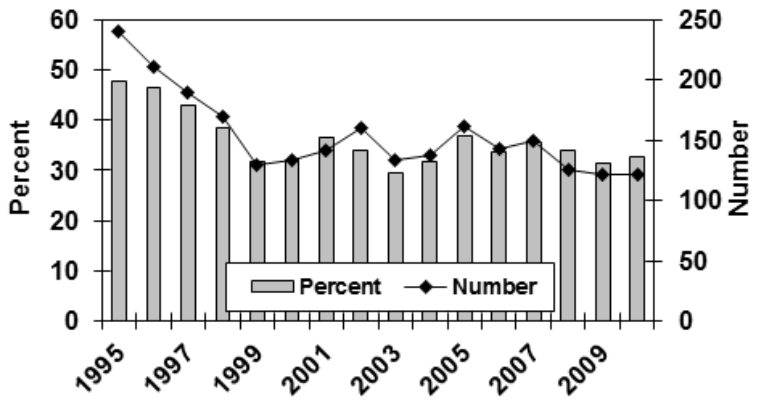
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: British Columbia, 1995-2010

Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	506	241	47.6
1996	455	211	46.4
1997	441	189	42.9
1998	440	171	38.9
1999	410	130	31.7
2000	413	133	32.2
2001	388	142	36.6
2002	469	160	34.1
2003	455	134	29.5
2004	433	138	31.9
2005	436	161	36.9
2006	426	143	33.6
2007	421	150	35.6
2008	369	125	33.9
2009	387	121	31.3
2010	370	121	32.7
1996-2001 baseline	425	163	38.4

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



As shown at the bottom of the table, during the 1996-2001 baseline period there was an average of 163 fatalities involving a drinking driver and they accounted for 38.4% of all fatalities. This means that the percent of fatalities involving a drinking driver decreased by 14.8% from 38.4% in the baseline period (1996-2001) to 32.7% in 2010. And, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 25.8% decrease from an average of 163 in the baseline period (1996-2001) to 121 in 2010.

4.4.2 Fatally injured drivers: Data on alcohol use among fatally injured drivers over the 24-year period from 1987-2010 are shown in Table 4-5. 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.

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%).

When compared to the 1996-2001 baseline period shown at the bottom of Table 4-5, the percentage of fatally injured drivers with zero BACs in 2010 increased by 15.7% (from 56.0% to 64.8%). Among drivers with BACs from 1-80 mg%, there was a 3.1% decrease (from 6.5% to 6.3%). And among drivers with BACs over 80 mg%, there was a 22.9% decrease (from 37.5% to 28.9%).

Table 4-5

Alcohol Use Among Fatally Injured Drivers:
British Columbia, 1987-2010

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Grouped by BAC (mg%) 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
1996-2001 baseline	209	200	95.7	112	56.0	13	6.5	75	37.5

* dying in less than six hours.

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

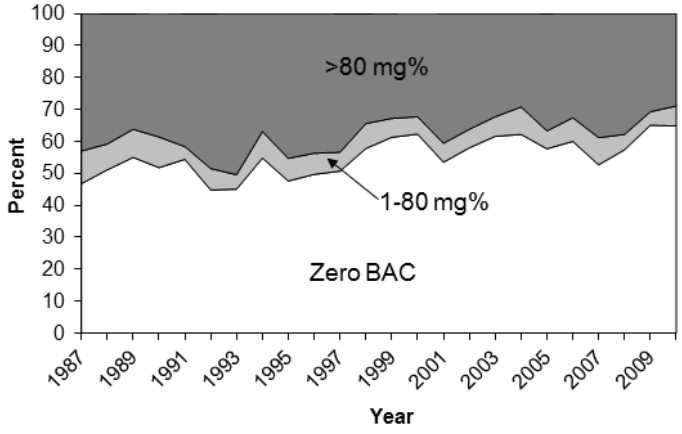


Table 4-6 and Figure 4-4 show data on alcohol use among fatally injured drivers over a shorter period from 1990-2010. These results also differ from those reported above for several reasons. First, the number of drivers is extrapolated to reflect the BAC distribution of drivers tested for alcohol (see 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 1996-2001 is 43.5%. In 2010, 35.0% of fatally injured drivers tested positive for alcohol, a 19.5% decrease from the baseline period.

4.4.3 Drivers in serious injury crashes: Tables and figures in this section show information on drivers involved in alcohol-related injury crashes and not those in alcohol-related serious injury crashes. Data on injury severity in crashes has only recently been reported in British Columbia so it is not possible to examine trends with this indicator. Table 4-7 and Figure 4-5 show information on drivers involved in alcohol-related injury crashes. As shown in Table 4-7, during the baseline period (1996-2001), an average of 13.4% of drivers in injury crashes were in an alcohol-involved crash. This compares to 11.1% in 2010, a 17.2% decrease in the problem.

Table 4-8 and Figure 4-6 also show information on drivers involved in alcohol-related 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 4-7 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 injury crashes has increased slightly over this 16-year period. Between 1995 and 2005 the percentage of drivers in injury crashes that involved alcohol generally increased from 12.7% to 14.8%, decreased to 14.3% in 2006, remained unchanged in 2007, rose slightly to 14.6% in 2008, and decreased again to 11.2% in 2010.

As shown in Table 4-8, in the baseline period (1996-2001), an average of 13.7% of drivers in injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved injury crashes declined to 11.2%, an 18.2% decrease.

Table 4-6

Alcohol Use Among Fatally Injured Drivers*:
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)
1996-2001 baseline	248	140	(56.5)	108	(43.5)

* 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

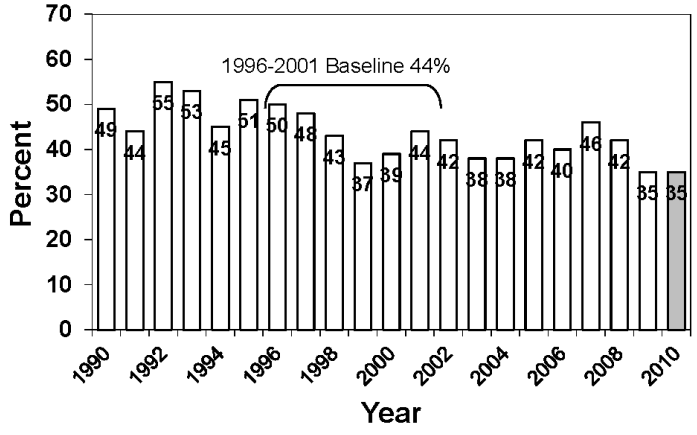


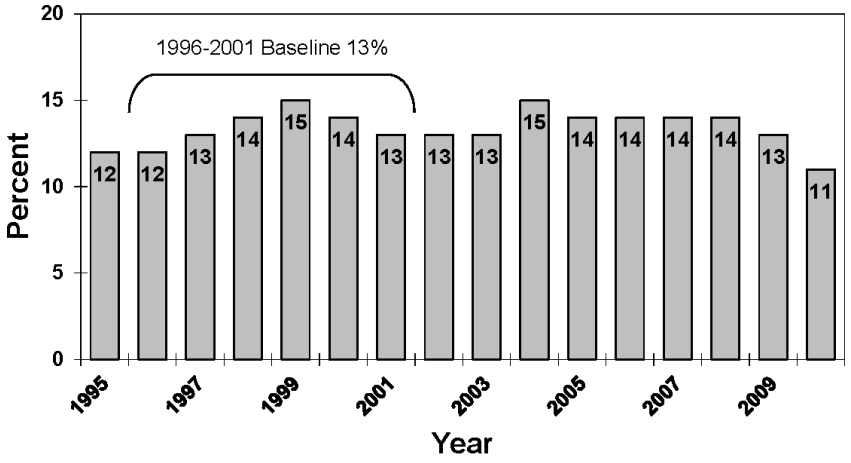
Table 4-7

Number and Percent of All Drivers in Injury Crashes *
that Involved Alcohol: British Columbia, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
1995	40723	5019	(12.3)
1996	36852	4534	(12.3)
1997	33285	4340	(13.0)
1998	32537	4560	(14.0)
1999	30168	4410	(14.6)
2000	32062	4483	(14.0)
2001	32105	4139	(12.9)
2002	32157	4218	(13.1)
2003	34031	4517	(13.3)
2004	33509	4847	(14.5)
2005	33505	4600	(13.7)
2006	32624	4477	(13.7)
2007	30568	4316	(14.1)
2008	25840	3719	(14.4)
2009	23974	3173	(13.2)
2010	25234	2794	(11.1)
1996-2001 baseline	32835	4411	(13.4)

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

Figure 4-5
Percent of All Drivers in Injury Crashes that
Involved Alcohol*: British Columbia, 1995-2010



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

Table 4-8

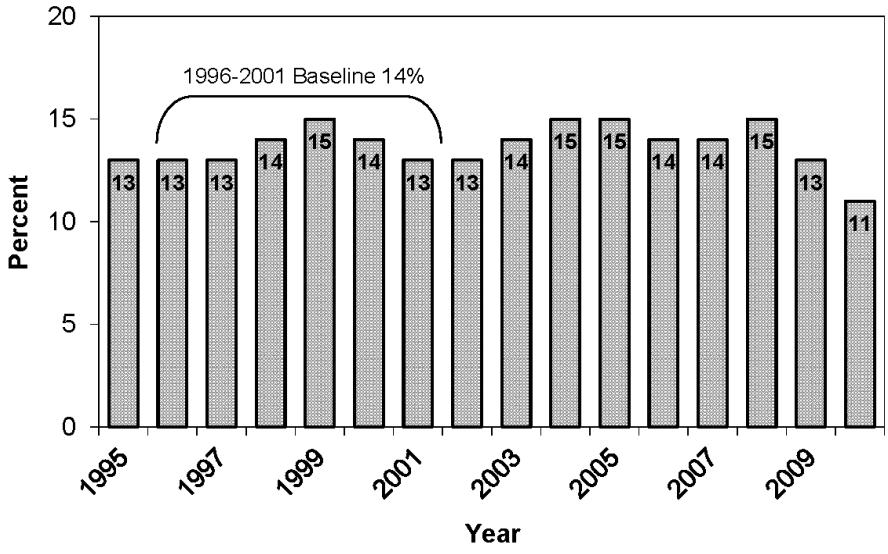
Number and Percent of All Drivers* in Injury Crashes**
that Involved Alcohol: British Columbia, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
1995	39140	4973	(12.7)
1996	35358	4460	(12.6)
1997	31844	4202	(13.2)
1998	31170	4447	(14.3)
1999	29157	4354	(14.9)
2000	30898	4392	(14.2)
2001	30900	4057	(13.1)
2002	31073	4141	(13.3)
2003	32808	4421	(13.5)
2004	32215	4730	(14.7)
2005	24659	3640	(14.8)
2006	26674	3821	(14.3)
2007	29401	4217	(14.3)
2008	24895	3646	(14.6)
2009	23009	3086	(13.4)
2010	24130	2713	(11.2)
1996-2001 baseline	31555	4319	(13.7)

* 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 4-6
Percent of All Drivers in Injury Crashes that Involved Alcohol: British Columbia, 1995-2010



5.0 ALBERTA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in Alberta during 2010. 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); and
- trends in the alcohol-crash problem (Section 5.4).

5.1 DEATHS IN ALCOHOL-RELATED CRASHES

Table 5-1 presents information on people who died in alcohol-related crashes in Alberta during 2010. 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. The first data 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, 28 people age 16-19 were killed in motor vehicle crashes in Alberta during 2010. And, in all 28 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. For example, 17 people aged 16-19 died in alcohol-related crashes in Alberta during 2010. The next column expresses this as a percentage – i.e., 60.7% 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 Alberta during 2010.

The totals at the bottom of the table provide a summary. As can be seen, 382 persons died in motor vehicle crashes in Alberta during 2010. In 366 (95.8%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 167 (45.6%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (382 x .456) it can be estimated that *in Alberta during 2010, 174 persons died in alcohol-related crashes*.

5.1.1 Victim age. Of all the people who died in alcohol-related crashes, 29.3% (see last column) were aged 26-35; 18.6% were aged 36-45; 16.2% were aged 20-25; 13.2% were aged 46-55; 10.2% were aged 16-19; 9.6% were over age 55; and 3.0% were under 16.

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 26-35 and 16-19 died (66.2% and 60.7%, respectively). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – 23.2% of persons over 55 and 27.8% of the fatalities under age 16 died in crashes involving alcohol.

Table 5-1
Deaths* in Alcohol-Related Crashes: Alberta, 2010

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	24	18	75.0	5	27.8	3.0
16-19	28	28	100.0	17	60.7	10.2
20-25	64	63	98.4	27	42.9	16.2
26-35	76	74	97.4	49	66.2	29.3
36-45	60	57	95.0	31	54.4	18.6
46-55	58	57	98.3	22	38.6	13.2
>55	72	69	95.8	16	23.2	9.6
Gender						
Male	285	272	95.4	132	48.5	79.0
Female	97	94	96.9	35	37.2	21.0
Type						
Driver/Operator	247	240	97.2	106	44.2	63.5
Passenger	82	79	96.3	32	40.5	19.2
Pedestrian	49	43	87.8	27	62.8	16.2
Unknown	4	4	100.0	2	50.0	1.2
Vehicle Occupied						
Automobiles	115	114	99.1	52	45.6	31.1
Trucks/Vans	151	144	95.4	62	43.1	37.1
Motorcycles	32	32	100.0	12	37.5	7.2
Other Hwy. Vehs.	8	7	87.5	1	14.3	0.6
Offroad Vehicles	27	26	96.3	13	50.0	7.8
(Pedestrians)	49	43	87.8	27	62.8	16.2
TOTAL	382	366	95.8	167	45.6	100.0

*persons dying within 12 months in collisions on and off public roadways

5.1.2 Gender. Of all the people who died in alcohol-related crashes, 79.0% were males. The incidence of alcohol in crashes in which a male died (48.5%) was greater than the incidence of alcohol in crashes in which a female died (37.2%).

5.1.3 Victim type. Of all the people who died in alcohol-related crashes, 63.5% were drivers/operators of a vehicle; 19.2% were passengers; 16.2% were pedestrians; and for 1.2% of the cases, the victim position was unknown.

Within each of the principal victim types, the highest incidence of alcohol involvement (62.8%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 44.2% of the crashes in which a driver/operator died and 40.5% of those in which a passenger died.

5.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 37.1% were in a truck/van; 31.1% were in an automobile; 7.8% were off-road vehicle occupants; 7.2% were motorcyclists; and 0.6% 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 (45.6% versus 43.1% and 37.5%). Among fatally injured off-road vehicle occupants, 50.0% were involved in an alcohol-related crash.

5.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Alberta during 2010. Table 5-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple).

The first data 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%.

Table 5-2
Alcohol Use Among Fatally Injured Drivers: Alberta, 2010

Category of Driver	Number of Drivers*	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
16-19	18	18	100.0	9	50.0	10.5	7	38.9	10.3
20-25	38	38	100.0	13	34.2	15.1	10	26.3	14.7
26-35	51	50	98.0	28	56.0	32.6	20	40.0	29.4
36-45	32	30	93.8	15	50.0	17.4	13	43.3	19.1
46-55	36	34	94.4	13	38.2	15.1	12	35.3	17.6
>55	48	47	97.9	8	17.0	9.3	6	12.8	8.8
Gender									
Male	185	179	96.8	76	42.5	88.4	61	34.1	89.7
Female	38	38	100.0	10	26.3	11.6	7	18.4	10.3
Vehicle Type									
Automobile	82	82	100.0	34	41.5	39.5	25	30.5	36.8
Truck/Van	103	99	96.1	40	40.4	46.5	35	35.4	51.5
Motorcycle	30	29	96.7	12	41.4	14.0	8	27.6	11.8
Tractor Trailer	6	5	83.3	0	0.0	0.0	0	0.0	0.0
Other Vehicle	2	2	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	91	90	98.9	50	55.6	58.1	44	48.9	64.7
Multiple-Vehicle	132	127	96.2	36	28.3	41.9	24	18.9	35.3
TOTAL	223	217	97.3	86	39.6	100.0	68	31.3	100.0

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

To illustrate, among 16-19 year olds there were 18 drivers killed during 2010; all 18 of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, nine (50.0%) were positive for alcohol. This means that 16-19 year old fatally injured drinking drivers accounted for 10.5% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that seven of the 18 (38.9%) fatally injured 16-19 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that seven of the nine 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 10.3% of all the drivers with BACs over the legal limit.

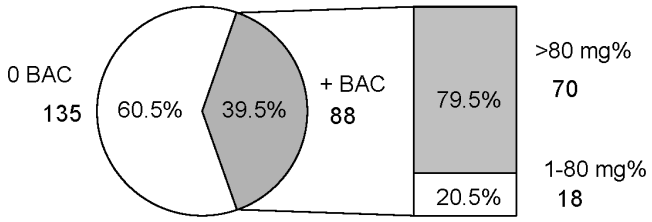
The main findings are shown by the totals at the bottom of the table. Alberta had a very high testing rate in 2010, with 97.3% of fatally injured drivers being tested for alcohol use.

In Alberta, 39.6% had been drinking and 68 of 86 (79.1%) 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:

- 60.4% had BACs of zero mg%;
- 5.5% had BACs from 1-49 mg%;
- 2.8% had BACs from 50-80 mg%
- 10.6% had BACs from 81 to 160 mg%; and,
- 20.7% 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, 88 of 223 (39.5%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 70 (79.5%) have BACs over 80 mg%.

Figure 5-1
BACs** Among Fatally Injured Drivers*: Alberta, 2010



* 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), 32.6% were aged 26-35; 17.4% were aged 36-45; 15.1% were aged 20-25 and 46-55; 10.5% were aged 16-19; and 9.3% were over age 55.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 29.4% were aged 26-35; 19.1% were aged 36-45; 17.6% were aged 46-55; 14.7% were aged 20-25; and 10.3% were over aged 16-19. Of the fatally injured drivers who were over the legal limit, 8.8% were over age 55.

Within each of the age groups, fatally injured drivers aged 26-35 were the most likely to have been drinking – 56.0% of drivers in this age group had been drinking. By contrast, only 17.0% of the tested drivers over age 55 had been drinking.

5.2.2 Gender differences. Males dominate the picture – they account for 88.4% of all the fatally injured drivers who had been drinking, and 89.7% 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 (185 of the 223 or 83.0% of the fatalities are males). Fatally injured male drivers were more likely to have been drinking than female drivers (42.5% and 26.3%, respectively). And, 80.3% of the male and 70.0% 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), 46.5% were truck/van drivers; 39.5% were automobile drivers; and 14.0% were motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 51.5% were truck/van drivers, 36.8% were automobile drivers; and 11.8% were motorcyclists.

Within each of the vehicle types, 41.5% of fatally injured automobile drivers, 41.4% of motorcyclists, and 40.4% of truck/van drivers had been drinking. None of the fatally injured tractor-trailer drivers had been drinking.

5.2.4 Collision differences. Two-fifths of the drivers killed (91 of the 223) were involved in single-vehicle collisions but these crashes accounted for three-fifths of the drivers who had been drinking or were legally impaired (58.1% and 64.7%, 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 (55.6%) were positive for alcohol, compared to only 28.3% of those involved in multiple-vehicle collisions.

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 2010 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 data 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.

Table 5-3
Drivers in Alcohol-Related Serious Injury Crashes:
Alberta, 2010

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	27	5	18.5	0.7
16-19	315	70	22.2	10.0
20-25	590	145	24.6	20.8
26-35	818	185	22.6	26.5
36-45	681	123	18.1	17.6
46-55	630	91	14.4	13.0
>55	654	61	9.3	8.7
unknown	63	18	28.6	2.6
Gender				
Male	2574	537	20.9	76.9
Female	1147	147	12.8	21.1
unknown	57	14	24.6	2.0
Vehicle Type				
Auto	1446	279	19.3	40.0
Truck/Van	1721	296	17.2	42.4
Motorcycle	247	48	19.4	6.9
Tractor Trailer	107	14	13.1	2.0
Other Hwy. Vehicle	43	4	9.3	0.6
Off-Road	189	51	27.0	7.3
Unknown	25	6	24.0	0.9
Collision Type				
Single-Vehicle	1141	470	41.2	67.3
Multiple-Vehicle	2637	228	8.6	32.7
TOTAL	3778	698	18.5	100.0

As shown, by the totals at the bottom of the table, 3,778 drivers were involved in crashes in which someone was seriously injured, and among these 18.5% were alcohol-related crashes.

5.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 26.5% were aged 26-35, 20.8% were aged 20-25; and 17.6% were aged 36-45. Drivers under 16 and over 55 accounted for only 0.7% and 8.7%, respectively, of those involved in alcohol-related serious injury crashes.

Within each of the age groups, almost one-quarter of the drivers aged 20-25 were involved in alcohol-related serious injury crashes (24.6%). The lowest incidence of involvement in alcohol-related crashes was found for those over 55 (9.3%).

5.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 76.9% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (20.9% and 12.8%, respectively).

5.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 42.4% were truck/van drivers; 40.0% were automobile drivers; 7.3% were off-road vehicle drivers; 6.9% were motorcyclists; and 0.6% were drivers of other highway vehicles.

The highest incidence of involvement in alcohol-related serious injury crashes was found for off-road vehicle drivers – 27.0% of these drivers were in crashes that involved alcohol, compared to 19.4% for motorcyclists; 19.3% for automobile drivers; 17.2% for truck/van drivers; and 13.1% for tractor-trailer drivers. Among drivers of other highway vehicles, 9.3% were involved in alcohol-related crashes.

5.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 67.3% 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 – 41.2% of these drivers, compared to only 8.6% for drivers involved in multiple-vehicle crashes.

5.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. Alberta's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

5.4.1 Deaths in alcohol-related crashes: 1995-2010. Table 5-4 and Figure 5-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to

2010. 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 5-4

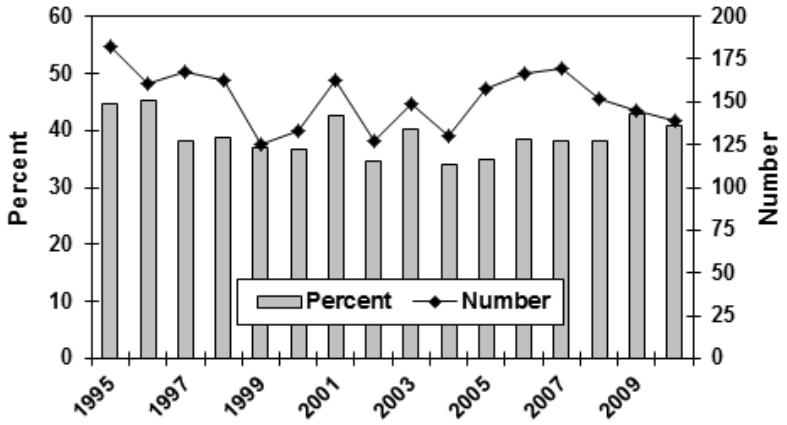
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Alberta, 1995-2010

Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	406	182	44.8
1996	357	161	45.1
1997	440	168	38.2
1998	422	163	38.6
1999	337	125	37.1
2000	362	133	36.7
2001	382	163	42.7
2002	368	127	34.5
2003	370	149	40.3
2004	382	130	34.0
2005	451	158	35.0
2006	436	167	38.3
2007	447	170	38.0
2008	400	152	38.0
2009	337	145	43.0
2010	340	139	40.9
1996-2001 baseline	383	152	39.7

* 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 5-2
Number and Percent of Deaths Involving a Drinking Driver: Alberta, 1995-2010



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 a low of 125 in 1999. The number fluctuated between 1999 and 2004, increased to 170 in 2007, and dropped to 139 in 2010. The percentage of alcohol-related fatalities generally decreased from a high of 45.1% in 1996 to a low of 34.0% in 2004, rose to 38.3% in 2006, decreased slightly to 38.0% in 2007, remained at this level in 2008, rose to 43.0% in 2009; and decreased again to 40.9% in 2010.

As shown at the bottom of the table, during the 1996-2001 baseline period, there was an average of 152 fatalities involving a drinking driver and they accounted for 39.7% of all fatalities. Thus, it can be seen that the percent of fatalities involving a drinking driver increased by 3.0% from 39.7% in the baseline period (1996-2001) to 40.9% in 2010. However, in terms of the number of persons killed in crashes involving a drinking driver, there has been an 8.0% decrease from an average of 152 in the baseline period (1996-2001) to 139 in 2010.

5.4.2 Fatally injured drivers: Data on alcohol use among fatally injured drivers over the 24-year period from 1987-2010 are shown in Table 5-5. 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.

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, and decreased again to 33.9% in 2010. 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%) and decreased again in 2010 (58.3%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1988 (9.3%), fell to its lowest mark in 2001 (3.1%), rose in 2003 (7.0%), decreased in 2005 (4.0%), rose in 2006 (4.8%), remained at that level in 2007 (4.8%), decreased slightly in 2008 (4.6%), and rose again in 2010 (7.8%).

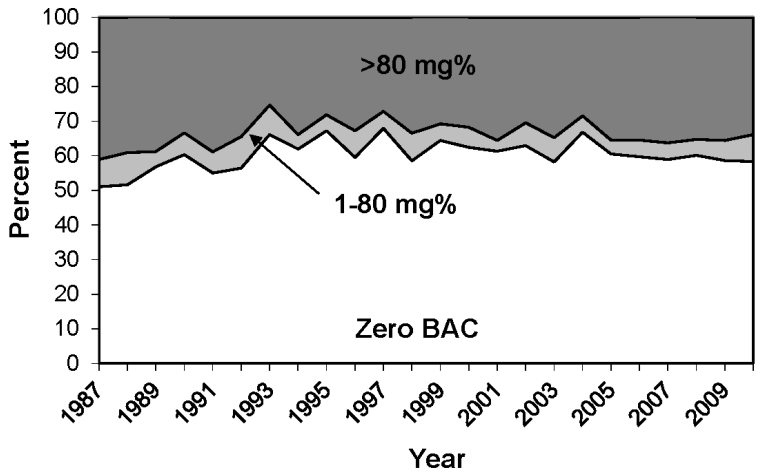
Table 5-5

Alcohol Use Among Fatally Injured Drivers:
Alberta, 1987-2010

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Grouped by BAC (mg%) 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
1996-2001 baseline	195	191	97.9	119	62.3	11	5.8	61	31.9

* dying in less than six hours.

Figure 5-3
Trends in Alcohol Use Among Driver Fatalities: Alberta, 1987-2010



When compared to the 1996-2001 baseline period, the percentage of fatally injured drivers with zero BACs in 2010 decreased by 6.5% (from 62.3% to 58.3%). Among drivers with BACs from 1-80 mg%, there was a 34.5% increase (from 5.8% to 7.8%). Among drivers with BACs over 80 mg%, there was a 6.3% increase (from 31.9% to 33.9%).

Table 5-6 and Figure 5-4 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 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 in Table 5-6, the baseline percentage of fatally injured drivers testing positive for alcohol from 1996-2001 is 36.1%. In 2010, 39.5% of fatally injured drivers tested positive for alcohol, a 9.4% increase from the baseline period.

5.4.3 Drivers in serious injury crashes: Table 5-7 and Figure 5-5 show information on drivers involved in alcohol-related serious injury crashes. As shown in Table 5-7, during the baseline period (1996-2001), an average of 23.0% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 18.5% in 2010, a 19.6% decrease in the problem.

Table 5-6

Alcohol Use Among Fatally Injured Drivers*:
Alberta, 1990-2010

YEAR	Number of Drivers*	Drivers Grouped by BAC (mg%) Zero	(% Tested)	Positive	(% Tested)
1990	231	138	(59.7)	93	(40.3)
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)
1996-2001 baseline	227	145	(63.9)	82	(36.1)

* 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, 1990-2010

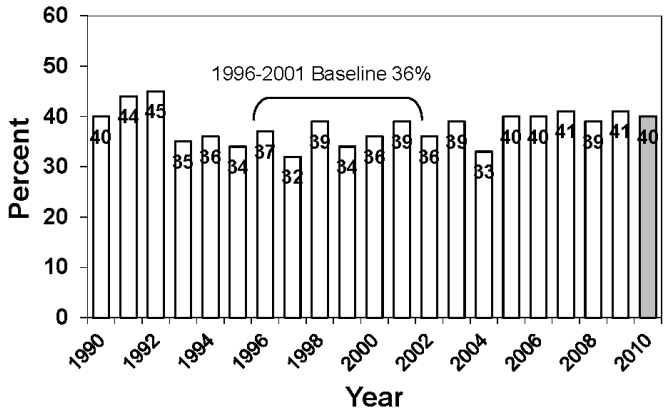


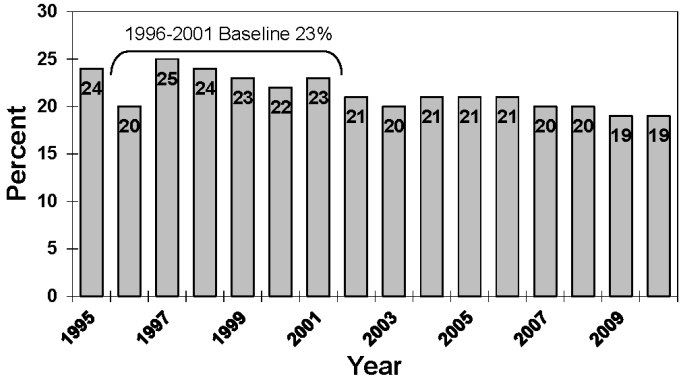
Table 5-7

Number and Percent of All Drivers in Serious Injury Crashes * that Involved Alcohol: Alberta, 1995-2010

Year	Number of Drivers	Alcohol Related Number	%
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)
1996-2001 baseline	3294	759	(23.0)

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

Figure 5-5
Percent of All Drivers Serious Injury Crashes that Involved Alcohol*: Alberta, 1995-2010



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

Table 5-8 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 5-7 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 2003 the percentage of drivers in serious injury crashes that involved alcohol dropped from 24.4% to 20.3%, rose to 20.7% in 2004, declined slightly to 20.6% in 2005, rose to 21.8% in 2006, and decreased again to 18.0% in 2010.

As shown Table 5-8, in the baseline period (1996-2001) an average of 23.3% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes decreased to 18.0%, a 22.7% decrease.

Table 5-8

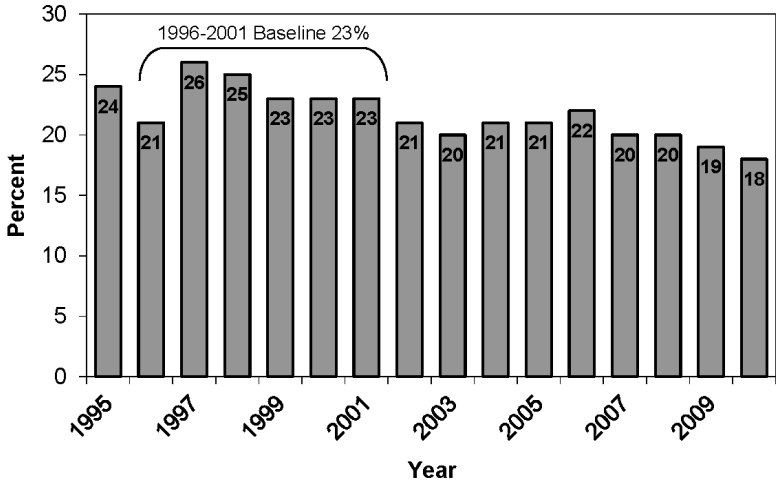
Number and Percent of All Drivers* in Serious Injury Crashes **
that Involved Alcohol: Alberta, 1995-2010

Year	Number of Drivers	Alcohol Related	
		Number	%
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)
1996-2001 baseline	3212	749	(23.3)

* 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 5-6
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Alberta, 1995-2010



6.0 SASKATCHEWAN

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in Saskatchewan during 2010. 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); and
- trends in the alcohol-crash problem (Section 6.4).

6.1 DEATHS IN ALCOHOL-RELATED CRASHES

Table 6-1 presents information on people who died in alcohol-related crashes in Saskatchewan during 2010. 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. The first data 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, 25 people aged 16-19 were killed in motor vehicle crashes in Saskatchewan during 2010. And, in 22 cases (88.0%) 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. For example, 13 people aged 16-19 died in alcohol-related crashes in Saskatchewan during 2010. The next column expresses this as a percentage – i.e., 59.1% 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 14.9% of all the people killed in alcohol-related crashes in Saskatchewan during 2010.

The totals at the bottom of the table provide a summary. As can be seen, 186 persons died in motor vehicle crashes in Saskatchewan during 2010. In 175 (94.1%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 87 (49.7%) involved alcohol.

Extrapolating this figure to the total number of motor vehicle fatalities (186 x .497) it can be estimated that *in Saskatchewan during 2010, 92 persons died in alcohol-related crashes*.

6.1.1 Victim age. Of all the people who died in alcohol-related crashes, 33.3% (see last column) were aged 20-25; 16.1% were aged 26-35; 14.9% were aged 16-19; 12.6% were over age 55; 10.3% were aged 36-45; 9.2% were aged 46-55; and 3.4% were under 16.

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 20-25 and 16-19 died (82.9% and 59.1%, respectively).

Table 6-1
Deaths* in Alcohol-Related Crashes: Saskatchewan, 2010

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	14	11	78.6	3	0.0	3.4
16-19	25	22	88.0	13	59.1	14.9
20-25	35	35	100.0	29	82.9	33.3
26-35	24	24	100.0	14	58.3	16.1
36-45	23	21	91.3	9	42.9	10.3
46-55	18	18	100.0	8	44.4	9.2
>55	47	44	93.6	11	25.0	12.6
Gender						
Male	128	118	92.2	62	52.5	71.3
Female	58	57	98.3	25	43.9	28.7
Type						
Driver/Operator	115	110	95.7	49	44.5	56.3
Passenger	50	48	96.0	26	54.2	29.9
Pedestrian	21	17	81.0	12	70.6	13.8
Vehicle Occupied						
Automobiles	73	69	94.5	29	42.0	33.3
Trucks/Vans	69	68	98.6	39	57.4	44.8
Motorcycles	5	5	100.0	3	60.0	3.4
Other Hwy. Vehs.	3	3	100.0	0	0.0	0.0
Offroad Vehicles	15	13	86.7	4	30.8	4.6
(Pedestrians)	21	17	81.0	12	70.6	13.8
TOTAL	186	175	94.1	87	49.7	100.0

*persons dying within 12 months in collisions on and off public roadways

The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – 0.0% of persons under 16 and 25.0% 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, 71.3% were males. The incidence of alcohol in crashes in which male died (52.5%) was greater than the incidence of alcohol in crashes in which a female died (43.9%).

6.1.3 Victim type. Of all the people who died in alcohol-related crashes, 56.3% were drivers/operators of a vehicle; 29.9% were passengers; and 13.8% were pedestrians.

Within each of the principal victim types, the highest incidence of alcohol involvement (70.6%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 54.2% of the crashes in which a passenger died and 44.5% 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, 44.8% were truck/van occupants; 33.3% were automobile occupants; 4.6% were off-road vehicle occupants; and 3.4% were motorcyclists.

Within each of these vehicle types, the incidence of alcohol involvement in which a motorcyclist died was greater than the incidence of alcohol crashes in which a truck/van occupant, automobile occupant or off-road vehicle occupant died (60.0% versus 57.4%, 42.0% and 30.8%).

6.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Saskatchewan during 2010. Table 6-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple).

Table 6-2
Alcohol Use Among Fatally Injured Drivers: Saskatchewan, 2010

Category of Driver	Number of Drivers*	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
<20**	12	10	83.3	5	50.0	12.2	4	40.0	11.4
20-25	15	14	93.3	13	92.9	31.7	11	78.6	31.4
26-35	17	17	100.0	10	58.8	24.4	9	52.9	25.7
36-45	13	11	84.6	2	18.2	4.9	2	18.2	5.7
46-55	14	14	100.0	5	35.7	12.2	3	21.4	8.6
>55	29	26	89.7	6	23.1	14.6	6	23.1	17.1
Gender									
Male	67	63	94.0	29	46.0	70.7	25	39.7	71.4
Female	33	29	87.9	12	41.4	29.3	10	34.5	28.6
Vehicle Type									
Automobile	45	41	91.1	16	39.0	39.0	14	34.1	40.0
Truck/Van	47	43	91.5	22	51.2	53.7	19	44.2	54.3
Motorcycle	5	5	100.0	3	60.0	7.3	2	40.0	5.7
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
Collision Type									
Single-Vehicle	46	43	93.5	29	67.4	70.7	25	58.1	71.4
Multiple-Vehicle	54	49	90.7	12	24.5	29.3	10	20.4	28.6
TOTAL	100	92	92.0	41	44.6	100.0	35	38.0	100.0

* 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 driver will not be identified.

The first data 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 15 drivers killed during 2010; 14 of these fatally injured drivers (93.3%) were tested for alcohol. Of those who were tested, 13 (92.9%) were positive for alcohol. This means that fatally injured drinking drivers aged 20-25 accounted for 31.7% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that 11 of the 14 (78.6%) fatally injured drivers aged 20-25 who were tested for alcohol had BACs in excess of 80 mg%. This means that 11 of

the 13 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 31.4% of all the drivers with BACs over the legal limit.

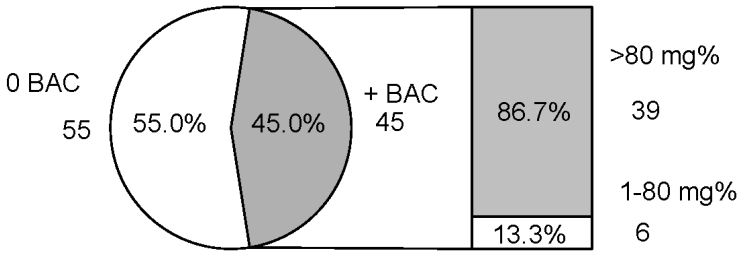
The main findings are shown by the totals at the bottom of the table. Saskatchewan had a very high testing rate in 2010, with 92.0% of fatally injured drivers being tested for alcohol use.

In Saskatchewan, 44.6% had been drinking and 35 of 41 (85.4%) 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:

- 55.4% had BACs of zero mg%;
- 5.4% had BACs from 1-49 mg%;
- 1.1% had BACs from 50-80 mg%
- 6.5% had BACs from 81 to 160 mg%; and,
- 31.5% 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 45 of 100 (45.0%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 39 (86.7%) have BACs over 80 mg%.

Figure 6-1
BACs** Among Fatally Injured Drivers*: Saskatchewan, 2010



* 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), 31.7% were aged 20-25; 24.4% were aged 26-35, 14.6% were over age 55, 12.2% were aged under 20 (a grouping of under 16 year olds and 16-19 year olds so that an individual driver will not be identified) and 46-55; and 4.9% were aged 36-45.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 31.4% were aged 20-25; 25.7% were aged 26-35; 17.1% were aged over 55; 11.4% were aged under 20; 8.6% were aged 46-55; and 5.7% were aged 36-45.

Within each of the age groups, fatally injured drivers aged 20-25 were the most likely to have been drinking – 92.9% of drivers in this age group had been drinking. By contrast, only 18.2% of the tested drivers aged 36-45 had been drinking.

6.2.2 Gender differences. Males dominate the picture – they account for 70.7% of all the fatally injured drivers who had been drinking, and 71.4% 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 (67 of the 100 fatalities are males). Fatally injured male drivers were more likely to have been drinking than female drivers (46.0% and 41.4%, respectively). And, 86.2% of the male and 83.3% 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), 53.7% were truck/van drivers; 39.0% were automobile drivers; and 7.3% were motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 54.3% were truck/van drivers, 40.0% were automobile drivers; and 5.7% were motorcyclists.

Within each of the vehicle types, 60.0% of fatally injured motorcyclists, 51.2% of truck/van drivers, and 39.0% of automobile drivers were found to have been drinking. Neither of the tractor-trailer drivers had been drinking.

6.2.4 Collision differences. Slightly less than half of the drivers killed (46 of the 100) 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 (70.7% and 71.4%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Over two-thirds of the drivers involved in single-vehicle crashes (67.4%) were positive for alcohol, compared to only 24.5% of those involved in multiple-vehicle collisions.

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 2010 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 data 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, 528 drivers were involved in crashes in which someone was seriously injured, and among these 29.2% were alcohol-related crashes.

6.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 26.0% were aged 20-25, 23.4% were aged 26-35; and 13.6% were aged 16-19. Drivers under 16 and over 55 accounted for only 0.0% and 9.7% respectively of those involved in alcohol-related serious injury crashes.

Table 6-3
Drivers in Alcohol-Related Serious Injury Crashes:
Saskatchewan, 2010

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	5	0	0.0	0.0
16-19	50	21	42.0	13.6
20-25	87	40	46.0	26.0
26-35	96	36	37.5	23.4
36-45	79	17	21.5	11.0
46-55	82	14	17.1	9.1
>55	109	15	13.8	9.7
unknown	20	11	55.0	7.1
Gender				
Male	359	104	29.0	67.5
Female	151	39	25.8	25.3
unknown	18	11	61.1	7.1
Vehicle Type				
Auto	200	75	37.5	48.7
Truck/Van	222	58	26.1	37.7
Motorcycle	37	5	13.5	3.2
Tractor Trailer	28	4	14.3	2.6
Other Hwy. Vehicle	5	0	0.0	0.0
Off-Road	34	10	29.4	6.5
Unknown	2	2	100.0	1.3
Collision Type				
Single-Vehicle	197	85	43.1	55.2
Multiple-Vehicle	331	69	20.8	44.8
TOTAL	528	154	29.2	100.0

Within each of the age groups, over two-fifths of the drivers aged 20-25 and 16-19 were involved in alcohol-related serious injury crashes (46.0% and 42.0%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for those under 16 and over 55 (0.0% and 13.8%, respectively).

6.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 67.5% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (29.0% and 25.8%, respectively).

6.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 48.7% were automobile drivers; 37.7% were truck/van drivers; 6.5% were off-road vehicle drivers; 3.2% were motorcyclists; and 2.6% were tractor-trailer drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers – 37.5% of these drivers were in crashes that involved alcohol, compared to 29.4% for off-road vehicle drivers; 26.1% for truck/van drivers; 14.3% for tractor-trailer drivers; and 13.5% for motorcyclists.

6.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 55.2% 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 – 43.1% of these drivers, compared to only 20.8% for drivers involved in multiple-vehicle crashes.

6.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. Saskatchewan's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem by 2010 is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

6.4.1 Deaths in alcohol-related crashes: 1995-2010. Table 6-4 and Figure 6-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2010. 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 6-4

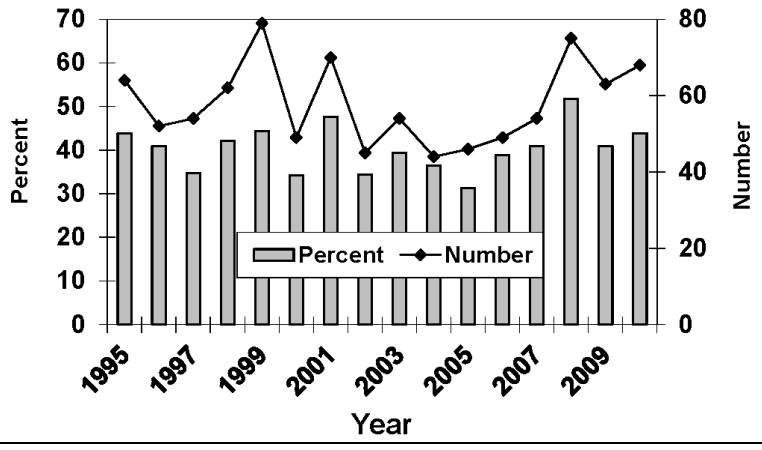
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Saskatchewan, 1995-2010

Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	146	64	43.8
1996	127	52	40.9
1997	155	54	34.8
1998	147	62	42.2
1999	178	79	44.4
2000	143	49	34.3
2001	147	70	47.6
2002	131	45	34.4
2003	137	55	40.1
2004	121	44	36.4
2005	147	46	31.3
2006	126	49	38.9
2007	132	54	40.9
2008	145	74	51.0
2009	155	63	40.6
2010	155	68	43.9
1996-2001 baseline	150	61	40.7

* 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 6-2
Number and Percent of Deaths Involving a Drinking Driver: Saskatchewan, 1995-2010



As shown in the table and figure, the number of deaths in crashes that involved a drinking driver generally rose from 64 in 1995 to 79 in 1999. The number of alcohol-related fatalities rose from a low of 44 in 2004, increased to 74 in 2008, decreased to 63 in 2009, and rose again to 68 in 2010. The percentage of alcohol-related fatalities generally decreased from 43.8% in 1995 to a low of 31.3% in 2005, rose to a high of 51.0% in 2008, decreased to 40.6% in 2009, and rose again to 43.9% in 2010.

As shown at the bottom of the table, during the 1996-2001 baseline period there was an average of 61 fatalities involving a drinking driver and they accounted for 40.7% of all fatalities. This means that the percent of fatalities involving a drinking driver increased by 7.9% from 40.7% in the baseline period (1996-2001) to 43.9% in 2010. And, in terms of the number of persons killed in crashes involving a drinking driver, there has been an 11.5% increase from an average of 61 in the baseline period (1996-2001) to 68 in 2010.

6.4.2 Fatally injured drivers: Data on alcohol use among fatally injured drivers over the 24-year period from 1987-2010 are shown in Table 6-5. 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.

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 decreased again in 2010 (36.9%). The percent of fatally injured drivers with zero BACs increased from 1987 (40.0%) to its highest mark in 2000 (65.7%), fluctuated until 2004 (56.7%), rose in 2005 (61.3%), remained stable until 2007 (61.4%), declined in 2008 (45.8%), and rose again in 2010 (58.3%). The percent of fatally injured drivers with BACs between 1 and 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%), decreased in 2008 (4.8%), rose in 2009 (5.4%), and decreased again in 2010 (4.8%).

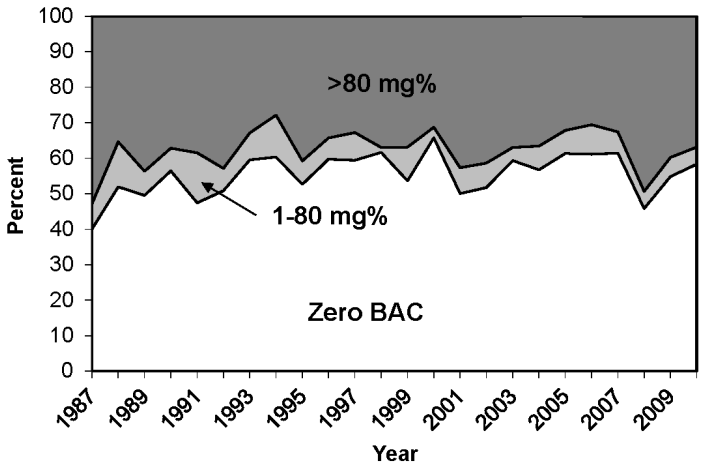
Table 6-5

Alcohol Use Among Fatally Injured Drivers:
Saskatchewan, 1987-2010

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Grouped by BAC (mg%) Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	94	85	90.4	34	40.0	6	7.1	45	52.9
1988	81	79	97.5	41	51.9	10	12.7	28	35.4
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
1996-2001 baseline	76	73	(96.1)	42	(57.5)	5	(6.8)	26	(35.6)

* dying in less than six hours.

Figure 6-3
Trends in Alcohol Use Among Driver Fatalities: Saskatchewan, 1987-2010



When compared to the 1996-2001 baseline period shown at the bottom of Table 6-5, the percentage of fatally injured drivers with zero BACs in 2009 decreased by 4.7% (from 57.5% to 54.8%). Among drivers with BACs from 1-80 mg%, there was a 20.6% decrease (from 6.8% to 5.4%). And among those with BACs over 80 mg%, there was an 11.8% increase (from 35.6% to 39.8%).

Table 6-6 and Figure 6-4 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 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 6-6, the percentage of fatally injured drivers testing positive for alcohol from 1996-2001, the baseline period, is 41.9%. In 2010, 45.0% of fatally injured drivers tested positive for alcohol, a 7.4% increase from the baseline period.

6.4.3 Drivers in serious injury crashes: Table 6-7 and Figure 6-5 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (1996-2001), an average of 25.5% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 29.2% in 2010, a 14.5% increase in the problem.

Table 6-8 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 6-7 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%, dropped to 25.4% in 2004, rose to 27.5% in 2005, declined slightly to 26.8% in 2006, peaked at 33.2% in 2008, decreased to 27.7% in 2009, and rose again to 28.9% in 2010.

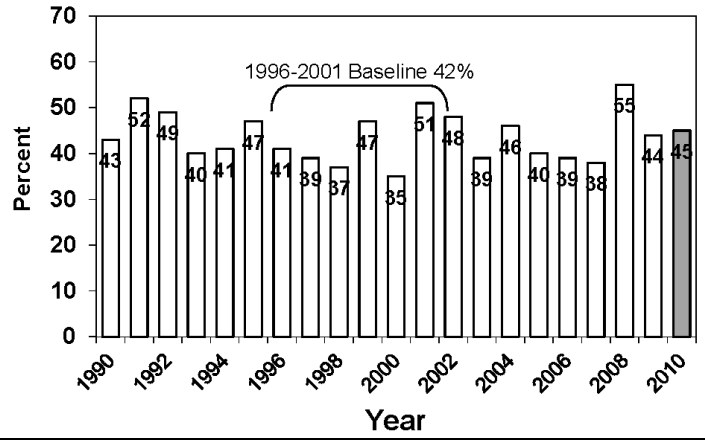
Table 6-6

Alcohol Use Among Fatally Injured Drivers*:
Saskatchewan, 1990-2010

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)
1996-2001 baseline	86	50	(58.1)	36	(41.9)

* 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, 1990-2010



In the baseline period (1996-2001), an average of 25.8% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes rose to 28.9%, a 12.0% increase.

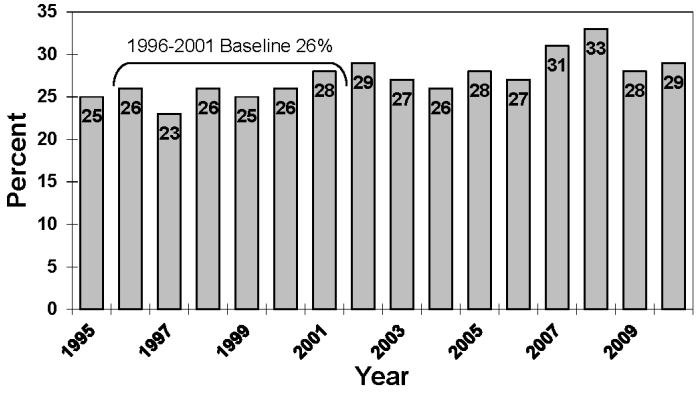
Table 6-7

Number and Percent of All Drivers in Serious Injury Crashes * that Involved Alcohol: Saskatchewan, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	748	191	(25.5)

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

Figure 6-5
Percent of All Drivers Serious Injury Crashes that Involved Alcohol*: Saskatchewan, 1995-2010



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

Table 6-8

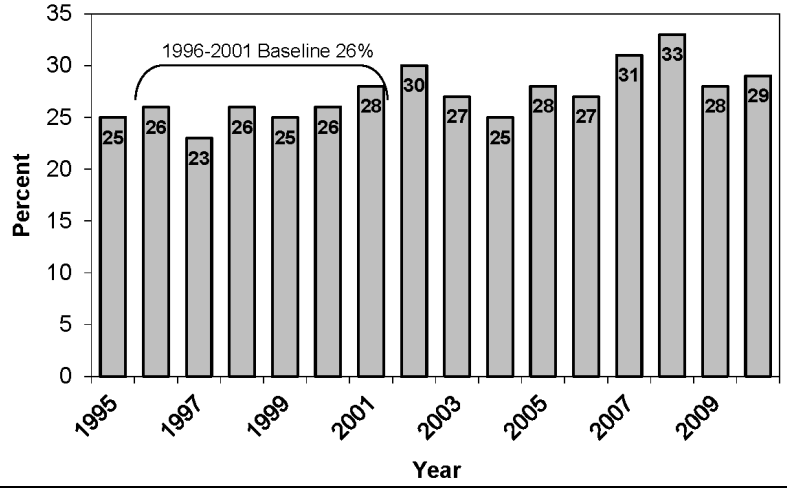
Number and Percent of All Drivers* in Serious Injury Crashes ** that Involved Alcohol: Saskatchewan, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	706	182	(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 6-6
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Saskatchewan, 1995-2010



7.0 MANITOBA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in Manitoba during 2010. 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); and
- trends in the alcohol-crash problem (Section 7.4).

7.1 DEATHS IN ALCOHOL-RELATED CRASHES

Table 7-1 presents information on people who died in alcohol-related crashes in Manitoba during 2010. 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. The first data 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, 11 people age 16-19 were killed in motor vehicle crashes in Manitoba during 2010. And, in all 11 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. For example, nine people aged 16-19 died in alcohol-related crashes in Manitoba during 2010. The next column expresses this as a percentage – i.e., 81.8% 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 19.6% of all the people killed in alcohol-related crashes in Manitoba during 2010.

The totals at the bottom of the table provide a summary. As can be seen, 98 persons died in motor vehicle crashes in Manitoba during 2010. In 93 (94.9%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 46 (49.5%) involved alcohol.

Extrapolating this figure to the total number of motor vehicle fatalities (98 x .478) it can be estimated that *in Manitoba during 2010, 48 persons died in alcohol-related crashes*.

7.1.1 Victim age. Of all the people who died in alcohol-related crashes, 23.9% (see last column) were aged 20-25; 19.6% were aged 16-19 and 36-45; 13.0% were aged 26-35 and 46-55; 6.5% were over age 55; and 4.3% were under 16.

Table 7-1
Deaths* in Alcohol-Related Crashes: Manitoba, 2010

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	7	7	100.0	2	28.6	4.3
16-19	11	11	100.0	9	81.8	19.6
20-25	15	14	93.3	11	78.6	23.9
26-35	12	11	91.7	6	54.5	13.0
36-45	15	15	100.0	9	60.0	19.6
46-55	16	16	100.0	6	37.5	13.0
>55	22	19	86.4	3	15.8	6.5
Gender						
Male	62	60	96.8	35	58.3	76.1
Female	36	33	91.7	11	33.3	23.9
Type						
Driver/Operator	56	55	98.2	29	52.7	63.0
Passenger	25	24	96.0	12	50.0	26.1
Pedestrian	17	14	82.4	5	35.7	10.9
Vehicle Occupied						
Automobiles	43	42	97.7	21	50.0	45.7
Trucks/Vans	24	23	95.8	12	52.2	26.1
Motorcycles	3	3	100.0	1	33.3	2.2
Offroad Vehicles	11	11	100.0	7	63.6	15.2
(Pedestrians)	17	14	82.4	5	35.7	10.9
TOTAL	98	93	94.9	46	49.5	100.0

*persons dying within 12 months in collisions on and off public roadways

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 16-19 and 20-25 died (81.8% and 78.6%, respectively). The lowest incidence of alcohol involvement was found among the oldest fatalities – only 15.8% 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, 76.1% were males. The incidence of alcohol in crashes in which male died (58.3%) was greater than the incidence of alcohol in crashes in which a female died (33.3%).

7.1.3 Victim type. Of all the people who died in alcohol-related crashes, 63.0% were drivers/operators of a vehicle; 26.1% were passengers; and 10.9% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (52.7%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 50.0% of the crashes in which a passenger died and 35.7% of those in which a pedestrian died.

7.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 45.7% were in an automobile; 26.1% were in a truck/van; 15.2% were off-road vehicle occupants; and 2.2% 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 (52.2% versus 50.0% and 33.3%). Among off-road vehicle occupants, 63.6% died in an alcohol-related crash.

7.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Manitoba during 2010. Table 7-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple).

Table 7-2
Alcohol Use Among Fatally Injured Drivers: Manitoba, 2010

Category of Driver	Number of Drivers*	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
<16	1	1	100.0	0	0.0	0.0	0	0.0	0.0
16-19	3	3	100.0	2	66.7	11.1	2	66.7	14.3
20-25	8	8	100.0	6	75.0	33.3	4	50.0	28.6
26-35	7	7	100.0	3	42.9	16.7	3	42.9	21.4
36-45	8	8	100.0	4	50.0	22.2	3	37.5	21.4
46-55	10	10	100.0	3	30.0	16.7	2	20.0	14.3
>55	8	5	62.5	0	0.0	0.0	0	0.0	0.0
Gender									
Male	35	33	94.3	17	51.5	94.4	13	39.4	92.9
Female	10	9	90.0	1	11.1	5.6	1	11.1	7.1
Vehicle Type									
Automobile	27	25	92.6	9	36.0	50.0	7	28.0	50.0
Truck/Van	16	15	93.8	8	53.3	44.4	7	46.7	50.0
Motorcycle	2	2	100.0	1	50.0	5.6	0	0.0	0.0
Collision Type									
Single-Vehicle	22	21	95.5	14	66.7	77.8	10	47.6	71.4
Multiple-Vehicle	23	21	91.3	4	19.0	22.2	4	19.0	28.6
TOTAL	45	42	93.3	18	42.9	100.0	14	33.3	100.0

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

The first data 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 three drivers killed during 2010; all three of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, two (66.7%) were positive for alcohol. This means fatally injured drinking drivers aged 16-19 accounted for 11.1% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that two of the three (66.7%) fatally injured drivers aged 16-19 who were tested for alcohol had BACs in excess of 80 mg%. This means that both 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, drivers aged 16-19 accounted for 14.3% of all the drivers with BACs over the legal limit.

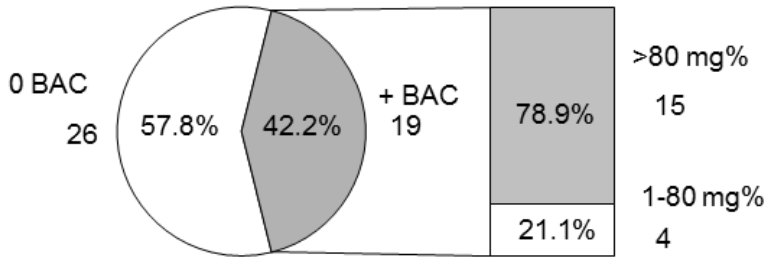
The main findings are shown by the totals at the bottom of the table. Manitoba had a high testing rate in 2010, with 93.3% of fatally injured drivers being tested for alcohol use.

In Manitoba, 42.9% had been drinking and 14 of 18 (77.8%) 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:

- 57.1% had BACs of zero mg%;
- 4.8% had BACs from 1-49 mg%;
- 4.8% had BACs from 50-80 mg%
- 14.3% had BACs from 81 to 160 mg%; and,
- 19.0% 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, 19 of 45 (42.2%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 15 (78.9%) have BACs over 80 mg%.

Figure 7-1
BACs** Among Fatally Injured Drivers*: Manitoba, 2010



* 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), 33.3% were aged 20-25; 22.2% were aged 36-45; 16.7% were aged 26-35 and 46-55; and

11.1% were aged 16-19.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 28.6% were aged 20-25; 21.4% were aged 26-35 and 36-45; and 14.3% were aged 16-19 and 46-55.

Within each of the age groups, fatally injured drivers aged 20-25 were the most likely to have been drinking – 75.0% of drivers in this age group had been drinking. By contrast, 0.0% of the tested drivers over age 55 had been drinking.

7.2.2 Gender differences. Males dominate the picture – they account for 94.4% of all the fatally injured drivers who had been drinking, and 92.9% 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 (35 of the 45 fatalities or 77.8% are males). Fatally injured male drivers were more likely to have been drinking than female drivers (54.5% and 11.1%, respectively). And, 76.5% of the male drivers and 100.0% of the female drivers who were drinking had BACs over the legal limit.

7.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 50.0% were automobile drivers; 44.4% were truck/van drivers; and 5.6% were motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 50.0% were automobile drivers and truck/van drivers.

Within each of the vehicle types, 53.3% of fatally injured truck/van drivers, 50.0% of motorcyclists, and 36.0% of automobile drivers had been drinking.

7.2.4 Collision differences. Slightly less than half of the drivers killed (22 of the 45) were involved in single-vehicle collisions but these crashes accounted for three-quarters of the drivers who had been drinking or were legally impaired (77.8% and 71.4%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Two-thirds of the drivers involved in single-vehicle crashes (66.7%) were positive for alcohol, compared to 19.0% of those involved in multiple-vehicle collisions.

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 2010 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 data 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, 398 drivers were involved in crashes in which someone was seriously injured, and among these 19.6% were alcohol-related crashes.

7.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 23.1% were aged 26-35; 20.5% were over aged 55; and 12.8% were aged 20-25 and 46-55. Drivers aged 16-19 and 36-45 each accounted for 7.7% of those involved in alcohol-related serious injury crashes.

Table 7-3
Drivers in Alcohol-Related Serious Injury Crashes:
Manitoba, 2010

Category of Drivers	Number of Drivers*	Alcohol-Related Number	Alcohol-Related % of total	Alcohol-Related % of all drivers in alcohol-related crashes
Age				
<16	5	0	0.0	0.0
16-19	42	6	14.3	7.7
20-25	47	10	21.3	12.8
26-35	74	18	24.3	23.1
36-45	48	6	12.5	7.7
46-55	51	10	19.6	12.8
>55	71	16	22.5	20.5
unknown	60	12	20.0	15.4
Gender				
Male	231	47	20.3	60.3
Female	120	19	15.8	24.4
unknown	47	12	25.5	15.4
Vehicle Type				
Auto	171	29	17.0	37.2
Truck/Van	142	27	19.0	34.6
Motorcycle	11	3	27.3	3.8
Tractor Trailer	13	2	15.4	2.6
Other Hwy. Vehicle	4	2	50.0	2.6
Off-Road	19	4	21.1	5.1
Unknown	38	11	28.9	14.1
Collision Type				
Single-Vehicle	162	63	38.9	80.8
Multiple-Vehicle	236	15	6.4	19.2
TOTAL	398	78	19.6	100.0

* These numbers are slightly underestimated since 15.7% of all injuries are recorded as unspecified.

Within each of the age groups, almost one-quarter of the drivers aged 26-35 and over 55 were involved in alcohol-related serious injury crashes (24.3% and 22.5%, respectively). 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, 60.3% were males. The incidence of involvement in alcohol-related serious injury crashes was greater for males than for females (20.3% and 15.8%).

7.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 37.2% were automobile drivers; 34.6% were truck/van drivers; 5.1% were off-road

vehicle drivers; 3.8% were motorcyclists; and 2.6% were tractor-trailer drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for drivers of other highway vehicles – 50.0% of these drivers were in crashes that involved alcohol, compared to 22.3% for motorcyclists; 21.1% for off-road vehicle drivers, 19.0% for truck/van drivers; 17.0% for automobile drivers; and 15.4% for tractor-trailer drivers.

7.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 80.8% 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 – 38.9% of these drivers, compared to only 6.4% for drivers involved in multiple-vehicle crashes.

7.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. Manitoba's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem by 2010 is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

7.4.1 Deaths in alcohol-related crashes: 1995-2010. Table 7-4 and Figure 7-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2010. 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.

Table 7-4

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Manitoba, 1995-2010

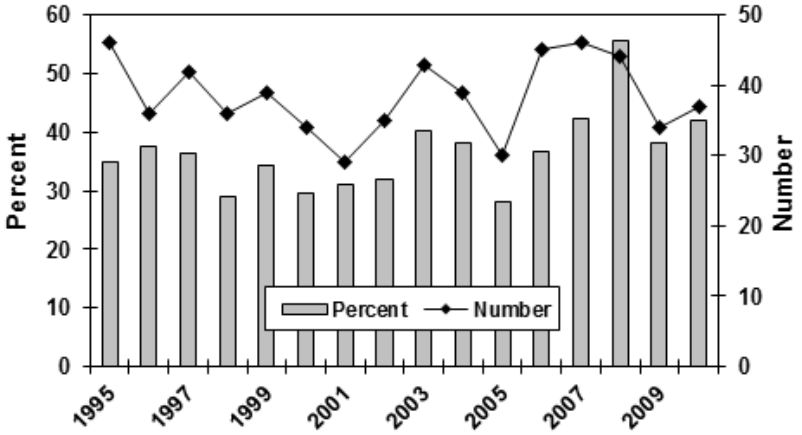
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	132	46	34.8
1996	96	36	37.5
1997	115	42	36.5
1998	124	36	29.0
1999	114	39	34.2
2000	115	34	29.6
2001	94	29	30.9
2002	110	35	31.8
2003	107	43	40.2
2004	102	39	38.2
2005	107	30	28.0
2006	123	45	36.6
2007	109	46	42.2
2008	79	44	55.7
2009	89	34	38.2
2010	88	37	42.0
1996-2001 baseline	110	36	32.7

* 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 7-2

Number and Percent of Deaths Involving
a Drinking Driver: Manitoba, 1995-2010



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 increased to 43 in 2003, decreased to 30 in 2005, rose to 46 in 2007, decreased to 34 in 2009 and rose to 37 in 2010. The percentage of alcohol-related fatalities increased from 34.8% in 1995 to 37.5% in 1996. In 1998, the percentage of alcohol-related fatalities in Manitoba decreased 29.0%, rose to 34.2% in 1999, decreased to 29.6% in 2000, rose to 40.2% in 2003, decreased to a low of 28.0% in 2005, reached a high of 55.7% in 2008, decreased to 38.2% in 2009, and rose again to 42.0% in 2010.

As shown at the bottom of the table, during the 1996-2001 baseline period there was an average of 36 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 increased by 28.4% from 32.7% in the baseline period (1996-2001) to 42.0% in 2010. In terms of the number of persons killed in crashes involving a drinking driver, there has been a 2.8% increase from an average of 36 in the baseline period (1996-2001) to 37 in 2010.

7.4.2 Fatally injured drivers: Data on alcohol use among fatally injured drivers over the 24-year period from 1987-2010 are shown in Table 7-5. 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.

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, rose in 2008 (45.2%), decreased in 2009 (30.4%), and rose again in 2010 (35.9%). 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%), rose in 2009 (57.1%), and decreased in 2010 (53.8%). 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, increased in 2003 (7.5%), decreased in 2005 (2.1%), rose in 2008 (16.7%), and decreased again in 2010 (10.3%).

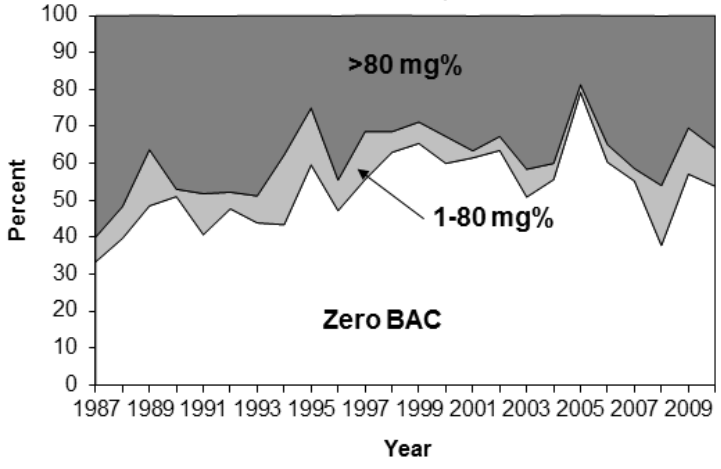
Table 7-5

Alcohol Use Among Fatally Injured Drivers:
Manitoba, 1987-2010

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Grouped by BAC (mg%) 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
1996-2001 baseline	52	51	(98.1)	30	(58.8)	4	(7.8)	17	(33.3)

* dying in less than six hours.

Figure 7-3
Trends in Alcohol Use Among Driver Fatalities: Manitoba, 1987-2010



When compared to the 1996-2001 baseline period shown at the bottom of Table 7-5, the percentage of fatally injured drivers with zero BACs in 2010 decreased by 8.5% (from 58.8% to 53.8%). Among drivers with BACs from 1-80 mg%, there was a 32.1% increase (from 7.8% to 10.3%) and among those with BACs over 80 mg%, there was a 7.8% increase (from 33.3% to 35.9%).

Table 7-6 and Figure 7-4 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 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 7-6, the percentage of fatally injured drivers testing positive for alcohol from 1996-2001, the baseline period, is 40.3%. In 2010 42.2% of fatally injured drivers tested positive for alcohol, a 4.7% increase from the baseline period.

7.4.3 Drivers in serious injury crashes: Table 7-7 and Figure 7-5 show information on drivers involved in alcohol-related serious injury crashes. As shown in Table 7-7, during the baseline period (1996-2001), an average of 21.3% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 19.6% in 2010, an 8.0% decrease in the problem.

Table 7-8 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 7-7 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 19.1% in 2005, decreased to 17.3% in 2006, rose to 22.1% in 2007, decreased to a low of 15.6% in 2008, rose to 18.8% in 2009, and decreased slightly to 18.5% in 2010.

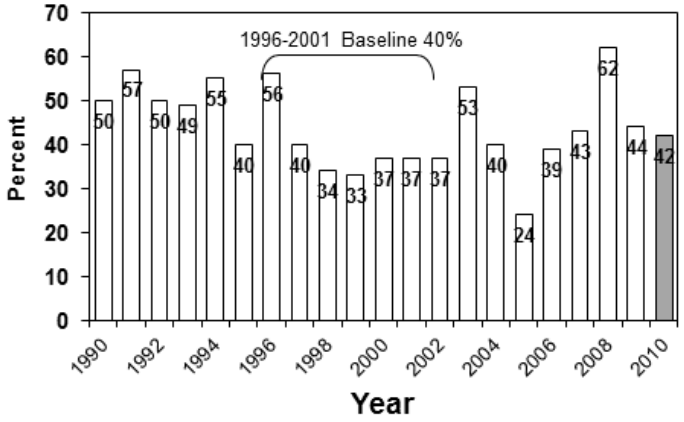
Table 7-6

Alcohol Use Among Fatally Injured Drivers*:
Manitoba, 1990-2010

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)
1996-2001 baseline	62	37	(59.7)	25	(40.3)

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

Figure 7-4
Percent of Fatally Injured Drivers*
Positive for Alcohol: Manitoba, 1990-2010



As shown in Table 7-8, in the baseline period (1996-2001), an average of 21.6% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes dropped to 18.5%, a 14.4% decrease.

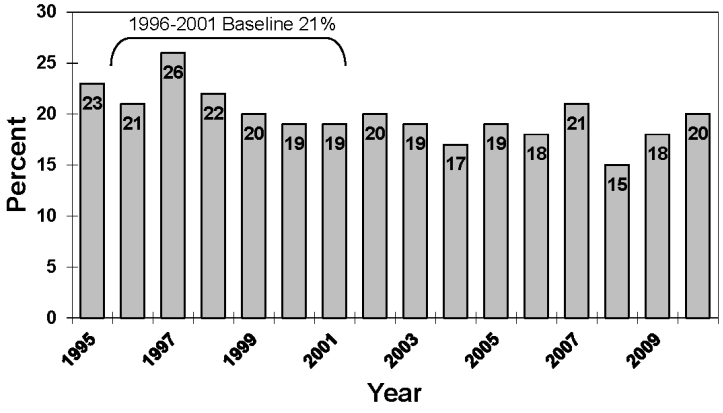
Table 7-7

Number and Percent of All Drivers in Serious Injury Crashes * that Involved Alcohol: Manitoba, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	667	142	(21.3)

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

Figure 7-5
Percent of All Drivers Serious Injury Crashes that Involved Alcohol*: Manitoba, 1995-2010



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

Table 7-8

Number and Percent of All Drivers* in Serious Injury Crashes ** that Involved Alcohol: Manitoba, 1995-2010

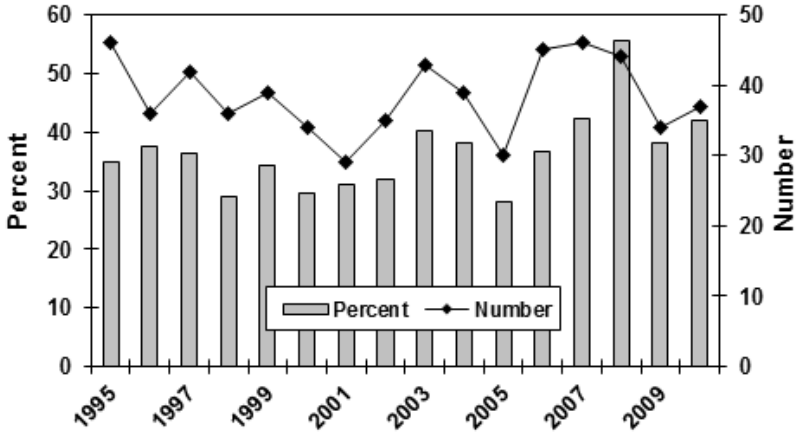
Year	Number of Drivers	Alcohol Related	
		Number	%
1995	743	170	(22.9)
1996	804	174	(21.6)
1997	630	162	(25.7)
1998	657	151	(23.0)
1999	595	120	(20.2)
2000	587	110	(18.7)
2001	597	115	(19.3)
2002	525	108	(20.6)
2003	532	102	(19.2)
2004	550	95	(17.3)
2005	482	92	(19.1)
2006	526	91	(17.3)
2007	467	103	(22.1)
2008	437	68	(15.6)
2009	452	85	(18.8)
2010	341	63	(18.5)
1996-2001 baseline	645	139	(21.6)

* 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 7-2

Number and Percent of Deaths Involving a Drinking Driver: Manitoba, 1995-2010



8.0 ONTARIO

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in Ontario during 2010. 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); and
- trends in the alcohol-crash problem (Section 8.4).

8.1 DEATHS IN ALCOHOL-RELATED CRASHES

Table 8-1 presents information on people who died in alcohol-related crashes in Ontario during 2010. 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. The first data 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, 70 people age 16-19 were killed in motor vehicle crashes in Ontario during 2010. And, in 64 cases (91.4%) 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. For example, 27 people aged 16-19 died in alcohol-related crashes in Ontario during 2010. The next column expresses this as a percentage – i.e., 42.2% 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 11.6% of all the people killed in alcohol-related crashes in Ontario during 2010.

The totals at the bottom of the table provide a summary. As can be seen, 728 persons died in motor vehicle crashes in Ontario during 2010. In 655 (90.0%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 233 (35.6%) involved alcohol.

Extrapolating this figure to the total number of motor vehicle fatalities (728 x .356) it can be estimated that *in Ontario during 2010, 259 persons died in alcohol-related crashes*.

8.1.1 Victim age. Of all the people who died in alcohol-related crashes, 21.9% (see last column) were aged 20-25; 18.5% were aged 36-45; 16.7% were aged 26-35 and 46-55; 13.7% were over age 55; 11.6% were aged 16-19; and 0.9% were under 16.

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 20-25 and 36-45 died (58.6% and 51.8% respectively).

Table 8-1
Deaths* in Alcohol-Related Crashes: Ontario, 2010

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	12	10	83.3	2	20.0	0.9
16-19	70	64	91.4	27	42.2	11.6
20-25	89	87	97.8	51	58.6	21.9
26-35	88	82	93.2	39	47.6	16.7
36-45	98	83	84.7	43	51.8	18.5
46-55	109	100	91.7	39	39.0	16.7
>55	262	229	87.4	32	14.0	13.7
Gender						
Male	524	482	92.0	199	41.3	85.4
Female	204	173	84.8	34	19.7	14.6
Type						
Driver/Operator	469	438	93.4	165	37.7	70.8
Passenger	130	110	84.6	30	27.3	12.9
Pedestrian	129	107	82.9	38	35.5	16.3
Vehicle Occupied						
Automobiles	329	302	91.8	100	33.1	42.9
Trucks/Vans	121	111	91.7	41	36.9	17.6
Motorcycles	52	47	90.4	11	23.4	4.7
Other Hwy. Vehs.	18	17	94.4	0	0.0	0.0
Offroad Vehicles	79	71	89.9	43	60.6	18.5
(Pedestrians)	129	107	82.9	38	35.5	16.3
TOTAL	728	655	90.0	233	35.6	100.0

*persons dying within 12 months in collisions on and off public roadways

The lowest incidence of alcohol involvement was found among the youngest and oldest

fatalities – 20.0% of persons under 16 and 14.0% 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, 85.4% were males. The incidence of alcohol in crashes in which a male died (41.3%) was greater than the incidence of alcohol in crashes in which a female died (19.7%).

8.1.3 Victim type. Of all the people who died in alcohol-related crashes, 70.8% were driver/operators of a vehicle; 16.3% were pedestrians; and 12.9% were passengers.

Within each of the victim types, the highest incidence of alcohol involvement (37.7%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 35.5% of the crashes in which a pedestrian died and 27.3% of the crashes in which a passenger died.

8.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 42.9% were in an automobile; 18.5% were off-road vehicle occupants; 17.6% were truck/van occupants; and 4.7% 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 (36.9% versus 33.1% and 23.4%). Among off-road vehicle occupants, 60.6% were involved in an alcohol-related crash.

8.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Ontario during 2010. Table 8-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple).

Table 8-2
Alcohol Use Among Fatally Injured Drivers: Ontario, 2010

Category of Driver	Number of Drivers*	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
16-19	28	22	78.6	8	36.4	7.3	7	31.8	7.5
20-25	51	46	90.2	21	45.7	19.3	18	39.1	19.4
26-35	55	49	89.1	21	42.9	19.3	18	36.7	19.4
36-45	54	47	87.0	23	48.9	21.1	20	42.6	21.5
46-55	66	63	95.5	21	33.3	19.3	18	28.6	19.4
>55	140	105	75.0	15	14.3	13.8	12	11.4	12.9
Gender									
Male	312	261	83.7	96	36.8	88.1	82	31.4	88.2
Female	82	71	86.6	13	18.3	11.9	11	15.5	11.8
Vehicle Type									
Automobile	247	204	82.6	69	33.8	63.3	58	28.4	62.4
Truck/Van	85	72	84.7	32	44.4	29.4	29	40.3	31.2
Motorcycle	49	43	87.8	8	18.6	7.3	6	14.0	6.5
Tractor Trailer	12	12	100.0	0	0.0	0.0	0	0.0	0.0
Other Vehicle	1	1	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	171	147	86.0	80	54.4	73.4	72	49.0	77.4
Multiple-Vehicle	223	185	83.0	29	15.7	26.6	21	11.4	22.6
TOTAL	394	332	84.3	109	32.8	100.0	93	28.0	100.0

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

The first data 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 28 drivers killed during 2010; 22 of these fatally injured drivers (78.6%) were tested for alcohol. Of those who were tested, eight (36.4%) were positive for alcohol. This means that 16-19 year old fatally injured drinking drivers accounted for 7.3% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that seven of the 22 (31.8%) fatally injured 16-19 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that seven of

the eight 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 7.5% of all the drivers with BACs over the legal limit.

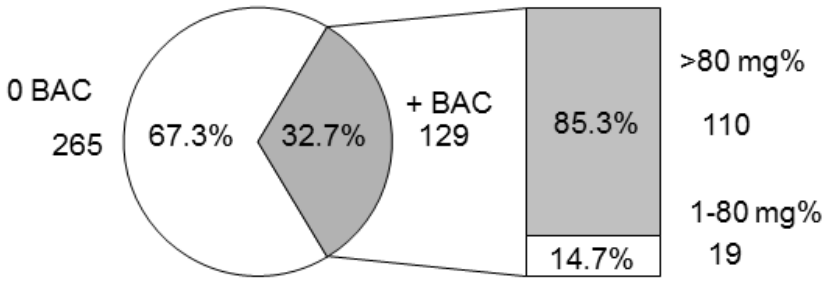
The main findings are shown by the totals at the bottom of the table. Ontario had a high testing rate in 2010, with 84.3% of fatally injured drivers being tested for alcohol use.

In Ontario, 32.8% had been drinking and 93 of 109 (85.3%) 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:

- 67.2% had BACs of zero mg%;
- 3.9% had BACs from 1-49 mg%;
- 0.9% had BACs from 50-80 mg%
- 10.2% had BACs from 81 to 160 mg%; and,
- 17.8% 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, 129 of 394 (32.7%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 110 (85.3%) have BACs over 80 mg%.

Figure 8-1
BACs** Among Fatally Injured Drivers*: Ontario, 2010



* 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), 21.1% were aged 36-45; 19.3% were aged 20-25, 26-35 and 46-55; 13.8% were over 55; and 7.3% were aged 16-19.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 21.5% were aged 36-45; 19.4% were aged 20-25, 26-35 and 46-55; 12.9% were over age 55; and 7.5% were aged 16-19.

Within each of the age groups, fatally injured drivers aged 36-45 were the most likely to have been drinking – 48.9% of drivers in this age group had been drinking. By contrast, only 14.3% of the tested drivers aged over 55 had been drinking.

8.2.2 Gender differences. Males dominate the picture – they account for 88.1% of all the fatally injured drivers who had been drinking, and 88.2% 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 (312 of the 394 fatalities are males). Fatally injured male drivers were more likely to have been drinking than female drivers (36.8% and 18.3%, respectively). And, 85.4% of the male and 84.6% 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), 63.3% were automobile drivers; 29.4% were truck/van drivers; and 7.3% were motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 62.4% were automobile drivers, 31.2% were truck/van drivers; and 6.5% were motorcyclists.

Within each of the vehicle types, 44.4% of truck/van drivers, 33.8% of fatally injured automobile drivers, and 18.6% of motorcyclists had been drinking. None of the fatally injured tractor-trailer drivers had been drinking.

8.2.4 Collision differences. Less than half of the drivers killed (171 of the 394) were involved in single-vehicle collisions but these crashes accounted for three-quarters of the drivers who had been drinking or were legally impaired (73.4% and 77.4%, respectively).

The reason for this apparent disparity is because alcohol is over represented in single-vehicle crashes. Over half of the drivers involved in single-vehicle crashes (54.4%) were positive for alcohol, compared to only 15.7% of those involved in multiple-vehicle collisions.

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 2010 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 data 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, 3,493 drivers were involved in crashes in which someone was seriously injured, and among these 14.2% were alcohol-related crashes.

8.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 26.6% were aged 20-25, 19.7% were aged 26-35 and 16.1% were aged 36-45. Drivers under 16 accounted for 0.2% and drivers over 55 accounted for only 9.1% of those involved in alcohol-related serious injury crashes.

Table 8-3
Drivers in Alcohol-Related Serious Injury Crashes:
Ontario, 2010

Category of Drivers	Number of Drivers	Alcohol-Related Number	Alcohol-Related % of total	Alcohol-Related % of all drivers in alcohol-related crashes
Age				
<16	6	1	16.7	0.2
16-19	203	47	23.2	9.5
20-25	460	132	28.7	26.6
26-35	595	98	16.5	19.7
36-45	632	80	12.7	16.1
46-55	679	70	10.3	14.1
>55	729	45	6.2	9.1
unknown	189	24	12.7	4.8
Gender				
Male	2496	402	16.1	80.9
Female	997	95	9.5	19.1
Vehicle Type				
Auto	2117	330	15.6	66.4
Truck/Van	704	101	14.3	20.3
Motorcycle	315	33	10.5	6.6
Tractor Trailer	107	7	6.5	1.4
Other Hwy. Vehicle	49	6	12.2	1.2
Off-Road	177	19	10.7	3.8
Unknown	24	1	4.2	0.2
Collision Type				
Single-Vehicle	981	330	33.6	66.4
Multiple-Vehicle	2512	167	6.6	33.6
TOTAL	3493	497	14.2	100.0

Within each of the age groups, over one-quarter of the drivers aged 20-25 were involved in alcohol-related serious injury crashes (28.7%). The lowest incidence of involvement in alcohol-related crashes was found for those over 55 (6.2%).

8.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 80.9% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (16.1% and 9.5%, respectively).

8.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 66.4% were automobile drivers; 20.3% were truck/van drivers; 6.6% were motorcyclists

and 3.8% were off-road vehicle drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers – 15.6% of these drivers were in crashes that involved alcohol, compared to 14.3% of truck/van drivers; 12.2% of other highway vehicle drivers; 10.7% for off-road vehicle drivers and 10.5% for motorcyclists. Among tractor-trailer drivers, 6.5% were involved in alcohol-related crashes.

8.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 66.4% 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 – 33.6% of these drivers, compared to only 6.6% for drivers involved in multiple-vehicle crashes.

8.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. Ontario's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

8.4.1 Deaths in alcohol-related crashes: 1995-2010. Table 8-4 and Figure 8-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2010. 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.

Table 8-4

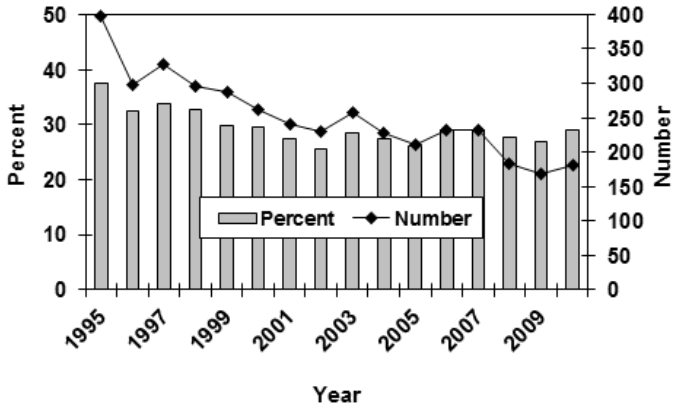
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Ontario, 1995-2010

Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	1059	398	37.6
1996	915	297	32.5
1997	969	328	33.8
1998	900	295	32.8
1999	966	287	29.7
2000	886	261	29.5
2001	878	241	27.4
2002	895	229	25.6
2003	903	258	28.6
2004	825	227	27.5
2005	802	210	26.2
2006	803	232	28.9
2007	804	232	28.9
2008	662	183	27.6
2009	628	169	26.9
2010	627	181	28.9
1996-2001 baseline	919	285	31.0

* 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 8-2
Number and Percent of Deaths Involving a Drinking Driver: Ontario, 1995-2010



As shown in the figure, the number of deaths in crashes that involved a drinking driver generally dropped from 398 to 210 between 1995 and 2005. There was an increase to 232 in 2006, a decrease to a low of 169 in 2009, and an increase to 181 in 2010. The percentage of alcohol-related fatalities generally declined from 37.6% in 1995 to 25.6% in 2002, rose to 28.9% in 2006 and 2007, decreased to 26.9% in 2009, and rose to 28.9% in 2010.

As shown at the bottom of the table, during the 1996-2001 baseline period there was an average of 285 fatalities involving a drinking driver and they accounted for 31.0% of all fatalities. Thus, it can be seen that the percent of fatalities involving a drinking driver decreased by 6.8% from 31.0% in the baseline period (1996-2001) to 28.9% in 2010. And, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 36.5% decrease from an average of 285 in the baseline period (1996-2001) to 181 in 2010.

8.4.2 Fatally injured drivers: Data on alcohol use among fatally injured drivers over the 24-year period from 1987-2010 are shown in Table 8-5. 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.

As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (39.6%) to 2002 (22.9%), generally rose until 2005 (25.7%), decreased in 2008 (21.1%), and rose again in 2010 (26.6%). The percent of fatally injured drivers with zero BACs generally increased from 1987 (53.0%) to 2002 (72.2%), generally decreased until 2006 (67.0%), rose to its highest level in 2008 (74.2%), and decreased again in 2010 (69.2%). 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%), and rose again in 2010 (4.2%).

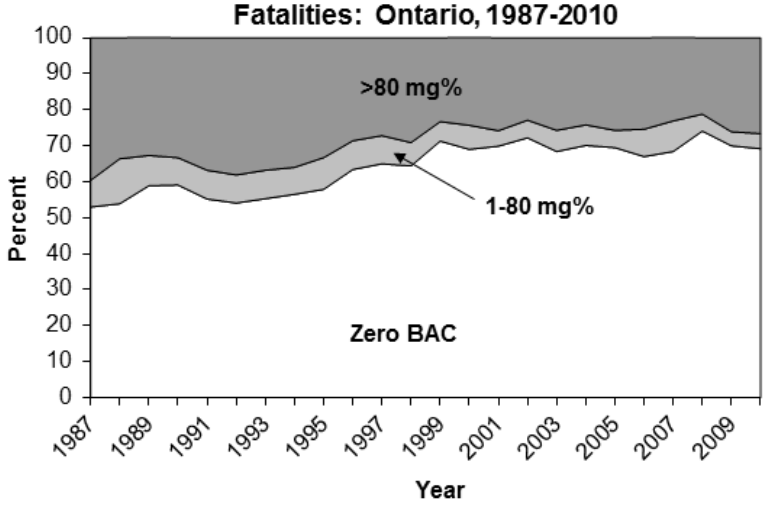
Table 8-5

Alcohol Use Among Fatally Injured Drivers:
Ontario, 1987-2010

YEAR	Number of Drivers	Drivers Tested	(% Total)	Drivers Grouped by BAC (mg%) 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
1996-2001 baseline	443	417	(94.1)	280	(67.1)	27	(6.5)	110	(26.4)

* dying in less than six hours.

Figure 8-3
Trends in Alcohol Use Among Driver Fatalities: Ontario, 1987-2010



When compared to the 1996-2001 baseline period, the percentage of fatally injured drivers with zero BACs in 2009 increased by 3.1% (from 67.1% to 69.2%). Among drivers with BACs from 1-80 mg%, there was a 35.4% decrease (from 6.5% to 4.2%). Among drivers with BACs over 80 mg%, there was a 0.8% increase (from 26.4% to 26.6%).

Table 8-6 and Figure 8-4 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 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 8-6, the baseline percentage of fatally injured drivers testing positive for alcohol from 1996-2001 is 33.1%. In 2010, 32.7% of fatally injured drivers tested positive for alcohol, a 1.2% decrease from the baseline period.

8.4.3 Drivers in serious injury crashes: Table 8-7 and Figure 8-5 show information on drivers involved in alcohol-related serious injury crashes. As shown in Table 8-7, during the baseline period (1996-2001), an average of 19.5% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 14.2% in 2010, a 27.2% decrease in the problem.

Table 8-8 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 8-7 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%, rose to 17.2% in 2004, dropped to 16.6% in 2005, rose to 18.3% in 2006, decreased to 16.6% in 2008, rose slightly to 16.8% in 2009, and decreased to 14.5% in 2010.

As shown in Table 8-8, in the baseline period (1996-2001) an average of 19.9% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes dropped to 14.5%, a 27.1% decrease from the baseline period.

Table 8-6

Alcohol Use Among Fatally Injured Drivers*:
Ontario, 1990-2010

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)
1996-2001 baseline	541	362	(66.9)	179	(33.1)

* 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, 1990-2010

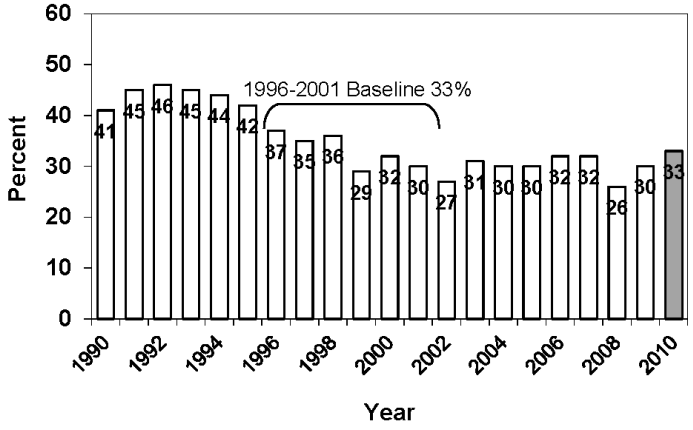


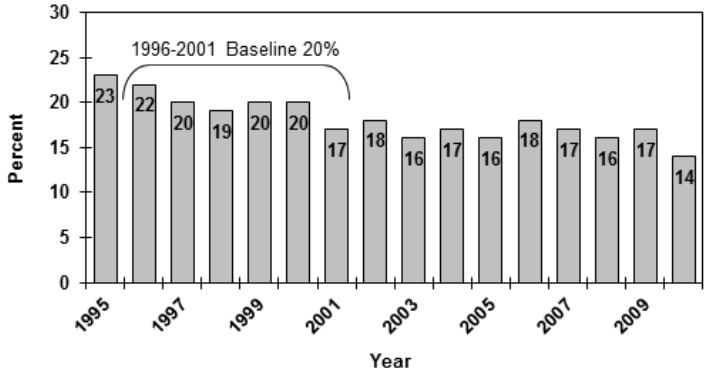
Table 8-7

Number and Percent of All Drivers in Serious Injury Crashes * that Involved Alcohol: Ontario, 1995-2010

Year	Number of Drivers	Alcohol Related	
		Number	%
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)
1996-2001 baseline	5679	1110	(19.5)

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

Figure 8-5
Percent of All Drivers Serious Injury Crashes that Involved Alcohol*: Ontario, 1995-2010



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

Table 8-8

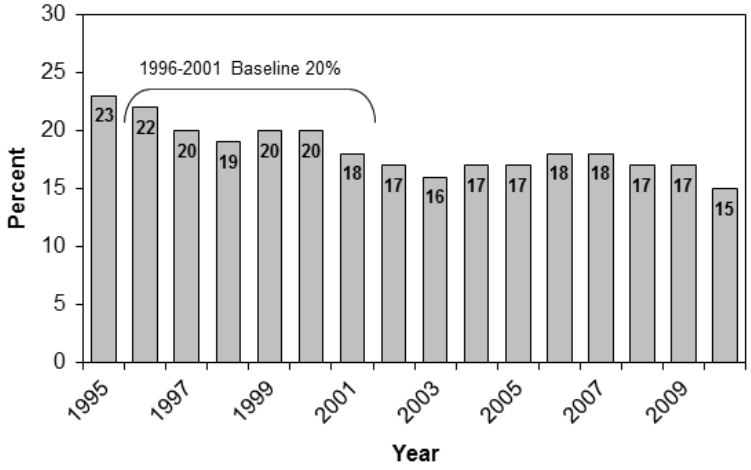
Number and Percent of All Drivers* in Serious Injury Crashes ** that Involved Alcohol: Ontario, 1995-2009

Year	Number of Drivers	Alcohol Related	
		Number	%
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)
1996-2001 baseline	5443	1082	(19.9)

* 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 All Drivers in Serious Injury Crashes that Involved Alcohol: Ontario, 1995-2010



9.0 QUEBEC

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in Quebec during 2010. 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); and
- trends in the alcohol-crash problem (Section 9.4).

9.1 DEATHS IN ALCOHOL-RELATED CRASHES

Table 9-1 presents information on people who died in alcohol-related crashes in Quebec during 2010. 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. The first data 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, 55 people age 16-19 were killed in motor vehicle crashes in Quebec during 2010. And, in 51 cases (92.7%) 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. For example, 19 people aged 16-19 died in alcohol-related crashes in Quebec during 2010. The next column expresses this as a percentage – i.e., 37.3% 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 14.8% of all the people killed in alcohol-related crashes in Quebec during 2010.

The totals at the bottom of the table provide a summary. As can be seen, 516 persons died in motor vehicle crashes in Quebec during 2010. In 421 (81.6%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 128 (30.4%) involved alcohol.

Extrapolating this figure to the total number of motor vehicle fatalities (516 x .304) it can be estimated that *in Quebec during 2010, 157 persons died in alcohol-related crashes*.

9.1.1 Victim age. Of all the people who died in alcohol-related crashes, 25.0% (see last column) were aged 20-25; 16.4% were over age 55; 15.6% were aged 46-55; 14.8% were aged 16-19 and 26-35; 13.3% were aged 36-45; and 0.0% were under 16.

Table 9-1
Deaths* in Alcohol-Related Crashes: Quebec, 2010

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	22	18	81.8	0	0.0	0.0
16-19	55	51	92.7	19	37.3	14.8
20-25	72	64	88.9	32	50.0	25.0
26-35	57	44	77.2	19	43.2	14.8
36-45	54	48	88.9	17	35.4	13.3
46-55	79	60	75.9	20	33.3	15.6
>55	177	136	76.8	21	15.4	16.4
Gender						
Male	367	303	82.6	104	34.3	81.3
Female	149	118	79.2	24	20.3	18.8
Type						
Driver/Operator	348	290	83.3	95	32.8	74.2
Passenger	106	88	83.0	24	27.3	18.8
Pedestrian	53	43	81.1	9	20.9	7.0
Unknown	9	0	0.0	0	0.0	0.0
Vehicle Occupied						
Automobiles	289	248	85.8	74	29.8	57.8
Trucks/Vans	31	21	67.7	10	47.6	7.8
Motorcycles	40	34	85.0	13	38.2	10.2
Other Hwy. Vehs.	9	8	88.9	0	0.0	0.0
Offroad Vehicles	86	67	77.9	22	32.8	17.2
(Pedestrians)	53	43	81.1	9	20.9	7.0
Unknown	8	0	0.0	0	0.0	0.0
TOTAL	516	421	81.6	128	30.4	100.0

*persons dying within 12 months in collisions on and off public roadways

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 20-25 and 26-35 died (50.0% and 43.2% respectively). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – 0.0% of persons under 16 and 15.4% 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, 81.3% were males. The incidence of alcohol in crashes in which male died (34.3%) was greater than the incidence of alcohol in crashes in which a female died (20.3%).

9.1.3 Victim type. Of all the people who died in alcohol-related crashes, 74.2% were drivers/operators of a vehicle; 18.8% were passengers; and 7.0% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (32.8%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 27.3% of the crashes in which a passenger died and 20.9% of those in which a pedestrian died.

9.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 57.8% were in an automobile; 17.2% were off-road vehicle occupants; 10.2% were motorcyclists; and 7.8% were truck/van occupants.

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 (47.6% versus 29.8%). Among motorcyclists, 38.2% died in an alcohol-related crash compared to 32.8% of off-road vehicle occupants.

9.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Quebec during 2010. Table 9-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple).

Table 9-2
Alcohol Use Among Fatally Injured Drivers: Quebec, 2010

Category of Driver	Number of Drivers	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
16-19	27	22	81.5	7	31.8	10.8	4	18.2	7.5
20-25	45	30	66.7	13	43.3	20.0	12	40.0	22.6
26-35	33	26	78.8	14	53.8	21.5	13	50.0	24.5
36-45	28	18	64.3	8	44.4	12.3	5	27.8	9.4
46-55	49	33	67.3	13	39.4	20.0	12	36.4	22.6
>55	86	42	48.8	10	23.8	15.4	7	16.7	13.2
Gender									
Male	200	130	65.0	58	44.6	89.2	47	36.2	88.7
Female	68	41	60.3	7	17.1	10.8	6	14.6	11.3
Vehicle Type									
Automobile	203	134	66.0	45	33.6	69.2	37	27.6	69.8
Truck/Van	24	13	54.2	8	61.5	12.3	7	53.8	13.2
Motorcycle	35	22	62.9	12	54.5	18.5	9	40.9	17.0
Tractor Trailer	4	1	25.0	0	0.0	0.0	0	0.0	0.0
Other Vehicle	2	1	50.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	112	78	69.6	40	51.3	61.5	35	44.9	66.0
Multiple-Vehicle	156	93	59.6	25	26.9	38.5	18	19.4	34.0
TOTAL	268	171	63.8	65	38.0	100.0	53	31.0	100.0

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

The first data 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 2010; 22 of these fatally injured drivers (81.5%) were tested for alcohol. Of those who were tested, seven (31.8%) were positive for alcohol. This means that 16-19 year old fatally injured drinking drivers accounted for 10.8% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that four of the 22 (18.2%) 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. Thus, 16-19 year old drivers accounted for 7.5% of all the drivers with BACs over the legal limit.

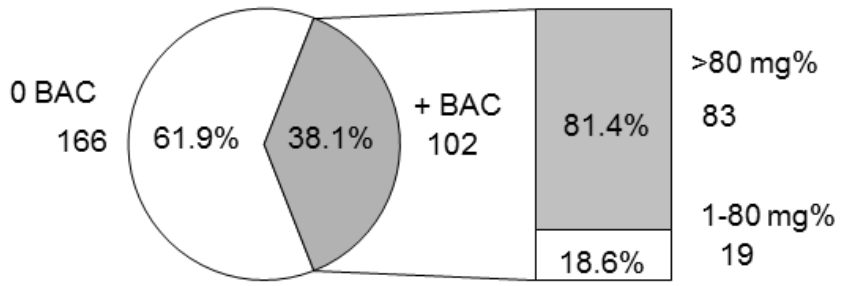
The main findings are shown by the totals at the bottom of the table. Quebec had a low testing rate in 2010, with 63.8% of fatally injured drivers being tested for alcohol use.

In Quebec, 38.0% had been drinking and 53 of 65 (81.5%) 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:

- 62.0% had BACs of zero mg%;
- 4.7% had BACs from 1-49 mg%;
- 2.3% had BACs from 50-80 mg%
- 12.3% had BACs from 81 to 160 mg%; and,
- 18.7% 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, 102 of 268 (38.1%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 83 (81.4%) have BACs over 80 mg%.

Figure 9-1
BACs** Among Fatally Injured Drivers*: Quebec, 2010



* 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), 21.5% were aged 26-35; 20.0% were aged 20-25 and 46-55; 15.4% were over age 55; 12.3% were aged 36-45; and 10.8% were aged 16-19.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 24.5% were aged 26-35; 22.6% were aged 20-25 and 46-55; 13.2% were over age 55; 9.4% were aged 36-45; and 7.5% were aged 16-19.

Within each of the principal age groups, fatally injured drivers aged 26-35 were the most likely to have been drinking – 53.8% of drivers in this age group had been drinking. By contrast, only 23.8% of the tested drivers aged over 55 had been drinking.

9.2.2 Gender differences. Males dominate the picture – they account for 89.2% of all the fatally injured drivers who had been drinking, and 88.7% 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 (200 of the 268 fatalities or 74.6% are males). Fatally injured male drivers were more likely to have been drinking than female drivers (44.6% and 17.1%, respectively). And, 81.0% of the male and 85.7% 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), 69.2% were automobile drivers; 18.5% were motorcyclists; and 12.3% were truck/van drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 69.8% were automobile drivers; 17.0% were motorcyclists; and 13.2% were truck/van drivers.

Within each of the vehicle types, 61.5% of fatally injured truck/van drivers, 54.5% of motorcyclists, and 33.6% of automobile drivers were found to have been drinking. Neither the fatally injured tractor-trailer driver nor the driver of the other highway vehicle had been drinking.

9.2.4 Collision differences. Two-fifths of the drivers killed (112 of the 268) were involved in single-vehicle collisions but these crashes accounted for three-fifths of the drivers who had been drinking or were legally impaired (61.5% and 66.0%, respectively). The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Half of the drivers involved in single-vehicle crashes (51.3%) were positive for alcohol, compared to only 26.9% of those involved in multiple-vehicle collisions.

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 2010 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 data 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, 3,313 drivers were involved in crashes in which someone was seriously injured, and among these 17.7% were alcohol-related crashes.

9.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 21.0% were aged 26-35, 20.1% were aged 20-25; and 14.0% were aged 16-19. Drivers under 16 accounted for only 0.7% of those involved in alcohol-related serious injury crashes.

Table 9-3
Drivers in Alcohol-Related Serious Injury Crashes:
Quebec, 2010

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	87	4	4.6	0.7
16-19	333	82	24.6	14.0
20-25	420	118	28.1	20.1
26-35	513	123	24.0	21.0
36-45	437	71	16.2	12.1
46-55	447	66	14.8	11.2
>55	492	43	8.7	7.3
unknown	584	80	13.7	13.6
Gender				
Male	2296	445	19.4	75.8
Female	832	103	12.4	17.5
unknown	185	39	21.1	6.6
Vehicle Type				
Auto and Truck/Van*	2435	490	20.1	83.5
Motorcycle	308	32	10.4	5.5
Tractor Trailer	99	4	4.0	0.7
Other Hwy. Vehicle	53	5	9.4	0.9
Off-Road	371	46	12.4	7.8
Unknown	47	10	21.3	1.7
Collision Type				
Single-Vehicle	1188	437	36.8	74.4
Multiple-Vehicle	2125	150	7.1	25.6
TOTAL	3313	587	17.7	100.0

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

Within each of the age groups, over one-quarter of the drivers aged 20-25 were involved in alcohol-related serious injury crashes (28.1%). The lowest incidence of involvement in alcohol-related crashes was found for those under 16 (4.6%).

9.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 75.8% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (19.4% and 12.4%, 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, 83.5% were automobile-truck/van drivers; 7.8% were off-road vehicle drivers; and 5.5% were motorcyclists.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile-truck/van drivers – 20.1% of these drivers were in crashes that involved alcohol, compared to 12.4% for off-road vehicle drivers, 10.4% for motorcyclists; and 9.4% for drivers of other highway vehicles. Among tractor-trailer drivers, 4.0% were involved in alcohol-related crashes.

9.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 74.4% 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 – 36.8% of these drivers, compared to only 7.1% for drivers involved in multiple-vehicle crashes.

9.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. Quebec's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem by 2010 is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

9.4.1 Deaths in alcohol-related crashes: 1995-2010. Table 9-4 and Figure 9-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2010. 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.

Table 9-4

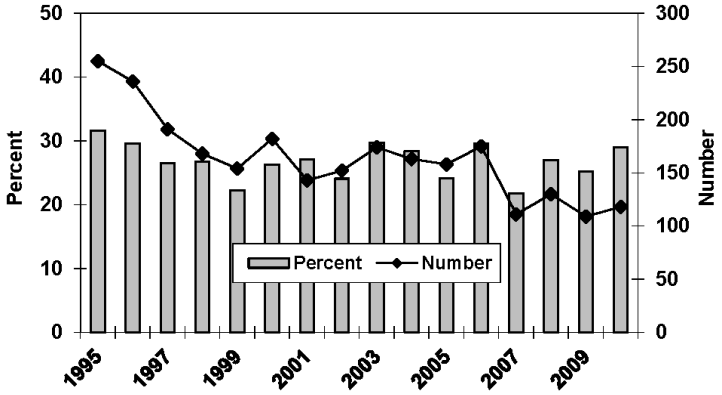
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Quebec, 1995-2010

Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	807	255	31.6
1996	797	236	29.6
1997	720	191	26.5
1998	628	168	26.8
1999	692	154	22.3
2000	691	182	26.3
2001	527	143	27.1
2002	631	152	24.1
2003	586	174	29.7
2004	574	163	28.4
2005	652	158	24.2
2006	592	175	29.6
2007	509	111	21.8
2008	482	130	27.0
2009	432	109	25.2
2010	419	120	28.6
1996-2001 baseline	676	179	26.5

* 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, 1995-2010



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, and rose to 120 in 2010. 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, rose to 27.0% in 2008, decreased to 25.2% in 2009, and rose again to 28.6% in 2010.

As shown at the bottom of the table, during the 1996-2001 baseline period there was an average of 179 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 7.9% from 26.5% in the baseline period (1996-2001) to 28.6% in 2010. However, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 33.0% decrease from an average of 179 in the baseline period (1996-2001) to 120 in 2010.

9.4.2 Fatally injured drivers: Data on alcohol use among fatally injured drivers over the 24-year period from 1987-2010 are shown in Table 9-5. 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).

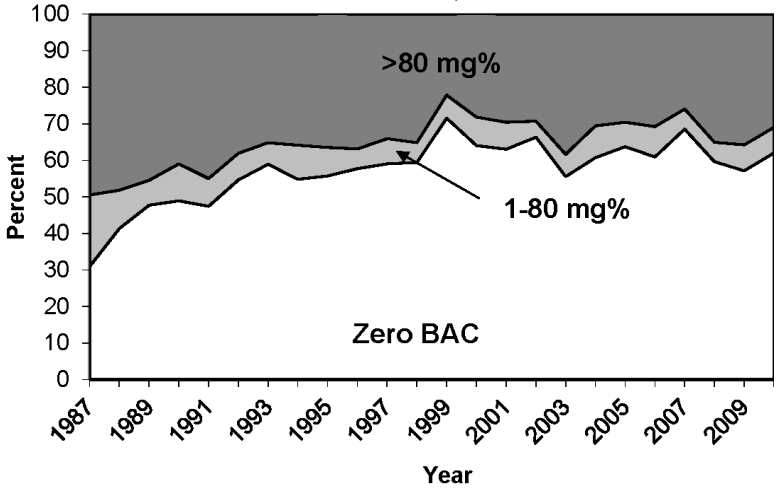
As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (49.5%) to its lowest point in 1999 (22.3%), generally rose until 2003 (38.4%), declined in 2005 (29.6%), rose in 2006 (30.8%), decreased in 2007 (26.0%), rose in 2009 (35.7%), and decreased again in 2010 (31.0%). The percent of fatally injured drivers with zero BACs generally increased from 1987 (30.9%) to 1999 (71.5%), fluctuated until 2007 (68.5%), decreased in 2009 (57.1%), and rose again in 2010 (62.0%). 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%), increased in 2004 (8.7%), decreased in 2005 (6.7%), rose in 2006 (8.3%), decreased in 2008 (5.3%), rose in 2009 (7.1%), and decreased slightly in 2010 (7.0%).

Table 9-5

Alcohol Use Among Fatally Injured Drivers:
Quebec, 1987-2010

YEAR	Number of Drivers	Drivers Tested	(% Total)	Drivers Grouped by BAC (mg%) 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	332	74.1	182	54.8	31	9.3	119	35.8
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	355	257	72.4	162	63.0	19	7.4	76	29.6
2002	420	315	75.0	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	320	245	76.6	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
1996-2001 baseline	420	306	(72.9)	191	(62.4)	20	(6.5)	95	(31.0)

Figure 9-3
Trends in Alcohol Use Among Driver Fatalities: Quebec, 1987-2009



When compared to the 1996-2001 baseline period shown at the bottom of Table 9-5, the percentage of fatally injured drivers with zero BACs in 2010 decreased by 0.6% (from 62.4% to 62.0%). Among drivers with BACs from 1-80 mg%, there was a 7.7% increase (from 6.5% to 7.0%). And among those with BACs over 80 mg%, there has been no change (from 31.0% to 31.0%).

Table 9-6 and Figure 9-4 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 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 9-6, the percentage of fatally injured drivers testing positive for alcohol from 1996-2001, the baseline period, is 37.6%. In 2010, 38.1% of fatally injured drivers tested positive for alcohol, a 1.3% increase from the baseline period.

9.4.3 Drivers in serious injury crashes: Table 9-7 and Figure 9-5 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (1996-2001), an average of 16.5% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 17.7% in 2010, resulting in a 7.3% increase in the problem.

Table 9-8 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 9-7 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, and decreased again to 18.3% in 2010.

As shown in Table 9-8, in the baseline period (1996-2001), an average of 17.1% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes was 18.3% – a 7.0% increase.

Table 9-6

Alcohol Use Among Fatally Injured Drivers*:
Quebec, 1990-2010

YEAR	Number of Drivers*	Drivers Grouped by BAC (mg%) Zero	(% Tested)	Positive	(% Tested)
1990	583	285	(48.9)	298	(51.1)
1991	560	265	(47.3)	295	(52.7)
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	355	222	(62.5)	133	(37.5)
2002	420	279	(66.4)	141	(33.6)
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)
1996-2001 baseline	420	262	(62.4)	158	(37.6)

* 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, 1990-2010

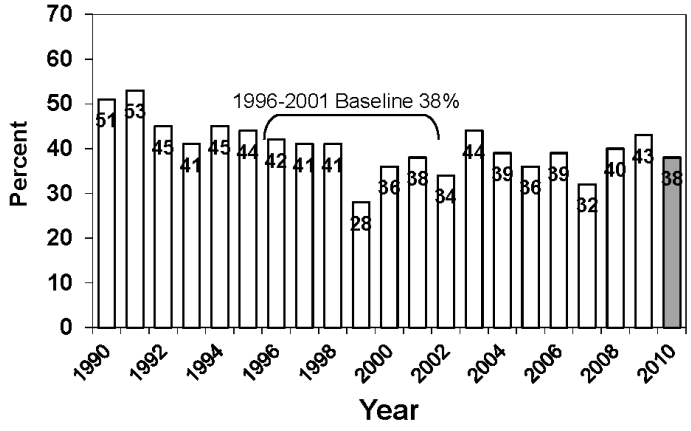


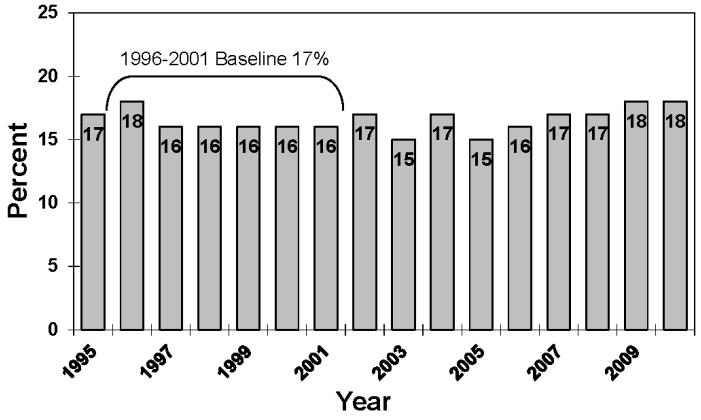
Table 9-7

Number and Percent of All Drivers in Serious Injury Crashes * that Involved Alcohol: Quebec, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	5294	875	(16.5)

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

Figure 9-5
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol*: Quebec, 1995-2010



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

Table 9-8

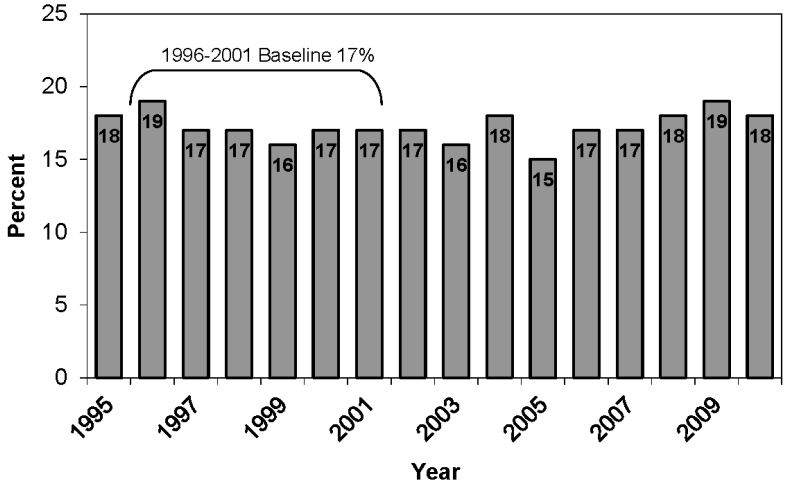
Number and Percent of All Drivers* in Serious Injury Crashes ** that Involved Alcohol: Quebec, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	4750	813	(17.1)

* 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 9-6
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Quebec, 1995-2010



10.0 NEW BRUNSWICK

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in New Brunswick during 2010. 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); and
- trends in the alcohol-crash problem (Section 10.4).

10.1 DEATHS IN ALCOHOL-RELATED CRASHES

Table 10-1 presents information on people who died in alcohol-related crashes in New Brunswick during 2010. 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. The first data 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, 13 people aged 16-19 were killed in motor vehicle crashes in New Brunswick during 2010. And, in all 13 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. For example, seven people aged 16-19 died in alcohol-related crashes in New Brunswick during 2010. The next column expresses this as a percentage – i.e., 53.8% of those aged 16-19 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 16-19 represent 14.6% of all the people killed in alcohol-related crashes in New Brunswick during 2010.

The totals at the bottom of the table provide a summary. As can be seen, 105 persons died in motor vehicle crashes in New Brunswick during 2010. In 102 (97.1%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 48 (47.1%) involved alcohol.

Extrapolating this figure to the total number of motor vehicle fatalities (105 x .471) it can be estimated that *in New Brunswick during 2010, 49 persons died in alcohol-related crashes*.

10.1.1 Victim age. Of all the people who died in alcohol-related crashes, 27.1% (see last column) were aged 36-45; 18.8% were aged 46-55; 16.7% were aged 20-25; 14.6% were aged 16-19; 10.4% were over age 55; 8.3% were aged 26-35; and 4.2% were under 16 years of age.

Table 10-1
Deaths* in Alcohol-Related Crashes: New Brunswick, 2010

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	7	7	100.0	2	28.6	4.2
16-19	13	13	100.0	7	53.8	14.6
20-25	14	14	100.0	8	57.1	16.7
26-35	10	10	100.0	4	40.0	8.3
36-45	18	18	100.0	13	72.2	27.1
46-55	16	16	100.0	9	56.3	18.8
>55	27	24	88.9	5	20.8	10.4
Gender						
Male	73	71	97.3	35	49.3	72.9
Female	32	31	96.9	13	41.9	27.1
Type						
Driver/Operator	70	70	100.0	36	51.4	75.0
Passenger	22	22	100.0	9	40.9	18.8
Pedestrian	13	10	76.9	3	30.0	6.3
Vehicle Occupied						
Automobiles	54	54	100.0	24	44.4	50.0
Trucks/Vans	14	14	100.0	10	71.4	20.8
Motorcycles	10	10	100.0	3	30.0	6.3
Other Hwy. Vehs.	2	2	100.0	0	0.0	0.0
Offroad Vehicles	12	12	100.0	8	66.7	16.7
(Pedestrians)	13	10	76.9	3	30.0	6.3
TOTAL	105	102	97.1	48	47.1	100.0

*persons dying within 12 months in collisons on and off public roadways

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 36-45 and 20-25 died (72.2% and 57.1%, respectively).

The lowest incidence of alcohol involvement was found among fatalities under 16 and over 55 – 28.6% of persons under 16 and 20.8% of the fatalities over 55 died in crashes involving alcohol.

10.1.2 Gender. Of all the people who died in alcohol-related crashes, 72.9% were males. The incidence of alcohol in crashes in which a male died (49.3%) was greater than the incidence of alcohol in crashes in which a female died (41.9%).

10.1.3 Victim type. Of all the people who died in alcohol-related crashes, 75.0% were drivers/operators of a vehicle; 18.8% were passengers; and 6.3% were pedestrians.

Within each of the victim types, the highest incidence of alcohol involvement (51.4%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 40.9% of the crashes in which a passenger died and 30.0% of those in which a pedestrian died.

10.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 50.0% were in an automobile; 20.3% were truck/van occupants; 16.7% were off-road vehicle occupants; and 6.3% 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 off-road vehicle occupant died (71.4% versus 66.7%). Among automobile occupants and motorcyclists, 44.4% and 30.0% died in alcohol-related crashes, respectively.

10.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in New Brunswick during 2010. Table 10-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple).

Table 10-2
Alcohol Use Among Fatally Injured Drivers: New Brunswick, 2010

Category of Driver	Number of Drivers*	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
16-19	4	3	75.0	1	33.3	3.6	1	33.3	3.8
20-25	10	10	100.0	7	70.0	25.0	5	50.0	19.2
26-35	6	6	100.0	1	16.7	3.6	1	16.7	3.8
36-45	16	15	93.8	12	80.0	42.9	12	80.0	46.2
46-55	9	9	100.0	5	55.6	17.9	5	55.6	19.2
>55	15	14	93.3	2	14.3	7.1	2	14.3	7.7
Gender									
Male	50	48	96.0	22	45.8	78.6	20	41.7	76.9
Female	10	9	90.0	6	66.7	21.4	6	66.7	23.1
Vehicle Type									
Automobile	37	35	94.6	18	51.4	64.3	17	48.6	65.4
Truck/Van	11	11	100.0	7	63.6	25.0	7	63.6	26.9
Motorcycle	10	9	90.0	3	33.3	10.7	2	22.2	7.7
Tractor Trailer	2	2	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	40	40	100.0	25	62.5	89.3	25	62.5	96.2
Multiple-Vehicle	20	17	85.0	3	17.6	10.7	1	5.9	3.8
TOTAL	60	57	95.0	28	49.1	100.0	26	45.6	100.0

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

The first data 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 four drivers killed during 2010; three of these fatally injured drivers (75.0%) were tested for alcohol. Of those who were tested, one (33.3%) were positive for alcohol. This means that 16-19 year old fatally injured drinking drivers accounted for 3.6% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that one of the three (33.3%) fatally injured 16-19 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, 16-19 year old drivers accounted for 3.8% of all the drivers with BACs over the legal limit.

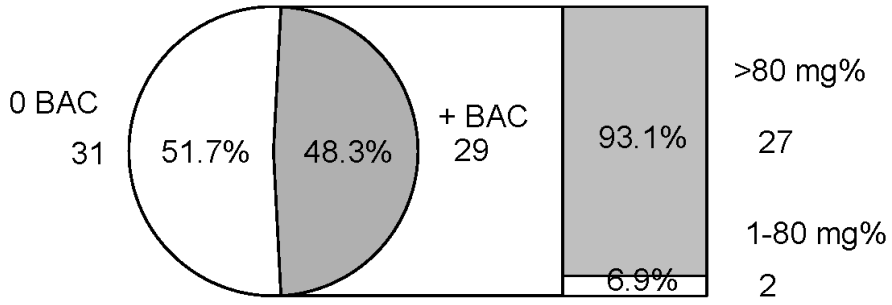
The main findings are shown by the totals at the bottom of the table. New Brunswick had a very high testing rate in 2010, with 95.0% of fatally injured drivers being tested for alcohol use.

In New Brunswick, 49.1% had been drinking and 26 of 28 (92.9%) 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:

- 50.9% had BACs of zero mg%;
- 1.8% had BACs from 1-49 mg%;
- 1.8% had BACs from 50-80 mg%
- 31.6% had BACs from 81 to 160 mg%; and,
- 14.0% 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 29 of 60 (48.3%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 27 (93.1%) have BACs over 80 mg%.

Figure 10-1
BACs** Among Fatally Injured Drivers*: New Brunswick, 2010



* 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

10.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with positive BAC), 42.9% were aged 36-45; 25.0% were aged 20-25; 17.9% were aged 46-55; 7.1% were over age 55; and 3.6% were aged 16-19 and 26-35.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 46.2% were aged 36-45; 19.2% were aged 20-25 and 46-55; 7.7% were over age 55; and 3.8% were aged 16-19 and 26-35.

Within each of the age groups, fatally injured drivers aged 36-45 were the most likely to have been drinking – 80.0% of drivers in this age group had been drinking. By contrast, 14.3% of the tested drivers over age 55 had been drinking.

10.2.2 Gender differences. Males dominate the picture – they account for 78.6% of the fatally injured drivers who had been drinking and 76.9% of those who were legally impaired.

Males dominate the picture largely because they account for most of the drivers who are killed (50 of the 60 fatalities or 83.3% are males). However, fatally injured female drivers were more likely to have been drinking than male drivers (66.7% and 45.8%, 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), 64.3% were automobile drivers; 25.7% were truck/van drivers; and 10.7% were motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 65.4% were automobile drivers, 26.9% were truck/van drivers; and 7.7% were motorcyclists.

Within each of the vehicle types, 63.6% of fatally injured truck/van drivers, 51.4% of automobile drivers and 33.3% of motorcyclists had been drinking. Neither of the fatally injured tractor-trailer drivers had been drinking.

10.2.4 Collision differences. Two-thirds of the drivers killed (40 of the 60) were involved in single-vehicle collisions but these crashes accounted for almost all of the drivers who had been drinking or were legally impaired (89.3% and 96.2%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Over three-fifths of the drivers involved in single-vehicle crashes (62.5%) were positive for alcohol, compared to only 17.6% of those involved in multiple-vehicle collisions.

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 2010 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 data 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, 325 drivers were involved in crashes in which someone was seriously injured, and among these 26.8% were involved in alcohol-related crashes.

10.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 23.0% were aged 26-35, 20.7% were aged 46-55; and 14.9% were aged 16-19 and 36-45. Drivers aged under 16 and 20-25 respectively accounted for only 0.0% and 11.5% of those involved in alcohol-related serious injury crashes.

Table 10-3
Drivers in Alcohol-Related Serious Injury Crashes:
New Brunswick, 2010

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	7	0	0.0	0.0
16-19	33	13	39.4	14.9
20-25	38	10	26.3	11.5
26-35	68	20	29.4	23.0
36-45	53	13	24.5	14.9
46-55	62	18	29.0	20.7
>55	62	12	19.4	13.8
unknown	2	1	50.0	1.1
Gender				
Male	150	57	38.0	65.5
Female	72	12	16.7	13.8
Unknown	103	18	17.5	20.7
Vehicle Type				
Auto	177	49	27.7	56.3
Truck/Van	89	29	32.6	33.3
Motorcycle	33	5	15.2	5.7
Tractor Trailer	8	1	12.5	1.1
Other Hwy. Vehicle	2	1	50.0	1.1
Off-Road	16	2	12.5	2.3
Collision Type				
Single-Vehicle	136	67	49.3	77.0
Multiple-Vehicle	189	20	10.6	23.0
TOTAL	325	87	26.8	100.0

Within each of the age groups, two-fifths of the drivers aged 16-19 were involved in alcohol-related serious injury crashes (39.4%). The lowest incidence of involvement in alcohol-related crashes was found for those aged under 16 and over 55 (0.0% and 19.4%, respectively).

10.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 65.5% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (38.7% and 16.7%, respectively).

10.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 56.3% were automobile drivers; 33.3% were truck/van drivers; 5.7% were motorcyclists; 2.3% were off-road vehicle drivers; and 1.1% were tractor-trailer drivers and drivers

of other highway vehicles.

The highest incidence of involvement in alcohol-related serious injury crashes was found for drivers of other highway vehicles – 50.0% of these drivers were in crashes that involved alcohol, compared to 32.6% for truck/van drivers, 27.7% for automobile drivers, 15.2% for motorcyclists, and 12.5% for tractor-trailer drivers and off-road vehicle drivers.

10.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 77.0% 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 – 49.3% of these drivers, compared to only 10.6% for drivers involved in multiple-vehicle crashes.

10.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. New Brunswick's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem by 2010 is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

10.4.1 Deaths in alcohol-related crashes: 1995-2010. Table 10-4 and Figure 10-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2010. 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.

Table 10-4

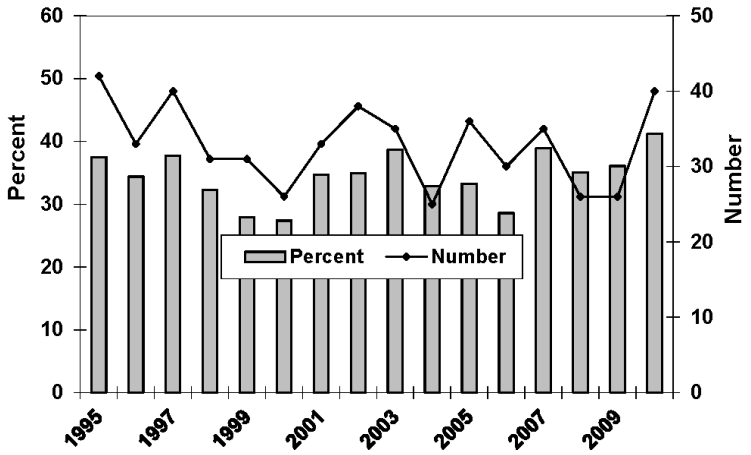
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: New Brunswick, 1995-2010

Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	112	42	37.5
1996	96	33	34.4
1997	106	40	37.7
1998	96	31	32.3
1999	111	31	27.9
2000	95	26	27.4
2001	95	33	34.7
2002	109	38	34.9
2003	93	36	38.7
2004	76	25	32.9
2005	108	36	33.3
2006	105	30	28.6
2007	90	35	38.9
2008	74	26	35.1
2009	72	26	36.1
2010	97	40	41.2
1996-2001 baseline	100	32	32.0

* 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 10-2
Number and Percent of Deaths Involving
a Drinking Driver: New Brunswick, 1995-2010



As shown in the figure, the number of deaths in crashes that involved a drinking driver generally dropped from 42 in 1995 to a low of 25 in 2004, rose to 36 in 2005, decreased to 30 in 2006, rose to 35 in 2007, decreased to 26 in 2009, and rose again to 40 in 2010. The percentage of alcohol-related fatalities generally decreased from 37.5% in 1995 to its lowest level in 2000 (27.4%), fluctuated until 2006, peaked at 38.9% in 2007, decreased to 35.1% in 2008, and rose in 2010 (41.2%).

As shown at the bottom of the table, during the 1996-2001 baseline period there was an average of 32 fatalities involving a drinking driver and they accounted for 32.0% of all fatalities. This means that the percent of fatalities involving a drinking driver increased by 28.8% from 32.0% in the baseline period (1996-2001) to 41.2% in 2010. Also, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 25.0% increase from an average of 32 in the baseline period (1996-2001) to 40 in 2010.

10.4.2 Fatally injured drivers: Data on alcohol use among fatally injured drivers over the 24-year period from 1987-2010 are shown in Table 10-5. 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.

As can be seen, since 1987 the percent 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%), rising to 41.2% in 2008, declining in 2009 (35.9%), and rising again to 2010 (42.0%). The percent of fatally injured drivers with zero BACs increased from 1987 (46.8%) to 1990 (64.9%), declined in 1993 (36.0%), gradually increased to its highest mark in 2000 and 2005 (66.7%), declined in 2007 (51.1%), rose in 2009 (59.0%), and declined again in 2010 (54.0%). The percent of fatally injured drivers with BACs between 1 and 80 mg% declined until 1990 (0.0%), fluctuated until 2006 (3.8%), rose to its highest level in 2007 (11.1%), and decreased again in 2010 (4.0%).

Table 10-5

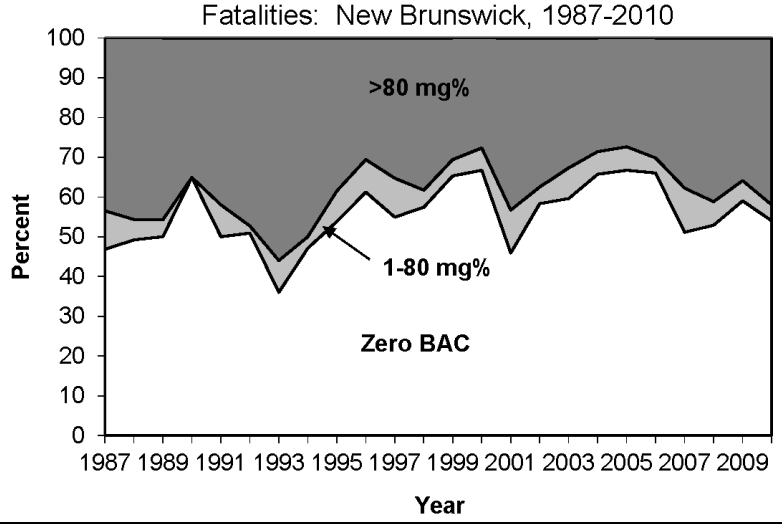
Alcohol Use Among Fatally Injured Drivers:
New Brunswick, 1987-2010

YEAR	Number of Drivers			Drivers Grouped by BAC (mg%)					
	Drivers*	Tested	(% 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
1996-2001 baseline	49	45	(91.8)	26	(57.8)	3	(6.7)	16	(35.6)

* dying in less than six hours.

Figure 10-3

Trends in Alcohol Use Among Driver Fatalities: New Brunswick, 1987-2010



When compared to the 1996-2001 baseline period shown at the bottom of Table 10-5, the percentage of fatally injured drivers with zero BACs in 2010 decreased by 6.6% (from 57.8% to 54.0%). Among drivers with BACs from 1-80 mg%, there was a 40.3% decrease (from 6.7% to 4.0%). And among drivers with BACs over 80 mg%, there was an 18.0% increase (from 35.6% to 42.0%).

Table 10-6 and Figure 10-4 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 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 10-6, the baseline percentage of fatally injured drivers testing positive for alcohol from 1996-2001 is 42.1%. In 2010, 48.3% of fatally injured drivers tested positive for alcohol, a 14.7% increase from the baseline period.

10.4.3 Drivers in serious injury crashes: Table 10-7 and Figure 10-5 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (1996-2001), an average of 23.5% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 26.8% in 2010, a 14.0% increase.

Table 10-8 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 10-7 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 16-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, and rose again in 2010 (27.5%).

In the baseline period (1996-2001), an average of 23.7% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes increased to 27.5% – a 16.0% increase.

Table 10-6

Alcohol Use Among Fatally Injured Drivers*:
New Brunswick, 1990-2010

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)
1996-2001 baseline	57	33	(57.9)	24	(42.1)

* 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, 1990-2010

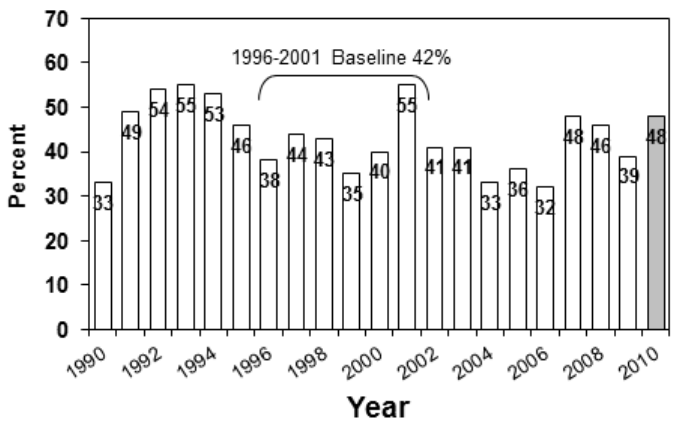


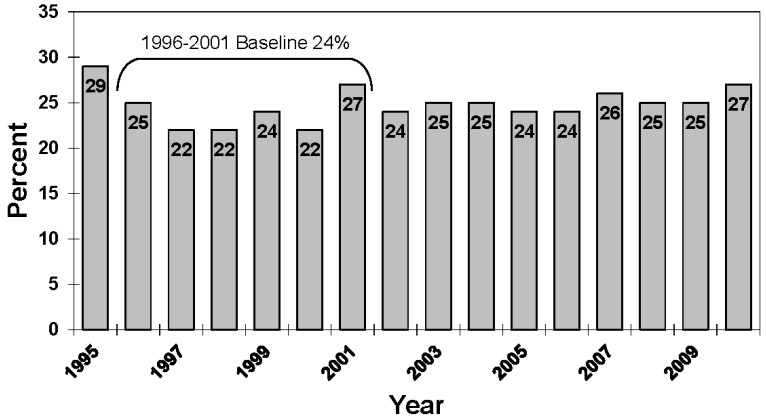
Table 10-7

Number and Percent of All Drivers in Serious Injury Crashes * that Involved Alcohol: New Brunswick, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	561	132	(23.5)

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

Figure 10-5
Percent of All Drivers Serious Injury Crashes that Involved Alcohol*: New Brunswick, 1995-2010



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

Table 10-8

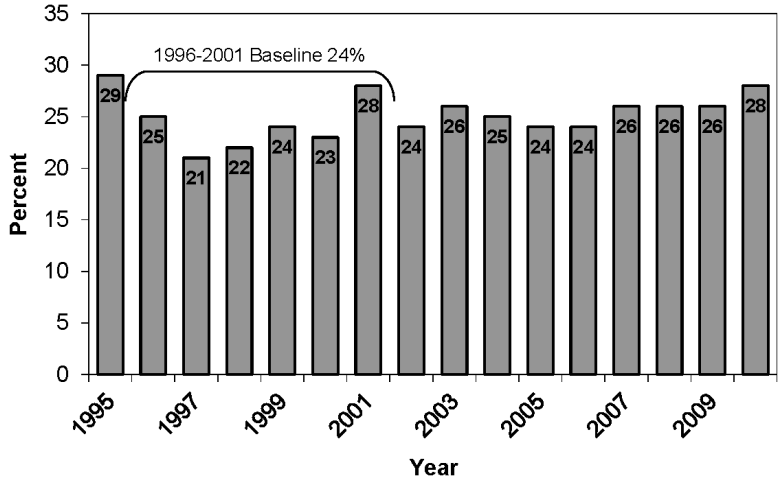
Number and Percent of All Drivers* in Serious Injury Crashes **
that Involved Alcohol: New Brunswick, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	536	127	(23.7)

* 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 10-6
Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol: New Brunswick, 1995-2010



11.0 NOVA SCOTIA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in Nova Scotia during 2010. 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); and
- trends in the alcohol-crash problem (Section 11.4).

11.1 DEATHS IN ALCOHOL-RELATED CRASHES

Table 11-1 presents information on people who died in alcohol-related crashes in Nova Scotia during 2010. 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. The first data 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, 11 people aged 16-19 were killed in motor vehicle crashes in Nova Scotia during 2010. And, in all 11 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. For example, two people aged 16-19 died in alcohol-related crashes in Nova Scotia during 2010. The next column expresses this as a percentage – i.e., 18.2% of those aged 16-19 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 16-19 represent 8.3% of all the people killed in alcohol-related crashes in Nova Scotia during 2010.

The totals at the bottom of the table provide a summary. As can be seen, 74 persons died in motor vehicle crashes in Nova Scotia during 2010. In 73 (98.6%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 24 (32.9%) involved alcohol.

Extrapolating this figure to the total number of motor vehicle fatalities (74 x .329) it can be estimated that *in Nova Scotia during 2010, 24 persons died in alcohol-related crashes*.

11.1.1 Victim age. Of all the people who died in alcohol-related crashes, 25.0% (see last column) were aged 20-25 and 26-35; 16.7% were aged 36-45; 12.5% were aged 46-55 and over 55; and 8.3% were aged 16-19.

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 26-35 died (75.0%). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – 0.0% of persons under 16 years of age and 16.7% of the fatalities over 55 years of age died in crashes involving alcohol.

Table 11-1
Deaths* in Alcohol-Related Crashes: Nova Scotia, 2010

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	2	2	100.0	0	0.0	0.0
16-19	11	11	100.0	2	18.2	8.3
20-25	14	14	100.0	6	42.9	25.0
26-35	8	8	100.0	6	75.0	25.0
36-45	9	9	100.0	4	44.4	16.7
46-55	11	11	100.0	3	27.3	12.5
>55	19	18	94.7	3	16.7	12.5
Gender						
Male	53	52	98.1	23	44.2	95.8
Female	21	21	100.0	1	4.8	4.2
Type						
Driver/Operator	48	48	100.0	17	35.4	70.8
Passenger	18	18	100.0	3	16.7	12.5
Pedestrian	8	7	87.5	4	57.1	16.7
Vehicle Occupied						
Automobiles	42	42	100.0	12	28.6	50.0
Trucks/Vans	7	7	100.0	4	57.1	16.7
Motorcycles	10	10	100.0	2	20.0	8.3
Offroad Vehicles	7	7	100.0	2	28.6	8.3
(Pedestrians)	8	7	87.5	4	57.1	16.7
TOTAL	74	73	98.6	24	32.9	100.0

* Persons dying within 12 months in collisions on and off public roadways.

11.1.2 Gender. Of all the people who died in alcohol-related crashes, 95.8% were males. The incidence of alcohol in crashes in which a male died (44.2%) was greater than the incidence of alcohol in crashes in which a female died (4.8%).

11.1.3 Victim type. Of all the people who died in alcohol-related crashes, 70.8% were drivers/operators of a vehicle; 16.7% were pedestrians; and 12.5% were passengers.

Within each of the victim types, the highest incidence of alcohol involvement (57.1%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 35.4% of the crashes in which a driver/operator died and 16.7% of those in which a passenger died.

11.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 50.0% were in an automobile; 16.7% were truck/van occupants; and 8.3% were motorcyclists and off-road vehicle occupants.

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 (57.1% versus 28.6%).

The number of fatalities in each of the other types of vehicles is too small to produce reliable estimates of alcohol-involvement.

11.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Nova Scotia during 2010. Table 11-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple).

Table 11-2
Alcohol Use Among Fatally Injured Drivers: Nova Scotia, 2010

Category of Driver	Number of Drivers*	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
16-19	3	3	100.0	1	33.3	7.1	1	33.3	9.1
20-25	10	10	100.0	5	50.0	35.7	4	40.0	36.4
26-35	6	6	100.0	4	66.7	28.6	3	50.0	27.3
36-45	5	5	100.0	2	40.0	14.3	2	40.0	18.2
46-55	8	8	100.0	2	25.0	14.3	1	12.5	9.1
>55	9	9	100.0	0	0.0	0.0	0	0.0	0.0
Gender									
Male	31	31	100.0	14	45.2	100.0	11	35.5	100.0
Female	10	10	100.0	0	0.0	0.0	0	0.0	0.0
Vehicle Type									
Automobile	27	27	100.0	10	37.0	71.4	9	33.3	81.8
Truck/Van	5	5	100.0	2	40.0	14.3	2	40.0	18.2
Motorcycle	9	9	100.0	2	22.2	14.3	0	0.0	0.0
Collision Type									
Single-Vehicle	18	18	100.0	13	72.2	92.9	11	61.1	100.0
Multiple-Vehicle	23	23	100.0	1	4.3	7.1	0	0.0	0.0
TOTAL	41	41	100.0	14	34.1	100.0	11	26.8	100.0

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

The first data 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 three drivers killed during 2010; all three of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, one (33.3%) was positive for alcohol. This means that 16-19 year old fatally injured drinking drivers accounted for 7.1% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that one of the three (33.3%) fatally injured 16-19 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, 16-19 year old drivers accounted for 9.1% of all the drivers with BACs over the legal limit.

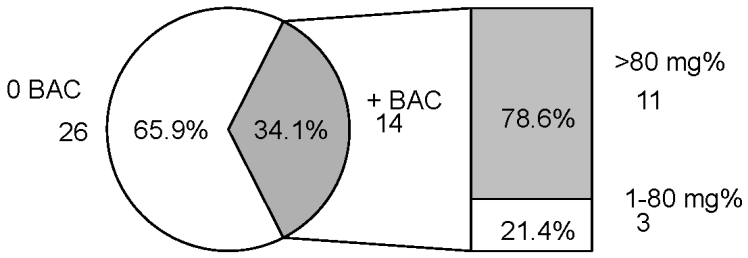
The main findings are shown by the totals at the bottom of the table. Nova Scotia had a very high testing rate in 2010, with 100.0% of fatally injured drivers being tested for alcohol use.

In Nova Scotia, 34.1% had been drinking and 11 of 14 (78.6%) 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:

- 65.9% had BACs of zero mg%
- 4.9% had BACs from 1-49 mg%;
- 2.4% had BACs from 50-80 mg%
- 12.2% had BACs from 81 to 160 mg%; and,
- 14.6% had BACs over 160 mg%.

The BAC distribution for fatally injured drivers is shown in Figure 11-1. In this figure 14 of 41 (34.1%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, 11 (78.6%) have BACs over 80 mg%.

Figure 11-1
BACs** Among Fatally Injured Drivers*: Nova Scotia, 2010



* 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

11.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 35.7% were aged 20-25; 28.6% were aged 26-35; and 14.3% were aged 36-45 and 46-55.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 36.4% were aged 20-25; 27.3% were aged 26-35; 18.2% were aged 36-45; and 9.1% were aged 16-19 and 46-55.

Within each of the age groups, fatally injured drivers age 26-35 were the most likely to have

been drinking – 66.7% of drivers in this age group had been drinking. By contrast, none of the tested drivers over age 55 had been drinking.

11.2.2 Gender differences. Males dominate the picture – they account for 100.0% of all of the fatally injured drivers who had been drinking and 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 (45.2% and 0.0%, respectively). And, 78.6% of the male 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), 71.4% were automobile drivers and 14.3% were truck/van drivers and motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 81.8% were automobile drivers and 18.2% were truck/van drivers.

Within each of the vehicle types, 40.0% of fatally injured truck/van drivers, 37.0% of automobile drivers, and 22.2% of motorcyclists were found to have been drinking.

11.2.4 Collision differences. Less than half of the drivers killed (18 of the 41) were involved in single-vehicle collisions but these crashes accounted for 92.9% of the drivers who had been drinking and 100.0% of the drivers who were legally impaired.

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 (72.2%) were positive for alcohol, compared to 4.3% of those involved in multiple-vehicle collisions.

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 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 data 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, 317 drivers were involved in crashes in which someone was seriously injured, and among these 25.9% were alcohol-related crashes.

11.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 23.2% were aged 26-35; 18.3% were aged 20-25 and over 55; 14.6% were aged 36-45; 11.0% were aged 46-55; and 9.8% were aged 16-19.

Table 11-3
Drivers in Alcohol-Related Serious Injury Crashes:
Nova Scotia, 2010

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	1	0	0.0	0.0
16-19	36	8	22.2	9.8
20-25	45	15	33.3	18.3
26-35	43	19	44.2	23.2
36-45	57	12	21.1	14.6
46-55	50	9	18.0	11.0
>55	79	15	19.0	18.3
unknown	6	4	66.7	4.9
Gender				
Male	209	58	27.8	70.7
Female	102	20	19.6	24.4
unknown	6	4	66.7	4.9
Vehicle Type				
Auto	170	45	26.5	54.9
Truck/Van	87	27	31.0	32.9
Motorcycle	34	4	11.8	4.9
Tractor Trailer	6	0	0.0	0.0
Other Hwy. Vehicle	2	1	50.0	1.2
Off-Road	10	2	20.0	2.4
Unknown	8	3	37.5	3.7
Collision Type				
Single-Vehicle	134	55	41.0	67.1
Multiple-Vehicle	183	27	14.8	32.9
TOTAL	317	82	25.9	100.0

Within each of the age groups, over two-fifths of the drivers aged 26-35 were involved in alcohol-related serious injury crashes (44.2%). The lowest incidence of involvement in alcohol-related crashes was found for those under 16 and aged 46-55 (0.0 and 18.0%, respectively).

11.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 70.7% were males. The incidence of involvement in alcohol-related serious injury crashes was greater for males than for females (27.8% and 19.6%, respectively).

11.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 54.9% were automobile drivers and 32.9% were truck/van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for drivers of off-road vehicles – 50.0% of these drivers were in crashes that involved alcohol, compared to 31.0% for truck/van drivers; 26.5% for automobile drivers; and 20.0% for off-road vehicle drivers. Among motorcyclists, 11.8% were involved in alcohol-related crashes.

11.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 67.1% 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 – 41.0% of these drivers, compared to only 14.8% for drivers involved in multiple-vehicle crashes.

11.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. Nova Scotia's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem by 2010 is also reported by comparing findings in 2010 with those from 1996-2001 baseline period.

11.4.1 Deaths in alcohol-related crashes: 1995-2010. Table 11-4 and Figure 11-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2010. 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.

Table 11-4

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Nova Scotia, 1995-2010

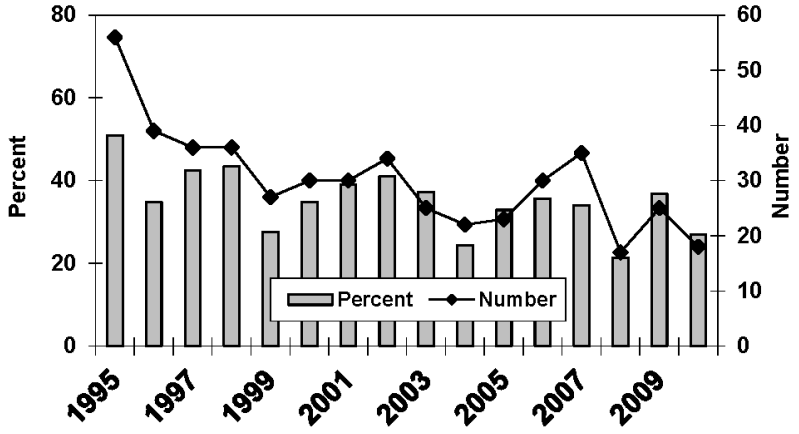
Year	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	110	56	50.9
1996	112	39	34.8
1997	85	36	42.4
1998	83	36	43.4
1999	98	27	27.6
2000	86	30	34.9
2001	77	30	39.0
2002	83	34	41.0
2003	67	25	37.3
2004	90	22	24.4
2005	70	23	32.9
2006	84	30	35.7
2007	103	35	34.0
2008	80	17	21.3
2009	68	25	36.8
2010	67	18	26.9
1996-2001 baseline	90	33	36.7

* 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 11-2

Number and Percent of Deaths Involving
a Drinking Driver: Nova Scotia, 1995-2010



As shown in the figure, the number of deaths in crashes that involved a drinking driver dropped from 56 to 22 between 1995 and 2004. There was an increase to 35 alcohol-related fatalities in 2007, a decrease to a low of 17 in 2008, an increase to 25 in 2009, and another decrease to 18 in 2010. The percentage of alcohol-related fatalities generally decreased from 50.9% in 1995 to 24.4% in 2004, rose to 35.7% in 2006, fell to a low of 21.3% in 2008, increased to 36.8% in 2009, and decreased again to 26.9% in 2010.

As shown at the bottom of the table, during the 1996-2001 baseline period there was an average of 33 fatalities involving a drinking driver and they accounted for 36.7% of all fatalities. This means that the percent of fatalities involving a drinking driver decreased by 26.7% from 36.7% in the baseline period (1996-2001) to 26.9% in 2010. And, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 45.5% decrease from an average of 33 in the baseline period (1996-2001) to 18 in 2010.

11.4.2 Fatally injured drivers: Data on alcohol use among fatally injured drivers over the 24-year period from 1987-2010 are shown in Table 11-5. 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.

As can be seen, the percent of fatally injured drivers with BACs over the legal limit peaked in 1989 (53.5%), fluctuated until 2003 (37.2%), fell in 2004 (18.9%), rose in 2005 (41.0%), decreased to a low in 2008 (18.4%), rose to 39.5% in 2009, and decreased again in 2010 (25.0%). The percent of fatally injured drivers with zero BACs dropped to its lowest point in 1989 (35.6%) fluctuated until 2005 (53.8%), rose in 2006 (70.3%), decreased in 2007 (62.8%), peaked in 2008 (77.6%), decreased in 2009 (58.1%), and rose again in 2010 (67.5%). 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, fell to 2.3% in 2003, increased in 2004 (5.4%), decreased in 2006 (2.7%), rose in 2007 (9.3%), decreased in 2009 (2.3%), and rose again in 2010 (7.5%).

Table 11-5

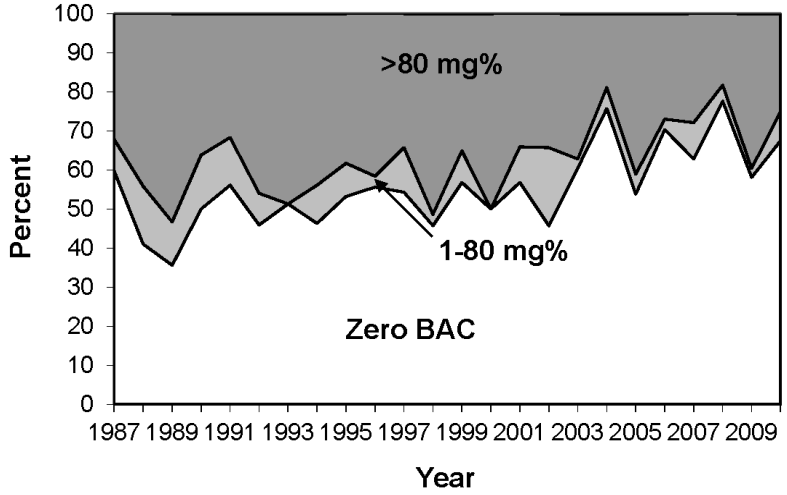
Alcohol Use Among Fatally Injured Drivers:
Nova Scotia, 1987-2010

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Grouped by BAC (mg%) 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
1996-2001 baseline	47	38	(80.9)	20	(52.6)	2	(5.3)	16	(42.1)

* dying in less than six hours.

Figure 11-3

Trends in Alcohol Use Among Driver Fatalities: Nova Scotia, 1987-2010



When compared to the 1996-2001 baseline period shown at the bottom of Table 11-5, the percentage of fatally injured drivers with zero BACs in 2010 increased by 28.3% (from 52.6% to 67.5%). Among drivers with BACs from 1-80 mg%, there was a 41.5% increase (from 5.3% to 7.5%). And among drivers with BACs over 80 mg%, there was a 40.6% decrease (from 42.1% to 25.0%).

Table 11-6 and Figure 11-4 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 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 in Table 11-6, the baseline percentage of fatally injured drivers testing positive for alcohol from 1996-2001 is 46.3%. In 2010, 34.1% of fatally injured drivers tested positive for alcohol, a 26.3% decrease from the baseline period.

11.4.3 Drivers in serious injury crashes: Table 11-7 and Figure 11-5 show information on drivers involved in alcohol-related serious injury crashes. During the baseline period (1996-2001), an average of 22.0% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 25.9% in 2010, a 17.7% increase in the problem.

Table 11-8 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 11-7 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 16-year period. Between 1995 and 1996 the percentage of all drivers in serious injury crashes that involved alcohol rose from 18.5% to 24.9%. Since then, the incidence has fluctuated until 2005 (26.1%), declined to 24.9% in 2006, peaked in 2007 (26.2%), decreased in 2008 (20.0%), and rose again in 2010 (25.8%).

In the baseline period (1996-2001), an average of 22.6% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes rose to 25.8%, a 14.2% increase.

Table 11-6

Alcohol Use Among Fatally Injured Drivers*:
Nova Scotia, 1990-2010

YEAR	Number of Drivers*	Drivers Grouped by BAC (mg%) Zero	(% Tested)	Positive	(% Tested)
1990	75	38	(50.7)	37	(49.3)
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)
1996-2001 baseline	54	29	(53.7)	25	(46.3)

* 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, 1990-2010

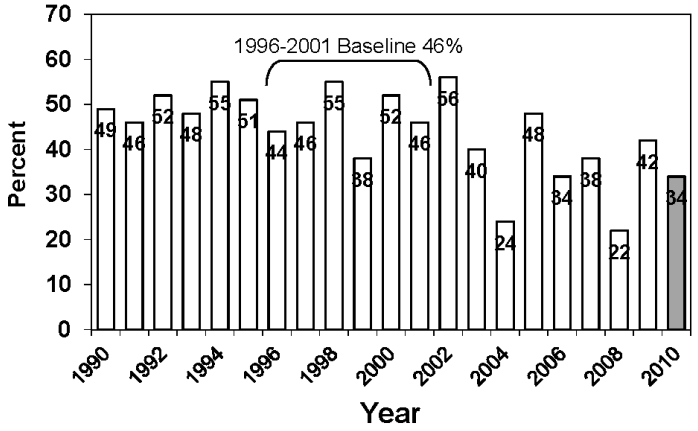


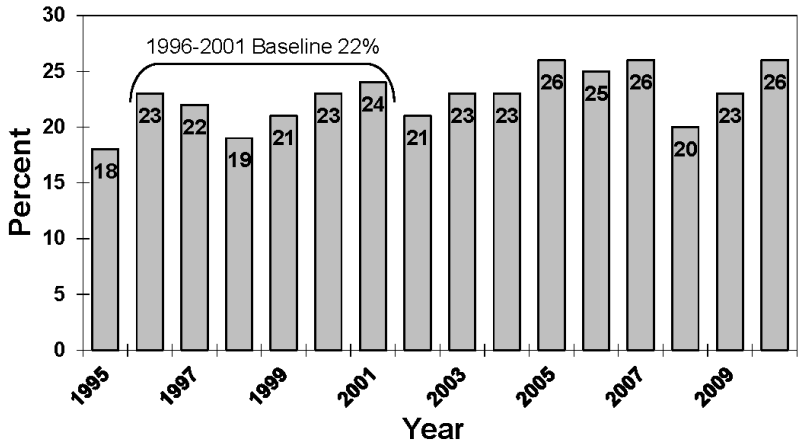
Table 11-7

Number and Percent of All Drivers in Serious Injury Crashes * that Involved Alcohol: Nova Scotia, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	490	108	(22.0)

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

Figure 11-5
Percent of All Drivers Serious Injury Crashes that Involved Alcohol*: Nova Scotia, 1995-2010



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

Table 11-8

Number and Percent of All Drivers* in Serious Injury Crashes** that Involved Alcohol: Nova Scotia, 1995-2010

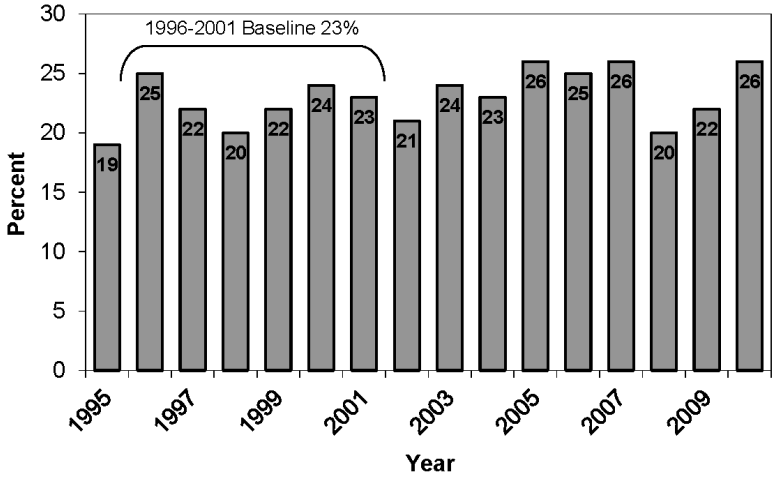
Year	Number of Drivers	Alcohol Related	
		Number	%
1995	491	91	(18.5)
1996	458	114	(24.9)
1997	458	102	(22.3)
1998	427	87	(20.4)
1999	577	125	(21.7)
2000	390	92	(23.6)
2001	400	93	(23.3)
2002	383	81	(21.1)
2003	332	78	(23.5)
2004	351	81	(23.1)
2005	330	86	(26.1)
2006	333	83	(24.9)
2007	336	88	(26.2)
2008	290	58	(20.0)
2009	332	73	(22.0)
2010	299	77	(25.8)
1996-2001 baseline	452	102	(22.6)

* 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 All Drivers in Serious Injury Crashes that Involved Alcohol: Nova Scotia, 1995-2010



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 in Prince Edward Island during 2010. 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); and
- trends in the alcohol-crash problem (Section 12.4).

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 2010. 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. The first data 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, two people aged 36-55 were killed in motor vehicle crashes in Prince Edward Island during 2010. And, in both 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. For example, one person aged 36-55 died in alcohol-related crashes in Prince Edward Island during 2010. The next column expresses this as a percentage – i.e., 50.0% of the 36-55 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 36-55 year olds represent 100.0% of all the people killed in alcohol-related crashes in Prince Edward Island during 2010.

The totals at the bottom of the table provide a summary. As can be seen, 12 persons died in motor vehicle crashes in Prince Edward Island during 2010. In all 12 (100.0%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, one (8.3%) involved alcohol.

12.1.1 Victim age. Persons aged 36-45 and 46-55 have been regrouped to ensure that individuals cannot be identified. Of all the people who died in alcohol-related crashes, 100.0%

(see last column) were aged 36-55.

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 36-55 died (25.0%). The lowest incidence of alcohol involvement was found among the persons aged under 16, 16-19, 20-25, 26-35 and over 55 – 0.0% of persons in these age groups died in crashes involving alcohol.

Table 12-1
Deaths* in Alcohol-Related Crashes: Prince Edward Island, 2010

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	1	1	100.0	0	0.0	0.0
16-19	2	2	100.0	0	0.0	0.0
20-25	1	1	100.0	0	0.0	0.0
26-35	1	1	100.0	0	0.0	0.0
36-55**	4	4	100.0	1	25.0	100.0
>55	3	3	100.0	0	0.0	0.0
Gender						
Male	9	9	100.0	1	11.1	100.0
Female	3	3	100.0	0	0.0	0.0
Type						
Driver/Operator	7	7	100.0	1	14.3	100.0
Passenger	4	4	100.0	0	0.0	0.0
Pedestrian	1	1	100.0	0	0.0	0.0
Vehicle Occupied						
Automobiles	3	3	100.0	0	0.0	0.0
Trucks/Vans	4	4	100.0	0	0.0	0.0
Motorcycles	3	3	100.0	1	33.3	100.0
Offroad Vehicles	1	1	100.0	0	0.0	0.0
(Pedestrians)	1	1	100.0	0	0.0	0.0
TOTAL	12	12	100.0	1	8.3	100.0

* Persons dying within 12 months in collisions on and off public roadways.

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

12.1.2 Gender. Of all the people who died in alcohol-related crashes, 100.0% were males. The incidence of alcohol in crashes in which a male died was 11.1%.

12.1.3 Victim type. Of all the people who died in alcohol-related crashes, 100.0% were drivers/operators.

Within each of the principal victim types, the highest incidence of alcohol involvement (11.1%)

occurred in the crashes in which a driver/operator died. Alcohol was involved in 0.0% of the crashes in which a passenger or pedestrian died.

12.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 100.0% were motorcyclists.

Within each of these vehicle types, the incidence of alcohol involvement in which a motorcyclist died was greater than the incidence of alcohol in crashes in which an automobile occupant or truck/van vehicle occupant died (33.3% versus 0.0% and 0.0%).

12.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Prince Edward Island during 2010. Table 12-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple).

The first data 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%.

Table 12-2
Alcohol Use Among Fatally Injured Drivers: Prince Edward Island, 2010

Category of Driver	Number of Drivers*	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
16-19	1	1	100.0	0	0.0	0.0	0	0.0	0.0
20-25	1	1	100.0	0	0.0	0.0	0	0.0	0.0
36-55**	3	3	100.0	1	33.3	100.0	0	0.0	0.0
>55	1	1	100.0	0	0.0	0.0	0	0.0	0.0
Gender									
Male	5	5	100.0	1	20.0	100.0	0	0.0	0.0
Female	1	1	100.0	0	0.0	0.0	0	0.0	0.0
Vehicle Type									
Automobile	3	3	100.0	0	0.0	0.0	0	0.0	0.0
Truck/Van	1	1	100.0	0	0.0	0.0	0	0.0	0.0
Motorcycle	2	2	100.0	1	50.0	100.0	0	0.0	0.0
Collision Type									
Multiple-Vehicle	6	6	100.0	1	16.7	100.0	0	0.0	0.0
TOTAL	6	6	100.0	1	16.7	100.0	0	0.0	0.0

* 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 driver will not be identified.

To illustrate, among 36-55 year olds there were three drivers killed during 2010; all of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, one (33.3%) was positive for alcohol. This means that fatally injured drinking drivers aged 36-55 accounted for 100.0% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that none (0.0%) of the fatally injured drivers aged 36-55 years of age who were tested for alcohol had BACs in excess of 80 mg%. This means that the driver who was positive for alcohol did not have 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 36-55 accounted for 0.0% of all the drivers with BACs over the legal limit.

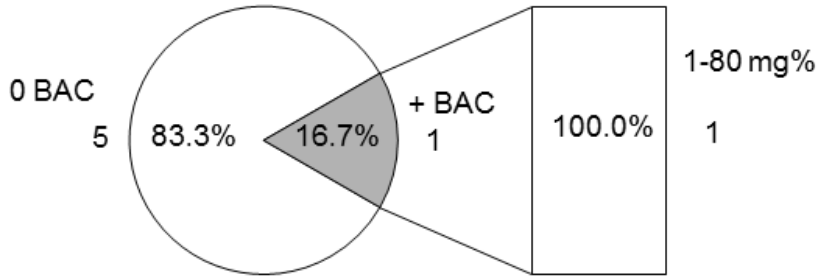
The main findings are shown by the totals at the bottom of the table. Prince Edward Island had a very high testing rate in 2010, with 100.0% of fatally injured drivers being tested for alcohol use.

In Prince Edward Island, 16.7% had been drinking and none (0.0%) of the 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:

- 83.3% had BACs of zero mg%; and,
- 16.7% had BACs from 1-49 mg%.

The BAC distribution for fatally injured drivers is shown in Figure 12-1. As can be seen, one of six (16.7%) fatally injured drivers has a positive BAC. And among fatally injured drinking drivers, one (100.0%) has a BAC from 1-80 mg%.

Figure 12-1
BACs** Among Fatally Injured
Drivers*: Prince Edward Island, 2010



* 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. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 100.0% were aged 36-55 (a regrouping of 36-45 and 46-55 year olds so that an individual driver cannot be identified); and 0.0% were aged 16-19, 20-25 and over age 55.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 100.0% were aged 36-55.

Within each of the age groups, fatally injured drivers aged 36-55 were the most likely to have been drinking – 33.3% of drivers in this age group had been drinking. By contrast, none (0.0%) of the drivers aged 16-19, 20-25 and over 55 had been drinking.

12.2.2 Gender differences. Males dominate the picture – they account for 100.0% of all the fatally injured drivers who had been drinking.

Males dominate the picture largely because they account for most of the drivers who are killed (five of the six fatalities or 83.3% are males). Fatally injured male drivers were more likely to have

been drinking than female drivers (20.0% and 0.0%, respectively). And, the male driver who was drinking did not have a BAC over the legal limit.

12.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 100.0% were motorcyclists. There were no fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%) among drivers of any vehicle type.

Within each of the vehicle types, 50.0% of fatally injured motorcyclists had been drinking. None of the fatally injured automobile drivers or truck/van drivers had been drinking.

12.2.4 Collision differences. All six of the drivers killed (100.0%) were involved in multiple-vehicle collisions. Among these drivers, one (16.7%) was positive for alcohol.

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 2010 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 data 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, 66 drivers were involved in crashes in which someone was seriously injured, and among these 19.7% were alcohol-related crashes.

12.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 30.8% were aged 20-25 and 36-45, 15.4% were over age 55; and 7.7% were aged 16-19, 26-35 and 46-55.

Table 12-3
Drivers in Alcohol-Related Serious Injury Crashes:
Prince Edward Island, 2010

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
16-19	10	1	10.0	7.7
20-25	12	4	33.3	30.8
26-35	6	1	16.7	7.7
36-45	10	4	40.0	30.8
46-55	11	1	9.1	7.7
>55	17	2	11.8	15.4
Gender				
Male	42	11	26.2	84.6
Female	24	2	8.3	15.4
Vehicle Type				
Auto	42	7	16.7	53.8
Truck/Van	14	4	28.6	30.8
Motorcycle	2	0	0.0	0.0
Other Highway Vehicle	8	2	25.0	15.4
Collision Type				
Single-Vehicle	26	11	42.3	84.6
Multiple-Vehicle	40	2	5.0	15.4
TOTAL	66	13	19.7	100.0

Within each of the age groups, over two-fifths of the drivers aged 36-45 were involved in alcohol-related serious injury crashes (40.0%). The lowest incidence of involvement in alcohol-related crashes was found for those aged 46-55 (9.1%).

12.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 84.6% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (26.2% and 8.3%, respectively).

12.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 53.8% were automobile drivers; 30.8% were truck/van drivers; and 15.4% were drivers of other highway vehicles.

The highest incidence of involvement in alcohol-related serious injury crashes was found for

truck/van drivers – 28.6% of these drivers were in crashes that involved alcohol, compared to 25.0% for other highway vehicle drivers and 16.7% for automobile drivers. Among motorcyclists, none (0.0%) were involved in alcohol-related crashes.

12.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 84.6% 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 – 42.3% of these drivers, compared to only 5.0% for drivers involved in multiple-vehicle crashes.

12.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. Prince Edward Island's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

12.4.1 Deaths in alcohol-related crashes: 1995-2010. Table 12-4 and Figure 12-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2010. 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.

Table 12-4

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Prince Edward Island, 1995-2010

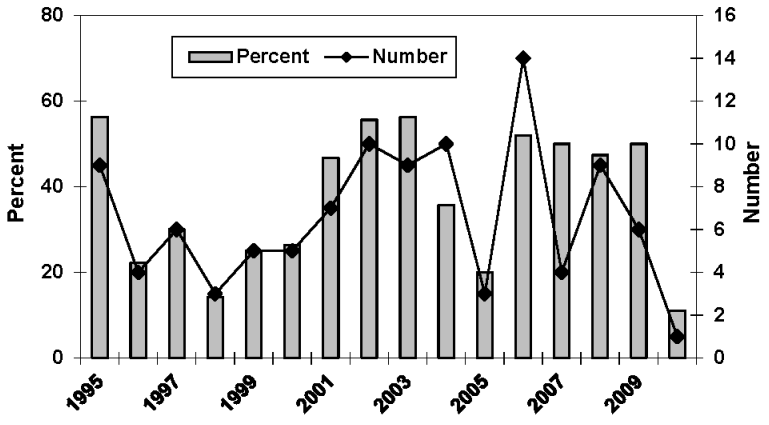
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	16	9	56.3
1996	18	4	22.2
1997	20	6	30.0
1998	21	3	14.3
1999	20	5	25.0
2000	19	5	26.3
2001	15	7	46.7
2002	18	10	55.6
2003	16	9	56.3
2004	28	10	35.7
2005	15	3	20.0
2006	27	14	51.9
2007	8	4	50.0
2008	19	9	47.4
2009	12	6	50.0
2010	9	1	11.1
1996-2001 baseline	19	5	26.3

* 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, 1995-2010



As shown in the figure, the number of deaths in crashes that involved a drinking driver generally dropped from nine to three between 1995 and 1998. There was a fluctuation between 2002 and 2005, an increase to a high of 14 in 2006, a decrease to four in 2007, an increase to nine in 2008, and a decrease to a low of one in 2010. 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, and fell to a low of 11.1% in 2010.

As shown at the bottom of the table, during the 1996-2001 baseline period, there was an average of five fatalities involving a drinking driver and they accounted for 26.3% of all fatalities. Thus, it can be seen that the percent of fatalities involving a drinking driver decreased by 58.8% from 26.3% in the baseline period (1996-2001) to 11.1% in 2010. And, in terms of the number of persons killed in crashes involving a drinking driver, there has been an 80.0% decrease from an average of five in the baseline period (1996-2001) to one in 2010.

12.4.2 Fatally injured drivers: Data on alcohol use among fatally injured drivers over the 24-year period from 1987-2010 are shown in Table 12-5. 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.

As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (60.0%) to its lowest level in 1997 (11.1%), generally increased until 2005 (42.9%), decreased in 2006 (27.3%), rose in 2007 and decreased again in 2010 (0.0%). 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 to its lowest point in 2007 and 2008 (33.3%), and rose again in 2010 (83.3%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1990 (33.3%), 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 increased again in 2010 (16.7%).

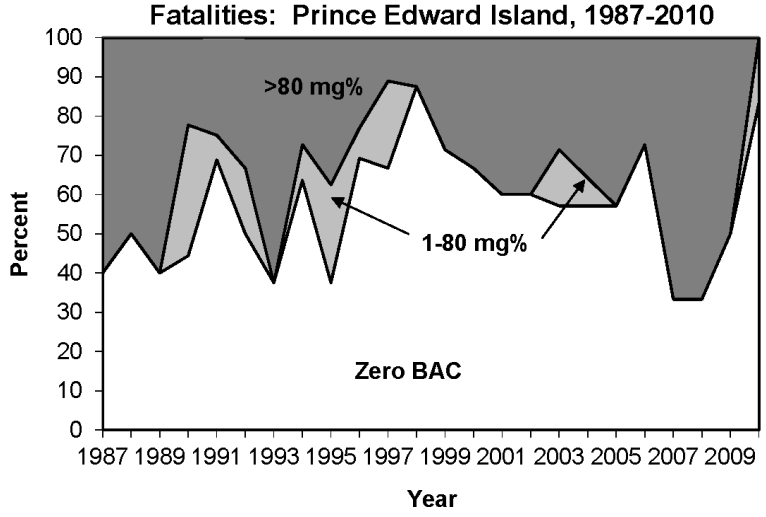
Table 12-5

Alcohol Use Among Fatally Injured Drivers:
Prince Edward Island, 1987-2010

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Grouped by BAC (mg%) 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	2	25.0	3	37.5
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
1996-2001 baseline	9	9	(100.0)	6	(66.7)	1	(11.1)	2	(22.2)

* dying in less than six hours.

Figure 12-3
Trends in Alcohol Use Among Driver Fatalities: Prince Edward Island, 1987-2010



When compared to the 1996-2001 baseline period, the percentage of fatally injured drivers with zero BACs in 2010 increased by 24.9% (from 66.7% to 83.3%). Among drivers with BACs from 1-80 mg%, there was a 50.5% increase from 11.1% to 16.7%. Among drivers with BACs over 80 mg%, there was a decrease from 22.2% to 0.0%.

Table 12-6 and Figure 12-4 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 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 12-6, the baseline percentage of fatally injured drivers testing positive for alcohol from 1996-2001 is 27.3%. In 2010, 16.7% of fatally injured drivers tested positive for alcohol, a 38.8% decrease from the baseline period.

12.4.3 Drivers in serious injury crashes: Table 12-7 and Figure 12-5 show information on drivers involved in alcohol-related serious injury crashes. As shown in Table 12-7, during the baseline period (1996-2001), an average of 23.4% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 19.7% in 2010, a 15.8% decrease in the problem.

Table 12-8 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 12-7 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 16-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, declined to 22.1% in 2007, rose slightly to 31.0% in 2009, and decreased to 19.7% in 2010.

As shown Table 12-8, in the baseline period (1996-2001) an average of 23.8% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes declined to 19.7%, a 17.2% decrease.

Table 12-6

Alcohol Use Among Fatally Injured Drivers*:
Prince Edward Island, 1990-2010

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)
1996-2001 baseline	11	8	(72.7)	3	(27.3)

* 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, 1990-2010

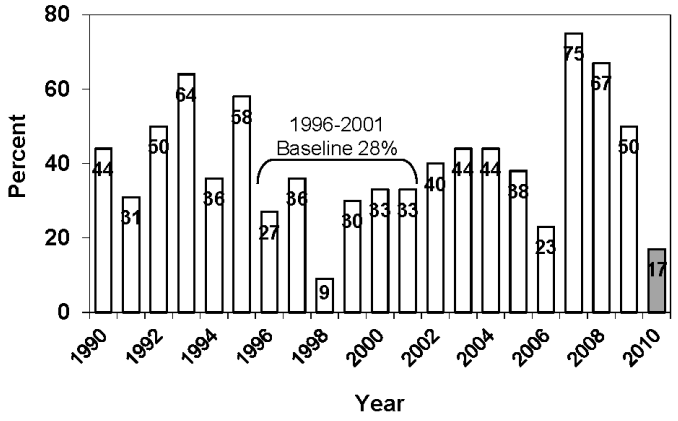


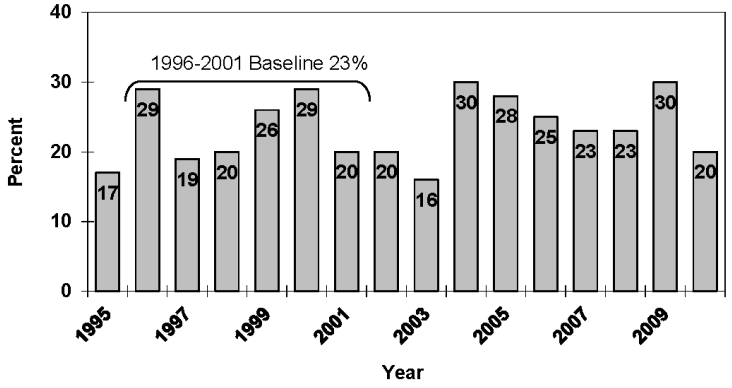
Table 12-7

Number and Percent of All Drivers in Serious Injury Crashes * that Involved Alcohol: Prince Edward Island, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	107	25	(23.4)

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

Figure 12-5
Percent of All Drivers Serious Injury Crashes that Involved Alcohol*: Prince Edward Island, 1995-2010



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

Table 12-8

Number and Percent of All Drivers* in Serious Injury Crashes**
that Involved Alcohol: Prince Edward Island, 1995-2010

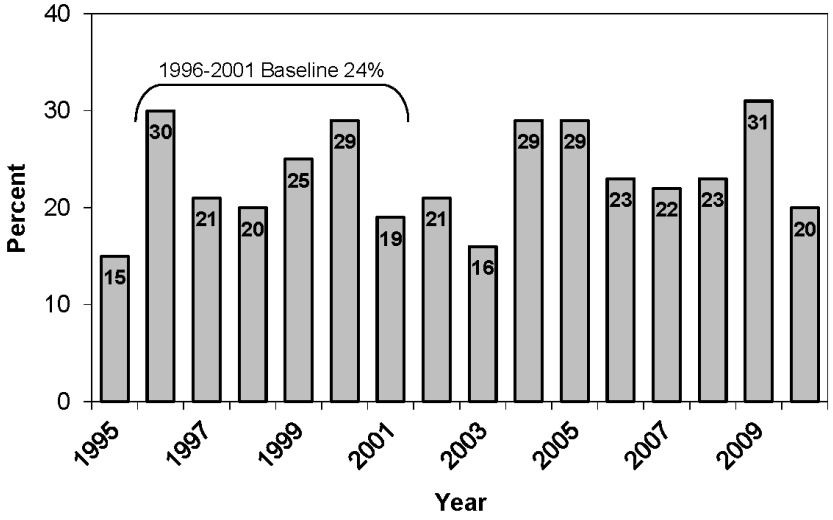
Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
1995	172	26	(15.1)
1996	74	22	(29.7)
1997	102	21	(20.6)
1998	108	22	(20.4)
1999	130	33	(25.4)
2000	110	32	(29.1)
2001	83	16	(19.3)
2002	80	17	(21.3)
2003	111	18	(16.2)
2004	92	27	(29.3)
2005	66	19	(28.8)
2006	77	18	(23.4)
2007	68	15	(22.1)
2008	35	8	(22.9)
2009	58	18	(31.0)
2010	66	13	(19.7)
1996-2001 baseline	101	24	(23.8)

* 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 All Drivers in Serious Injury Crashes
that Involved Alcohol: Prince Edward Island, 1995-2010



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 in Newfoundland and Labrador during 2010. 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); and
- trends in the alcohol-crash problem (Section 13.4).

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 2010. 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. The first data 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, six people aged 16-19 years of age were killed in motor vehicle crashes in Newfoundland and Labrador during 2010. And, in all 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. For example, one person aged 16-19 died in alcohol-related crashes in Newfoundland and Labrador during 2010. The next column expresses this as a percentage – i.e., 16.7% of those aged 16-19 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 16-19 represent 8.3% of all the people killed in alcohol-related crashes in Newfoundland and Labrador during 2010.

The totals at the bottom of the table provide a summary. As can be seen, 43 persons died in motor vehicle crashes in Newfoundland and Labrador during 2010. In 40 (93.0%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 12 (30.0%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (43 x .3) it can be estimated that *in Newfoundland and Labrador during 2010, 13 persons died in alcohol-related crashes*.

13.1.1 Victim age. Of all the people who died in alcohol-related crashes, 25.0% (see last column) were aged 26-35, 36-45 and 46-55; and 8.3% were aged 16-19, 20-25 and over 55.

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 36-45 died (60.0%). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – 0.0% of persons under age 16 and 9.1% of persons over age 55 died in crashes involving alcohol.

Table 13-1
Deaths* in Alcohol-Related Crashes: Newfoundland & Labrador, 2010

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	4	3	75.0	0	0.0	0.0
16-19	6	6	100.0	1	16.7	8.3
20-25	2	2	100.0	1	50.0	8.3
26-35	7	6	85.7	3	50.0	25.0
36-45	5	5	100.0	3	60.0	25.0
46-55	7	7	100.0	3	42.9	25.0
>55	12	11	91.7	1	9.1	8.3
Gender						
Male	30	28	93.3	9	32.1	75.0
Female	13	12	92.3	3	25.0	25.0
Type						
Driver/Operator	28	27	96.4	9	33.3	75.0
Passenger	13	12	92.3	3	25.0	25.0
Pedestrian	2	1	50.0	0	0.0	0.0
Vehicle Occupied						
Automobiles	20	20	100.0	8	40.0	66.7
Trucks/Vans	5	4	80.0	0	0.0	0.0
Motorcycles	4	4	100.0	0	0.0	0.0
Other Hwy. Vehs.	1	0	0.0	0	0.0	0.0
Off-Road Vehicles	11	11	100.0	4	36.4	33.3
(Pedestrians)	2	1	50.0	0	0.0	0.0
TOTAL	43	40	93.0	12	30.0	100.0

*persons dying within 12 months in collisions on and off public roadways

13.1.2 Gender. Of all the people who died in alcohol-related crashes, 75.0% were males. The incidence of alcohol in crashes in which a male died (32.1%) was greater than the incidence of alcohol in crashes in which a female died (25.0%).

13.1.3 Victim type. Of all the people who died in alcohol-related crashes, 75.0% were drivers/operators of a vehicle and 25.0% were passengers.

Within each of the victim types, the highest incidence of alcohol involvement (33.3%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 25.0% of the crashes in which a passenger died and 0.0% of the crashes in which a pedestrian died.

13.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 66.7% were automobile occupants and 33.3% were off-road vehicle occupants.

Within each of these vehicle types, the incidence of alcohol involvement in which an automobile occupant died (40.0%) was greater than the incidence of alcohol in crashes in which an off-road vehicle occupant died (36.4%).

13.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Newfoundland and Labrador during 2010. Table 13-2 shows the information by age group, gender, vehicle type, and collision type (single vs. multiple).

Table 13-2
Alcohol Use Among Fatally Injured Drivers: Newfoundland & Labrador, 2010

Category of Driver	Number of Drivers	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
16-19	3	3	100.0	1	33.3	16.7	1	33.3	16.7
20-25	1	1	100.0	0	0.0	0.0	0	0.0	0.0
26-35	4	4	100.0	2	50.0	33.3	2	50.0	33.3
36-45	4	4	100.0	2	50.0	33.3	2	50.0	33.3
46-55	3	3	100.0	1	33.3	16.7	1	33.3	16.7
>55	3	3	100.0	0	0.0	0.0	0	0.0	0.0
Gender									
Male	14	14	100.0	5	35.7	83.3	5	35.7	83.3
Female	4	4	100.0	1	25.0	16.7	1	25.0	16.7
Vehicle Type									
Automobile	11	11	100.0	6	54.5	100.0	6	54.5	100.0
Truck/Van	3	3	100.0	0	0.0	0.0	0	0.0	0.0
Motorcycle	3	3	100.0	0	0.0	0.0	0	0.0	0.0
Tractor-Trailer	1	1	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	16	16	100.0	5	31.3	83.3	5	31.3	83.3
Multiple-Vehicle	2	2	100.0	1	50.0	16.7	1	50.0	16.7
TOTAL	18	18	100.0	6	33.3	100.0	6	33.3	100.0

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

The first data 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 16-19 there were three drivers killed during 2010; all of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, one (33.3%) was positive for alcohol. This means that fatally injured drinking drivers aged 16-19 accounted for 16.7% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that one of the three (33.3%) fatally injured drivers aged 16-19 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 16-19 accounted for 16.7% of all the drivers with BACs over the legal limit.

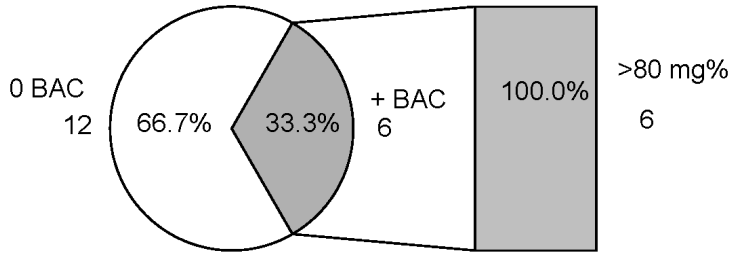
The main findings are shown by the totals at the bottom of the table. Newfoundland and Labrador had a very high testing rate in 2010, with 100.0% of fatally injured drivers being tested for alcohol use.

In Newfoundland and Labrador, 33.3% had been drinking and all six (100.0%) 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:

- 66.7% had BACs of zero mg%;
- 0.0% had BACs from 1-49 mg%;
- 0.0% had BACs from 50-80 mg%
- 11.1% had BACs from 81 to 160 mg%; and,
- 22.2% had BACs over 160 mg%.

The BAC distribution for fatally injured drivers is shown in Figure 13-1. In this figure six of 18 (33.3%) fatally injured drivers have a positive BAC. And among fatally injured drinking drivers, six (100.0%) have BACs over 80 mg%.

Figure 13-1
BACs** Among Fatally Injured Drivers*:
Newfoundland and Labrador, 2010



* 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. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 33.3% were aged 26-35 and 36-45 and 16.7% are aged 16-19 and 46-55.

Also, of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 33.3% were aged 26-35 and 36-45 and 16.7% are aged 16-19 and 46-55.

Within each of the age groups, fatally injured drivers aged 36-45 were the most likely to have been drinking – 50.0% of drivers in these age groups had been drinking; and 33.3% of the tested drivers aged 16-19 and 46-55 who had been drinking.

13.2.2 Gender differences. Males dominate the picture – they account for 83.3% 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 (14 of the 18 fatalities or 77.8% are males). Fatally injured male drivers were more likely to have been drinking than female drivers (35.7% and 25.0%, respectively). And, 100.0% of both male and 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) and fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 100.0% were automobile drivers.

Within each of the vehicle types, 54.5% of fatally injured automobile drivers were found to have been drinking. None of the fatally injured truck/van drivers, motorcyclists or tractor-trailer drivers had been drinking.

13.2.4 Collision differences. Almost all of the drivers killed (16 of the 18) were involved in single-vehicle collisions and these crashes accounted for 83.3% of drivers who had been drinking and who were legally impaired.

The reason for this apparent disparity is because alcohol is usually overrepresented in single-vehicle crashes. However, half of the drivers involved in multiple-vehicle crashes (50.0%) were positive for alcohol, compared to 31.3% of those involved in single-vehicle collisions.

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 2008 in Newfoundland and Labrador. *At the time this report was being prepared, 2009 and 2010 collision data from Newfoundland and Labrador were not available. For this reason, 2008 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 13-3 for drivers grouped in terms of age, gender, type of vehicle driven, and type of collision. The first data 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, 201 drivers were involved in crashes in which someone was seriously injured, and among these 21.4% were alcohol-related crashes.

13.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 18.6% were aged 20-25, and 16.3% were aged 16-19 and 26-35. Drivers aged under 16 accounted for only 2.3% of those involved in alcohol-related serious injury crashes.

Table 13-3
Drivers in Alcohol-Related Serious Injury Crashes:
Newfoundland & Labrador, 2008

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	7	1	14.3	2.3
16-19	18	7	38.9	16.3
20-25	24	8	33.3	18.6
26-35	27	7	25.9	16.3
36-45	25	2	8.0	4.7
46-55	23	4	17.4	9.3
>55	35	3	8.6	7.0
unknown	42	11	26.2	25.6
Gender				
Male	134	33	24.6	76.7
Female	43	4	9.3	9.3
unknown	24	6	25.0	14.0
Vehicle Type				
Auto	80	16	20.0	37.2
Truck/Van	34	10	29.4	23.3
Motorcycle	11	2	18.2	4.7
Tractor Trailer	3	0	0.0	0.0
Other Hwy. Vehicle	1	0	0.0	0.0
Off-Road	42	14	33.3	32.6
Unknown	30	1	3.3	2.3
Collision Type				
Single-Vehicle	73	27	37.0	62.8
Multiple-Vehicle	128	16	12.5	37.2
TOTAL	201	43	21.4	100.0

Within each of the age groups, almost two-fifths of the drivers aged 16-19 were involved in alcohol-related serious injury crashes (38.9%). The lowest incidence of involvement in alcohol-related crashes was found for those aged 36-45 (8.0%).

13.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 76.7% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (24.6% and 9.3%, respectively).

13.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 37.2% were automobile drivers; 32.6% were off-road vehicle drivers; 23.3% were

truck/van drivers; and 4.7% were motorcyclists.

The highest incidence of involvement in alcohol-related serious injury crashes was found for off-road vehicle drivers – 33.3% of these drivers were in crashes that involved alcohol, compared to 29.4% for truck/van drivers, 20.0% for automobile drivers; and 18.2% for motorcyclists.

13.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 62.8% 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 – 37.0% of these drivers, compared to only 12.5% for drivers involved in multiple-vehicle crashes.

13.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. A review of Newfoundland and Labrador's progress in meeting STRID 2010 goals is also reported as comparisons are made between 2010 alcohol-crash problem findings and those from the 1996-2001 baseline period.

13.4.1 Deaths in alcohol-related crashes: 1995-2010. Table 13-4 and Figure 13-2 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2010. 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.

It can be seen that during the 1996-2001 baseline period that there was an average of 12 fatalities involving a drinking driver and they accounted for 31.6% of all fatalities.

Figure 6.1

Table 13-4

Number* and Percent of Motor Vehicle Deaths** Involving a Drinking Driver: Newfoundland & Labrador, 1995-2010

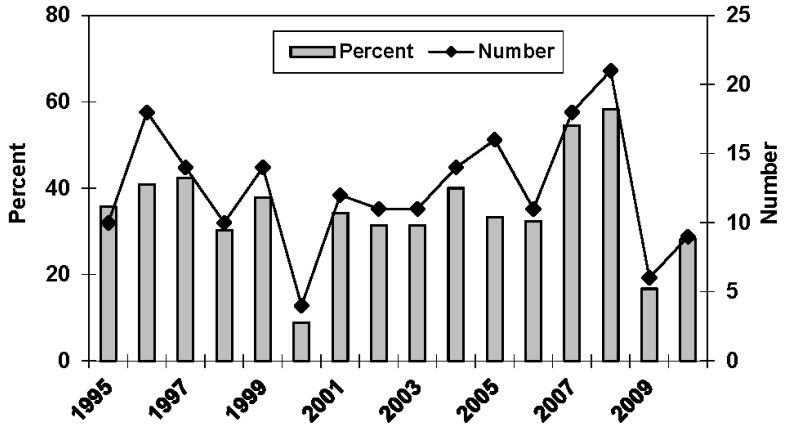
Year	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	28	10	35.7
1996	44	18	40.9
1997	33	14	42.4
1998	33	10	30.3
1999	37	14	37.8
2000	45	4	8.9
2001	35	12	34.3
2002	35	11	31.4
2003	35	11	31.4
2004	35	14	40.0
2005	48	16	33.3
2006	34	11	32.4
2007	33	18	54.5
2008	36	21	58.3
2009	36	6	16.7
2010	32	9	28.1
1996-2001 baseline	38	12	31.6

* 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 & Labrador, 1995-2010



As shown in the figure, the number of deaths in crashes that involved a drinking driver increased from 10 to 18 between 1995 and 1996. There was a general decrease to a low of four alcohol-related fatalities in 2000, a general increase to a high of 21 in 2008, a decrease to six in 2009, and an increase to nine in 2010. The percentage of alcohol-related fatalities increased from 35.7% in 1995 to 42.4% in 1997, generally decreased to a low of 8.9% in 2000, increased to 40.0% in 2004, peaked at 58.3% in 2008, decreased to 16.7% in 2009, and rose to 28.1% in 2010.

Thus, it can be seen that the percent of fatalities involving a drinking driver decreased by 11.1% from 31.6% in the baseline period (1996-2001) to 28.1% in 2010. And, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 25.0% decrease from an average of 12 in the baseline period (1996-2001) to nine in 2010.

13.4.2 Fatally injured drivers: Data on alcohol use among fatally injured drivers over the 24-year period from 1987-2010 are shown in Table 13-5. 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.

As can be seen, the percent 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 to 35.7% in 2004, decreased to 31.3% in 2005, increased in 2008 (47.6%), decreased to 15.0% in 2009, and rose again to 33.3% in 2010. The percent of fatally injured drivers with zero BACs reached 70.0% in 1995, generally declined until 1999 (43.8%), rose in 2000 (84.2%), fluctuated until 2006 (68.4%), fell to a low of 13.3% in 2007, peaked in 2009 (85.0%), and decreased in 2010 (66.7%). The percent of fatally injured drivers with BACs between 1 and 80 mg% reached 25.0% in 1990, dropped to 0.0% in 1994 and 1995, generally increased until 2001 (21.4%), fluctuated until 2005 (25.0%), fell to 0.0% in 2006, peaked in 2007 (40.0%), decreased in 2009 (0.0%), and remained at this level in 2010.

Table 13-5

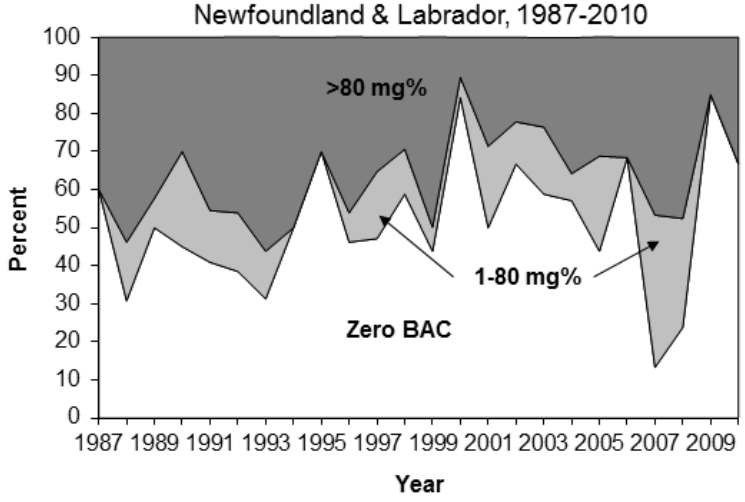
Alcohol Use Among Fatally Injured Drivers:
Newfoundland & Labrador, 1987-2010

YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Grouped by BAC (mg%) Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	15	15	100.0	9	60.0	0	0.0	6	40.0
1988	20	13	65.0	4	30.8	2	15.4	7	53.8
1989	31	26	83.9	13	50.0	2	7.7	11	42.3
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	19	16	84.2	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	17	17	100.0	10	58.8	3	17.6	4	23.5
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	20	20	100.0	17	85.0	0	0.0	3	15.0
2010	18	18	100.0	12	66.7	0	0.0	6	33.3
1996-2001 baseline	18	16	(88.9)	9	(56.3)	2	(12.5)	5	(31.3)

* dying in less than six hours.

Figure 13-3

Trends in Alcohol Use Among Driver Fatalities:
Newfoundland & Labrador, 1987-2010



When compared to the 1996-2001 baseline period, the percentage of fatally injured drivers with zero BACS in 2010 increased by 18.5% (from 56.3% to 66.7%). Among drivers with BACs from 1-80 mg%, there was a decrease (from 12.5% to 0.0%). And among drivers with BACs over 80 mg%, there was a 6.4% increase (from 31.3% to 33.3%).

Table 13-6 and Figure 13-4 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 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 13-6, the baseline percentage of fatally injured drivers testing positive for alcohol from 1996-2001 is 45.0%. In 2010, 33.3% of fatally injured drivers tested positive for alcohol, a 26.0% decrease from the baseline period.

13.4.3 Drivers in serious injury crashes: *As mentioned earlier in Section 13.3, 2009 and 2010 collision data from 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 as recent as 2008.* Table 13-7 shows information on drivers involved in alcohol-related serious injury crashes. During the baseline period (1996-2001), an average of 19.2% of drivers in serious injury crashes were in an alcohol-involved crash. Figure 13-5 rounds the annual percentages into whole numbers. There is an 11.5% increase in the percentage of drivers involved in alcohol-involved serious-injury crashes from 19.2% in the 1996-2001 baseline period to 21.4% in 2008.

Table 13-8 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 13-7 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, rose to 17.9% in 2001, declined to 17.3% in 2003, rose to 23.3% in 2004, decreased to 18.4% in 2005, rose to 22.5% in 2007, and decreased again to 21.7% in 2008.

Table 13-6

Alcohol Use Among Fatally Injured Drivers*:
Newfoundland and Labrador, 1990-2010

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)
1996-2001 baseline	20	11	(55.0)	9	(45.0)

* 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, 1990-2010

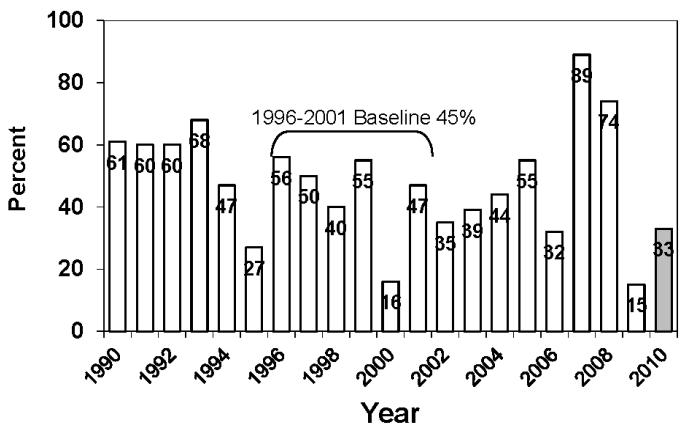


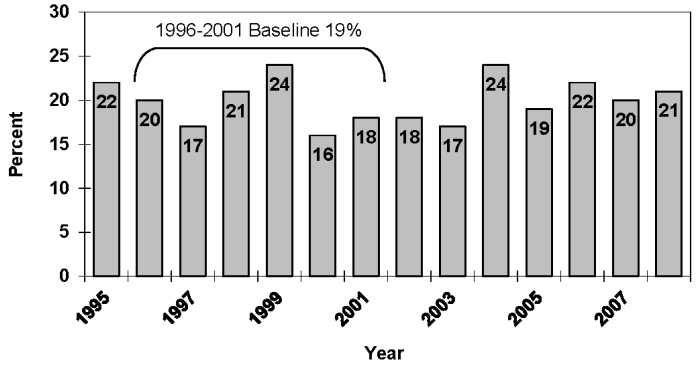
Table 13-7

Number and Percent of All Drivers in Serious Injury Crashes* that Involved Alcohol: Newfoundland and Labrador, 1995-2008

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	302	58	(19.2)

* 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, 1995-2008



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

As shown in Table 13-8, in the baseline period (1996-2001), an average of 19.5% of drivers in serious injury crashes were in an alcohol-involved crash. In 2008, the incidence of drivers in

alcohol-involved crashes rose to 21.7%, an 11.3% increase.

Table 13-8

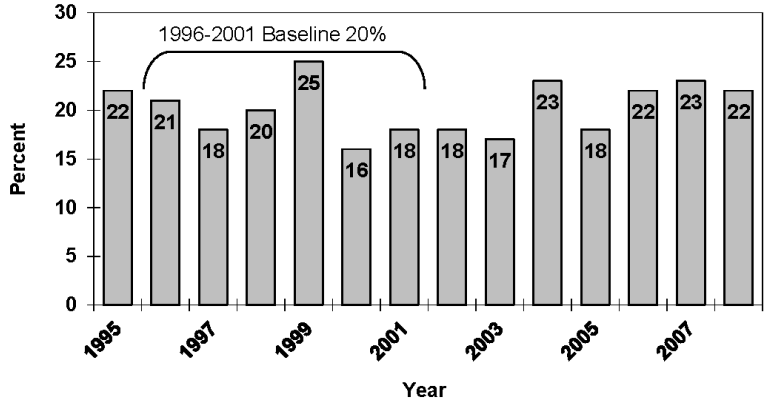
Number and Percent of All Drivers* in Serious Injury Crashes** that Involved Alcohol: Newfoundland & Labrador, 1995-2008

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	251	49	(19.5)

* 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

Figure 13-6
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Newfoundland and Labrador, 1995-2008



14.0 YUKON

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in the Yukon during 2010. 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); and
- trends in the alcohol-crash problem (Section 14.4).

Detailed results are not provided in Sections 14.1 and 14.2 because the small number of deaths in alcohol-related crashes – only three – and drivers fatally injured – only two – 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 2010, four persons died in motor vehicle crashes in the Yukon. And, in all (100.0%) of these cases, it was possible to determine if alcohol was a factor in the crash. Of these cases, three (75.0%) involved alcohol.

14.2 ALCOHOL IN FATALLY INJURED DRIVERS

The Yukon had only two fatally injured drivers in 2010. Both of these drivers (100.0%) were tested for alcohol and one (50.0%) had been drinking.

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 2010 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 data 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, 29 drivers were involved in crashes in which someone was seriously injured, and among these 44.8% were alcohol-related crashes.

14.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 30.8% were aged 26-35; 23.1% were aged 36-45; 15.4% were aged 46-55 and over age 55; and 7.7% were aged 16-19.

Within each of the age groups, three out of five (60.0%) of the drivers aged 36-45 were involved in alcohol-related serious injury crashes. The lowest incidence of involvement in alcohol-related crashes was found for those aged 20-25 (0.0%).

14.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 69.2% were males. The incidence of involvement in alcohol-related serious injury crashes was greater for males than for females (47.4% and 33.3%, respectively).

14.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 53.8% were automobile drivers; 23.1% were drivers of other highway vehicles (a regrouping of truck/van drivers and tractor-trailer drivers so that an individual driver cannot be identified); 15.4% were off-road vehicle drivers and 7.7% were motorcyclists.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers – 58.3% of these drivers were in crashes that involved alcohol, compared to 50.0% for motorcyclists and off-road vehicle drivers and 27.3% for drivers of other highway vehicles.

Table 14-1
Drivers in Alcohol-Related Serious Injury Crashes:
Yukon Territory, 2010

Category of Drivers	Number of Drivers*	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
16-19	2	1	50.0	7.7
20-25	2	0	0.0	0.0
26-35	9	4	44.4	30.8
36-45	5	3	60.0	23.1
46-55	6	2	33.3	15.4
>55	4	2	50.0	15.4
Unknown	1	1	100.0	7.7
Gender				
Male	19	9	47.4	69.2
Female	9	3	33.3	23.1
Unknown	1	1	100.0	7.7
Vehicle Type				
Auto	12	7	58.3	53.8
Other Highway Vehicles*	11	3	27.3	23.1
Motorcycle	2	1	50.0	7.7
Off-Road	4	2	50.0	15.4
Collision Type				
Single-Vehicle	15	9	60.0	69.2
Multiple-Vehicle	14	4	28.6	30.8
TOTAL	29	13	44.8	100.0

* Drivers in two vehicle types have been aggregated to ensure that an individual driver will not be identifie

14.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 69.2% 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 – 60.0% of these drivers, compared to only 28.6% for drivers involved in multiple-vehicle crashes.

14.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the

problem. The Yukon's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem by 2010 is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

14.4.1 Deaths in alcohol-related crashes: 1995-2010. 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 2010. 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, fell to two in 2007, rose to three in 2008, decreased to two in 2009, and rose again to three in 2010. 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%), decreased to 40.0% in 2007, rose in 2008 (50.0%), decreased in 2009 (28.6%), and peaked in 2010 (75.0%).

It can be seen that during the 1996-2001 baseline period that there was an average of four fatalities involving a drinking driver and they accounted for 50.0% of all fatalities This means that the percent of fatalities involving a drinking driver increased by 50.0% from 50.0% in the baseline period (1996-2001) to 75.0% in 2010. However, in terms of the number of persons killed in crashes involving a drinking driver, there has been a 25.0% decrease from an average of four in the baseline period (1996-2001) to three in 2010.

Table 14-2

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Yukon, 1995-2010

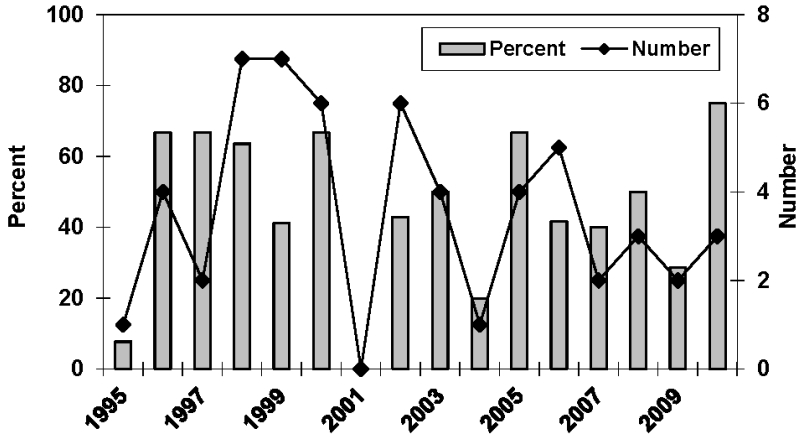
Year	Number of Deaths	Alcohol-Related Deaths Number	% of total
1995	13	1	7.7
1996	6	4	66.7
1997	3	2	66.7
1998	11	7	63.6
1999	17	7	41.2
2000	9	6	66.7
2001	4	0	0.0
2002	14	6	42.9
2003	8	4	50.0
2004	5	1	20.0
2005	6	4	66.7
2006	12	5	41.7
2007	5	2	40.0
2008	6	3	50.0
2009	7	2	28.6
2010	4	3	75.0
1996-2001 baseline	8	4	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.

Figure 14-1

Number and Percent of Deaths Involving a Drinking Driver: Yukon Territory, 1995-2010



14.4.2 Fatally injured drivers: Due to the small number of cases – e.g., two fatally injured drivers in 2010 – any trends would be unreliable, and therefore, are not presented in tables and figures.

14.4.3 Drivers in injury crashes: Since information on serious injury crashes for the Yukon has only been available since 1998, trends for drivers involved in crashes of all injury severity are shown in Table 14-3 and Figure 14-2. During the baseline period (1996-2001), an average of 19.6% of drivers in injury crashes were in an alcohol-involved crash. This compares to 18.9% in 2010, a 3.6% decrease in the problem.

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 16-year period. Between 1995 and 1997 the percentage of all drivers in injury crashes that involved alcohol decreased from 20.1% to 18.1%. Since then, the incidence rose to 22.7% in 1998, fluctuated bewen 1999 and 2004, dropped to a low of 13.7% in 2006, rose to 21.1% in 2007, decreased to 14.7% in 2008, rose to 24.6% in 2009, and decreased again to 18.3% in 2010.

As shown in Table 14-4, in the baseline period (1996-2001), an average of 19.1% of drivers in injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes declined to 18.3%, a 4.2% decrease.

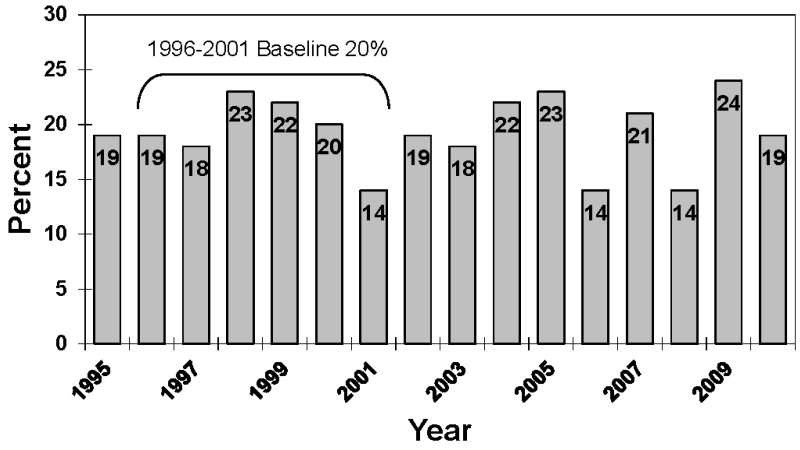
Table 14-3

Number and Percent of All Drivers in Injury Crashes*
that Involved Alcohol: Yukon, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
1995	364	70	(19.2)
1996	359	69	(19.2)
1997	293	53	(18.1)
1998	280	65	(23.2)
1999	321	71	(22.1)
2000	305	61	(20.0)
2001	278	40	(14.4)
2002	243	46	(18.9)
2003	228	40	(17.5)
2004	209	46	(22.0)
2005	191	43	(22.5)
2006	214	30	(14.0)
2007	202	43	(21.3)
2008	237	34	(14.3)
2009	191	46	(24.1)
2010	228	43	(18.9)
1996-2001 baseline	306	60	(19.6)

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

Figure 14-2
Percent of All Drivers Injury Crashes
that Involved Alcohol*: Yukon, 1995-2010



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

Table 14-4

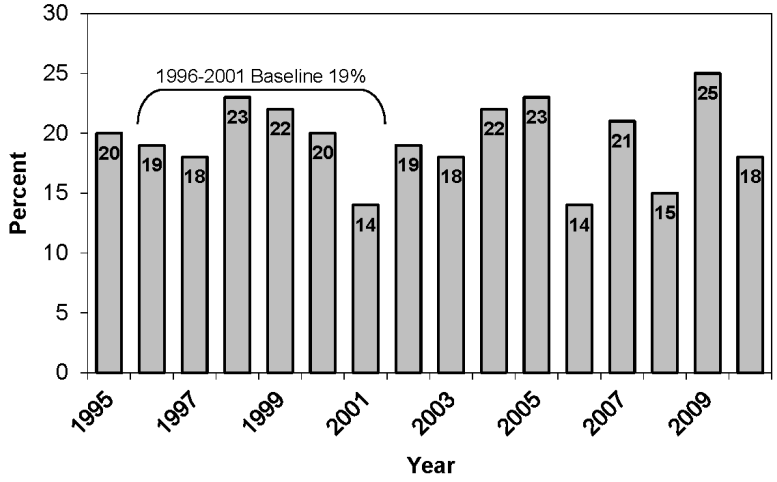
Number and Percent of All Drivers* in Injury Crashes**
that Involved Alcohol: Yukon, 1995-2009

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
1995	338	68	(20.1)
1996	346	64	(18.5)
1997	287	52	(18.1)
1998	273	62	(22.7)
1999	314	68	(21.7)
2000	299	59	(19.7)
2001	273	39	(14.3)
2002	243	46	(18.9)
2003	217	39	(18.0)
2004	200	44	(22.0)
2005	197	46	(23.4)
2006	211	29	(13.7)
2007	199	42	(21.1)
2008	232	34	(14.7)
2009	187	46	(24.6)
2010	224	41	(18.3)
1996-2001 baseline	299	57	(19.1)

* 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 14-3
Percent of All Drivers in Injury Crashes that Involved Alcohol: Yukon, 1995-2010



15.0 NORTHWEST TERRITORIES

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in the Northwest Territories during 2010. 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); and
- trends in the alcohol-crash problem (Section 15.4).

Detailed results are not provided in Sections 15.1 and 15.2 because the small number of deaths in alcohol-related crashes – only three – and drivers fatally injured – only one – 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 2010, four 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. Of these cases, three (75.0%) involved alcohol.

15.2 ALCOHOL IN FATALLY INJURED DRIVERS

The Northwest Territories had only one driver fatally injured in 2010.

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 2010 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 data 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, 16 drivers were involved in crashes in which someone was seriously injured, and among these 37.5% were alcohol-related crashes.

15.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 50.0% were aged 26-35; 33.3% were aged 46-55; and 16.7% were aged 16-19.

Within each of the age groups, three-fifths (60.0%) of the drivers aged 26-35 were involved in alcohol-related serious injury crashes. The lowest incidence of involvement in alcohol-related crashes was found for those over age 55 (0.0%).

15.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 83.3% were males. As a result, the incidence of involvement in alcohol-related serious injury crashes was greater for males than for females (45.5% and 20.0%, respectively).

15.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 50.0% were truck/van drivers and off-road vehicle drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for off-road vehicle drivers – 75.0% of these drivers were in crashes that involved alcohol, compared to 37.5% for truck/van drivers and 0.0% for automobile drivers and motorcyclists.

Table 15-1
Drivers* in Alcohol-Related Serious Injury Crashes:
Northwest Territories, 2010

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
16-19	2	1	50.0	16.7
26-35	5	3	60.0	50.0
46-55	5	2	40.0	33.3
>55	4	0	0.0	0.0
Gender				
Male	11	5	45.5	83.3
Female	5	1	20.0	16.7
Vehicle Type				
Auto	3	0	0.0	0.0
Truck/Van	8	3	37.5	50.0
Motorcycle	1	0	0.0	0.0
Off-Road	4	3	75.0	50.0
Collision Type				
Single-Vehicle	9	6	66.7	100.0
Multiple-Vehicle	7	0	0.0	0.0
TOTAL	16	6	37.5	100.0

* These numbers are slightly underestimated since 7.1% of all injuries are recorded as unspecified.

15.3.4 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.

15.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. The Northwest Territories' progress in meeting the STRID 2010 objective of a 40%

reduction in the alcohol-crash problem by 2010 is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

15.4.1 Deaths in alcohol-related crashes: 1995-2010. Due to the small number of crashes on public roadways involving principal vehicle types (e.g., only two deaths in 2010) any trends would be unreliable, and therefore are not reported.

15.4.2 Fatally injured drivers: 1987-2010. Due to the small number of cases – e.g., only one fatally injured driver in 2010 – any trends would be unreliable, and therefore are not reported.

15.4.3 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 (1996-2001), an average of 35.0% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 37.5% in 2010, a 7.1% increase in the problem.

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 16-year period. Between 1995 and 1997 the percentage of all drivers in serious injury crashes that involved alcohol decreased from 65.0% to 25.0%. Since then, the incidence peaked at 66.7% in 2000, generally decreased to 21.4% in 2004, rose to 41.2% in 2006, decreased slightly to 40.0% in 2007, rose slightly to 41.7% in 2008, decreased to a low of 20.0% in 2009, and rose again in 2010 (25.0%).

As shown in Table 15-3, in the baseline period (1996-2001), an average of 42.9% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010 the incidence of drivers in alcohol-involved crashes declined to 25.0%, a 41.7% decrease.

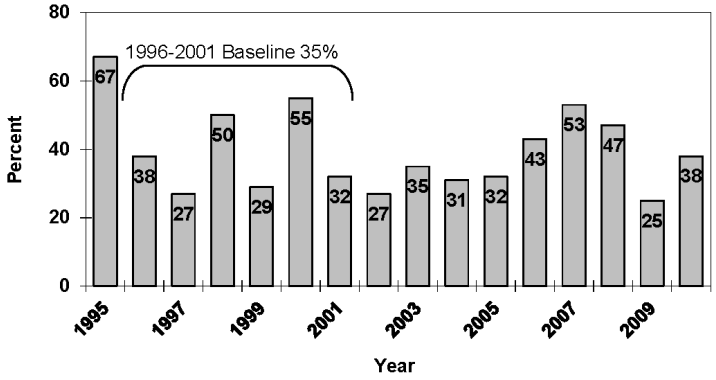
Table 15-2

Number and Percent of All Drivers in Serious Injury Crashes* that Involved Alcohol: Northwest Territories, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	20	7	(35.0)

* 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, 1995-2010



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

Table 15-3

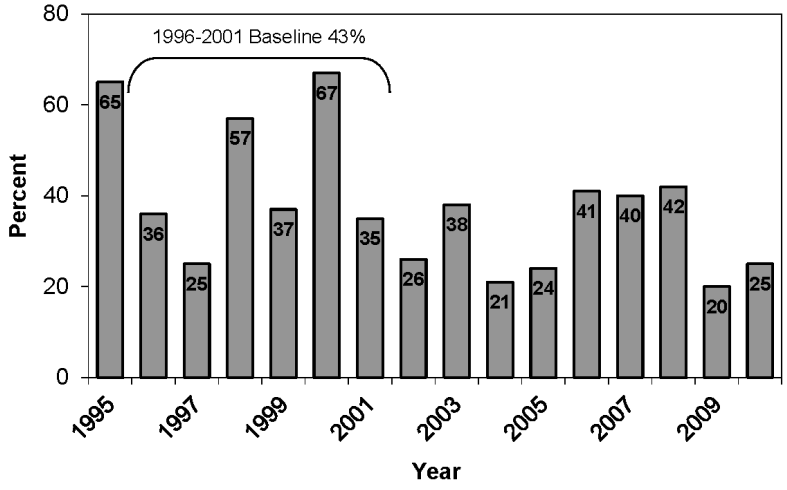
Number and Percent of All Drivers* in
Serious Injury Crashes** that Involved Alcohol:
Northwest Territories, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	14	6	(42.9)

* 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 15-2
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Northwest Territories, 1995-2010



16.0 NUNAVUT

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in Nunavut during 2010. 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); and
- trends in the alcohol-crash problem (Section 16.4).

Detailed results are not provided in Sections 16.1 and 16.2 because the small number of deaths – only two – and drivers fatally injured – none – makes the results unreliable.

16.1 DEATHS IN ALCOHOL-RELATED CRASHES

Nunavut had only two fatally injured victims in 2010.

16.2 ALCOHOL IN FATALLY INJURED DRIVERS

Nunavut had no fatally injured drivers of highway vehicles in 2010.

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. 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 data 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
Age				
20-25	3	2	66.7	100.0
26-35	2	0	0.0	0.0
Gender				
Male	4	2	50.0	100.0
Female	1	0	0.0	0.0
Vehicle Type				
Truck/Van	1	0	0.0	0.0
Off-Road	4	2	50.0	100.0
Collision Type				
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.

Within each of the age groups, 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 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three 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; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem. Nunavut's progress in meeting the STRID 2010 objective of a 40% reduction in the alcohol-crash problem by 2010 is also reported by comparing findings in 2010 with those from the 1996-2001 baseline period.

16.4.1 Deaths in alcohol-related crashes: 1995-2010. Due to the small number of crashes on public roadways involving principal vehicle types (e.g., one death in 2010) any trends would be unreliable, and therefore are not reported.

16.4.2 Fatally injured drivers: 1987-2010. Due to the small number of cases – e.g., no fatally injured drivers in 2010 – any trends would be unreliable, and therefore are not reported.

16.4.3 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 (1996-2001), an average of 40.0% of drivers in serious injury crashes were in an alcohol-involved crash. This compares to 40.0% in 2010, resulting in no change in the problem.

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 15-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 (1996-2001), an average of 50.0% of drivers in serious injury crashes were in an alcohol-involved crash. In 2010, the incidence of drivers in alcohol-involved crashes declined to 0.0%.

Table 16-2

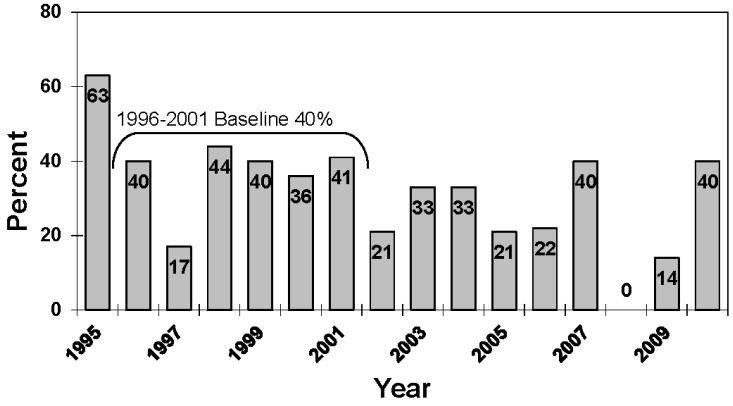
Number and Percent of All Drivers in Serious Injury Crashes* that Involved Alcohol: Nunavut, 1995-2010

Year	Number of Drivers	Alcohol Related Number	Alcohol Related %
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)
1996-2001 baseline	15	6	(40.0)

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

Figure 16-1

Percent of All Drivers Serious Injury Crashes that Involved Alcohol*: Nunavut, 1995-2010



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

Table 16-3

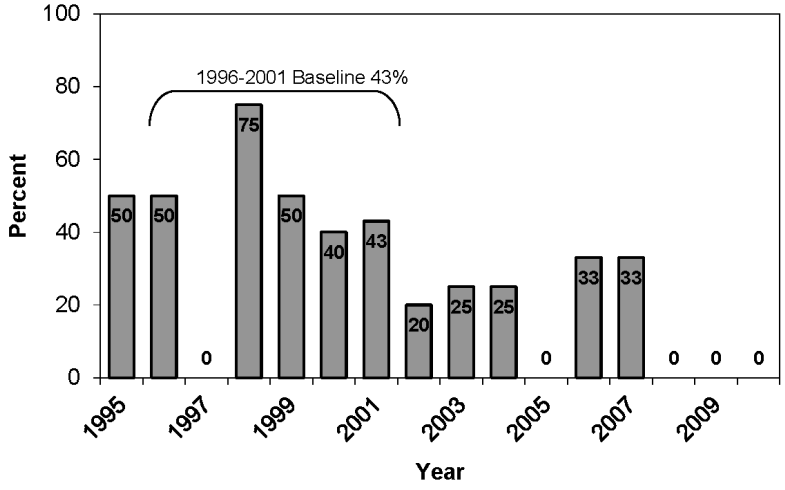
Number and Percent of All Drivers* in
Serious Injury Crashes** that Involved Alcohol:
Nunavut, 1995-2009

Year	Number of Drivers	Alcohol Related	
		Number	%
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)
1996-2001 baseline	4	2	(50.0)

* 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



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